

'05~'06  
**SEMICONDUCTOR  
PRODUCT GUIDE**



**Bipolar Junction Transistors**

**Diodes**

**MOSFETs**

**SAW Devices**

**Integrated Circuits**

**KEC**

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


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KTX201E	Transistor	22	MPS8050	Transistor	33, 59	SMAZ13V	Zener Diode	78			
KTX201F	Transistor	26	MPS8050S	Transistor	26, 56	SMAZ15V	Zener Diode	78			
KTX201U	Transistor	23	MPS8550	Transistor	33, 59	SMAZ16V	Zener Diode	78			
KTX211E	Transistor	25	MPS8550S	Transistor	26, 56	SMAZ18V	Zener Diode	78			
KTX211U	Transistor	24	MPSA05	Transistor	33, 59	SMAZ20V	Zener Diode	78			
KTX212E	Transistor	25	MPSA06	Transistor	33, 59	SMAZ22V	Zener Diode	78			
KTX212U	Transistor	24	MPSA13	Transistor	35, 60	SMAZ24V	Zener Diode	78			
KTX213E	Transistor	25	MPSA14	Transistor	35, 60	SMAZ27V	Zener Diode	78			
KTX213U	Transistor	24	MPSA27	Transistor	35, 60	SMAZ3.6V	Zener Diode	78			
KTX214E	Transistor	25	MPSA42	Transistor	36, 60	SMAZ3.9V	Zener Diode	78			
KTX214U	Transistor	24	MPSA43	Transistor	36, 60	SMAZ30V	Zener Diode	78			
KTX215E	Transistor	25	MPSA44	Transistor	36, 60	SMAZ33V	Zener Diode	78			
KTX215U	Transistor	24	MPSA45	Transistor	36, 60	SMAZ36V	Zener Diode	78			
KTX301E	Transistor	22	MPSA55	Transistor	33, 59	SMAZ4.3V	Zener Diode	78			
KTX301U	Transistor	23	MPSA56	Transistor	33, 59	SMAZ4.7V	Zener Diode	78			
KTX302U	Transistor	23	MPSA62	Transistor	35, 60	SMAZ5.1V	Zener Diode	78			
KTX303U	Transistor	23	MPSA63	Transistor	35, 60	SMAZ5.6V	Zener Diode	78			
KTX311T	Transistor	32	MPSA64	Transistor	35, 60	SMAZ6.2V	Zener Diode	78			
KTX312T	Transistor	32	MPSA77	Transistor	35, 60	SMAZ6.8V	Zener Diode	78			
KTX321U	Transistor	89	MPSA92	Transistor	36, 60	SMAZ7.5V	Zener Diode	78			
KTX401E	Transistor	22	MPSA93	Transistor	36, 60	SMAZ8.2V	Zener Diode	78			
KTX401U	Transistor	23	MPSA94	Transistor	36, 60	SMAZ9.1V	Zener Diode	78			
KTX402U	Transistor	23	MPSA94A	Transistor	36, 60	SMFB13	SBD	80			
KTX403U	Transistor	23	PF05FUUSV	TVS Diode	81	SMFB14	SBD	80			
KTX411T	Transistor	32	PG03DBTFC	TVS Diode	81	SMFB23L	SBD	80			
KTX412T	Transistor	32	PG03DBVSC	TVS Diode	81	TIP112F	Transistor	41			

PNP Transistors( V<sub>CEO</sub> : -12V ~ -65V )

V <sub>CEO</sub>	I <sub>C</sub>	TFSM	TFSV	TFS6	VSM	ESM	TESV	TES6	USM	USV	US6	TSM	TSV	TS6	SOT-23
		(Unit: mm)													
															
		■ (0.6 X0.8)	■ (1.0X0.8)	■ (1.0X0.8)	■ (1.2 X0.8)	■ (1.60X0.85)	■ (1.6 X1.2)	■ (1.6 X1.2)	■ (2.0X1.25)	■ (2.0X1.25)	■ (2.0X1.25)	■ (2.9X1.6)	■ (2.9X1.6)	■ (2.9X1.6)	■ (2.93X1.3)
-12V	500mA				KTA2012V	KTA2012E		KTA702E KTX211E KTX213E KTX215E		KTX303U	KTX321U KTX211U KTX213U KTX215U				
	-50mA														
-20V	-100mA														BCW29 BCW30
	-200mA	KTA2013F													
	-500mA														
	-1A											KTA1531T	KTX311T		
	-1.5A											KTA1532T	KTX312T	KTX511T	
	-2A														
	-3A											KTA1535T		KTX512T	
	-5A											KTA1536T			
	-10A														
-25V	-100mA														
	-800mA														
	-1A														
	-1.5A														MPS8550S
-30V	-100mA								BC858W						BC858 BC859
	-500mA								KTA2015				KTA511T	KTA711T	KTA1505S KTC9012S MMBTA63 MMBTA64
	-800mA														KTA1298 KTC8550S
	-1.5A											KTA1541T			
	-2A											KTA1544T			
	-3A											KTA1542T			
	-5A														
-40V	-200mA				2N3906V	2N3906E		2N2906E	2N3906U						KN3906S 2N3906S
	-600mA								KTN2907U						KN2907S KN4403S KTN2907S
-45V	-100mA								BC857W						BCW69 BCW70 BC857 BC860
	-200mA														
	-800mA														BC807 BCW68
	-1.5A														
-50V	-150mA	KTA2014F	KTA501F	KTA701F KTA711F KTA712F	KTA2014V	KTA2014E	KTX301E KTA501E	KTX102E KTA701E KTA711E KTA712E	KTA2014	KTX301U KTX302U KTA501U	KTX102U KTA701U KTA711U KTA712U				KTA1504S KTC9015S
	-200mA												KTB1234T		
	-500mA														
	-1A												KTA1551T		
	-2A														
	-3A												KTA1552T		
-60V	-100mA														BCW89
	-500mA														MMBTA55
	-600mA					KIN2907AE			KIN2907AU						KN2907AS KTN2907AS
	-1A														
	-3A														
	-5A														
-65V	-8A														
	-100mA								BC856W						BC856

Note) \* : Under development

PNP Transistors( V<sub>CEO</sub> : -12V ~ -65V )

SOT-89	SOT-223	DPAK	TO-92M	TO-92	TO-92L	IPAK	TO-126	TO-220IS	TO-3P(H)IS	TO-3P(N)
 (4.7X2.5)	 (6.8X1.8)	 (6.6X8.1)								
				BC309						
				MPSA62						
KTA1001		KTA1242D KTA1834D		KTA1243	KTA1241	KTA1242L KTA1834L	KTA1709			
				BC308 BC328 KTB598						
				MPS8550						
				BC558 BC559						
			KTA1021	KTA1270 KTC9012 MPSA63 MPSA64 BC516						
KTA1664			KTA1272	KTA1271 KTC8550						
KTA1663										
				KTA1282	KTA1273					
				KTB1772			KTA1705 KTB772	KTA1658		
				KN3905 KN3906 2N3906 2N3906C						
				KN2907 KN4402 KN4403 KTN2907						
				BC307 BC557 BC560						
				KTA539						
				BC327						
							BD136			
			KTA1267	KTA733 KTA733B KTA1266 KTC9015						
				KTA200						
					KTB764					
KTA1666		KTA1718D			KTA1281	KTA1718L	KTA1715			
KTB1124					KTB985					
					BC638 MPSA55 MPSA77					
					KN2907A KTN2907A					
KTA1668				MPS751 KTA708						
		KTA1040D				KTA1040L		KTA1046 KTB1366 KTB1424		
		KTA1385D				KTA1385L	KTB1151			
		*KTA1204D				*KTA1204L				
				BC556						

PNP Transistors( V<sub>CEO</sub> : -80V~ -600V)

V <sub>CEO</sub>	I <sub>C</sub>	TFSM	TFSV	TFS6	VSM	ESM	TESV	TES6	USM	USV	US6	TSM	TSV	TS6	SOT-23
		(Unit: mm)													
															
		■ (0.6 X0.8)	■ (1.0X0.8)	■ (1.0X0.8)	■ (1.2 X0.8)	■ (1.60X0.85)	■ (1.6 X1.2)	■ (1.6 X1.2)	■ (2.0X1.25)	■ (2.0X1.25)	■ (2.0X1.25)	■ (2.9X1.6)	■ (2.9X1.6)	■ (2.9X1.6)	■ (2.93X1.3)
-80V	-400mA														
	-500mA														MMBTA56
	-1A														
	-1.5A														
	-4A														
	-6A														
	-7A														
-100V	-100mA														BSS63
	-1A														KTA1520S
	-2A														
	-3A														
	-5A														
	-6A														
	-10A														
	-25A														
-120V	-100mA							KTA2017							KTA1517
	-600mA														2N5400S
	-800mA														
	-1A														
	-1.2A														
	-5A														
	-8A														
	-10A														
-140V	-10A														
	-12A														
-150V	-50mA														
	-500mA														
	-600mA														2N5401S
	-10A														
-160V	-1A														
	-1.5A														
-180V	-1.5A														
	-2A														
-200V	-100mA														
	-500mA														MMBTA93
-230V	-1A														
	-1.5A														
-250V	-50mA														
-300V	-50mA														
	-100mA											KTA1073T			
	-500mA														MMBTA92
-400V	-300mA														
	-500mA														
-480V	-2A														
	-300mA														
-600V	-1A														

Note) \* : Under development

PNP Transistors( V<sub>CEO</sub> : -80V~ -600V)

SOT-89	SOT-223	DPAK	TO-92M	TO-92	TO-92L	IPAK	TO-126	TO-220IS	TO-3P(H)IS	TO-3P(N)
 (4.7X2.5)	 (6.8X1.8)	 (6.6X6.1)								
KTA1662					KTA1274					
				MPSA56						
KTB1260					KTB1241					
							BD140			
								KTB1368		
								KTA1725		
								KTB1370		
		MJD117			*KTB2234	MJD117L		TIP117F		
								TIP32CF		
		KTA1042D				KTA1042L		KTA1049 KTB1367		
								TIP42CF		
									TIP34C	
									TIP36C	
				KTA1268 KTA2400						
				2N5400						
KTA1661					KTA1023					
		KTA1045D				KTA1045L	KTB631K			
							KTA1704			
								KTB1423		
									KTB778	KTA1940 KTB688
										KTA1695
										KTB817
KTA1660					KTA1024					
							KTA1360			
				2N5401 2N5401C						
										KTB2510
					KTA1275					
		KTA1225D				KTA1225L	KTA1700	KTA1659		
								KTA1659A		
								KTB1369		
					KTA1070					
				MPSA93						
								KTA1837		
										KTA1962A
				BF423						
				BF421						
							KTA1381			
				KTA1279 MPSA92						
				MPSA94						
					KTA1277		KTA1703			
		KTA1862D				KTA1862L				
				MPSA94A						
		KTA1807D				KTA1807L				















NPN Transistors ( V<sub>CEO</sub> : 10V ~ 40V )

V <sub>CEO</sub>	I <sub>C</sub>	TFSM	TFSV	TFS6	VSM	ESM	TESV	TES6	USM	USV	US6	TSM	TSV	TS6	SOT-23
		(Unit: mm)													
															
		■ (0.6 X0.8)	■ (1.0X0.8)	■ (1.0X0.8)	■ (1.2 X0.8)	■ (1.60X0.85)	■ (1.6 X1.2)	■ (1.6 X1.2)	■ (2.0X1.25)	■ (2.0X1.25)	■ (2.0X1.25)	■ (2.9X1.6)	■ (2.9X1.6)	■ (2.9X1.6)	■ (2.93X1.3)
10V	2A														
	40mA								KTC3600U						
	65mA								KTC3790U						
11V	50mA				*KTC3730V			*KTC3730U							
12V	100mA	KTC3770F			KTC3770V				KTC3770U						KTC3770S
	500mA				KTC4072V	KTC4072E		KTC802E KTX212E KTX214E		KTX403U	KTX412U KTX212U KTX214U				
15V	50mA								KTC4021 KTC4082		KTC813U				KTC3121 KTC3882
	100mA														BFQ31
	200mA														KTC3883
	500mA								KIN2369AU KTN2369U						KTN2369S KIN2369AS
	5A														
20V	50mA														
	100mA														BCW31 BCW32
	200mA	KTC4073F													
	300mA										KTC814U			KTC812T	KTC2875 KTD1304
	1A											KTC3531T	KTX411T		
	1.5A											KTC3532T	KTX412T		
	2A														
	3A											KTC3535T			
	5A											KTC3536T			
25V	10A														
	25mA														BF599 BFS20
	50mA								KTC4081						KTC3881S
	800mA														
	1A														
30V	1.5A														MPS8050S
	20mA					KTC4080E			KTC4080						KTC3880S KTC9016S KTC9018S
	50mA								KTC4079						KTC3879S KTC9011S
	100mA								BC848W						BC848 BC849 KTC3878S
	400mA														MMBTA517
	500mA								KTC4076				KTC611T	KTC811T	KTC3876S KTC9013S MMBTA13 MMBTA14
	600mA								KTN2222U						KN2222S KTN2222S
	800mA														KTC3265 KTC8050S
	1.5A														
	2A											KTC3544T			
3A											KTC3542T				
5A											*KTC3543T				





NPN Transistors ( V<sub>CEO</sub> : 45V ~ 120V )


V <sub>CEO</sub>	I <sub>C</sub>	TFSM	TFSV	TFS6	VSM	ESM	TESV	TES6	USM	USV	US6	TSM	TSV	TS6	SOT-23
		(Unit: mm)													
															
		■ (0.6 X0.8)	■ (1.0X0.8)	■ (1.0X0.8)	■ (1.2 X0.8)	■ (1.60X0.85)	■ (1.6 X1.2)	■ (1.6 X1.2)	■ (2.0X1.25)	■ (2.0X1.25)	■ (2.0X1.25)	■ (2.9X1.6)	■ (2.9X1.6)	■ (2.9X1.6)	■ (2.93X1.3)
40V	50mA					KTD1824E			KTD1824						
	200mA				2N3904V	2N3904E		2N2904E	2N3904U						KN3904S 2N3904S
	600mA						KTN2222AE		KTN2222AU						KN2222AS KN4401S KTN2222AS
45V	100mA								BC847W						BCW71 BCW72 BC847 BC850
	500mA														BCX19
	800mA														BC817
	1.5A														
50V	150mA	KTC4075F	KTC601F	KTC801F KTC811F KTC812F	KTC4075V	KTC4075E	KTX401E KTC601E	KTC801E KTC811E KTC812E KTX102E	KTC4075 KTC4666	KTX401U KTX402U KTC601U	KTC801U KTC811U KTC812U KTX102U				KTC3295 KTC3875S KTC9014S
	200mA														
	1A											KTC3551T			
	2A														
	3A											KTC3552T			
	5A											*KTC3553T			
60V	100mA														BCV71/72
	500mA														MMBTA05
	1A														
	3A														
	4A														
	5A														
65V	100mA								BC846W						BC846
80V	100mA														BSS64
	400mA														
	500mA														MMBTA06
	800mA														
	1A														
	1.5A														
	3A														
	4A														
	5A														
100V	2A														
	3A														
	5A														
	6A														
	7A														
	10A														
25A															

NPN Transistors ( V<sub>CE0</sub> : 45V ~ 120V )

SOT-89	SOT-223	DPAK	TO-92M	TO-92	TO-92L	IPAK	TO-126	TO-220IS	TO-3P(H)IS	TO-3P(N)
 (4.7X2.5)	 (6.8X1.8)	 (6.6X6.1)								
				KN3904 2N3904 2N3904C						
				KN2222A KN4401 KTN2222A						
				BC237 BC547 BC550						
				KTC200						
				BC337						
							BD135			
			KTC3113 KTC3199 KTC3199L	KTC945 KTC945B KTC3112 KTC3198 KTC3198L KTC9014			KTC3114			
KTD1003						KTD1028				
KTC4379		KTC2815D				KTC3209	KTC2815L	KTC2814		
KTD1624						KTD1347				
		KTC5706D KTC5707D					KTC5706L KTC5707L			
				BC637 MPSA05 MPSA27						
KTC4378 KTD2686				MPS651 KTC1008	KTD863					
		KTC2020D					KTC2020L		KTC2026 KTD2058 KTD2424	
								KTD1411	KTC1003	
		KTC5103D					KTC5103L	KTD1691		
		*KTC1804D					*KTC1804L			
				BC546						
KTC4374						KTC3227				
				MPSA06						
						KTC1006				
KTD1898						KTD1863				
							BD139			
								KTD2092		
								KTD1414 KTD2060		
								KTD2066		
								KTC4511		
								KTD1937		
		MJD112			KTD2854	MJD112L		TIP112F		
								TIP31CF		
		KTC2022D				KTC2022L		KTC2028 KTD1413 KTD2059		
								TIP41CF		
								KTD1415		
										TIP33C
										TIP35C

BJTs

## NPN Transistors ( $V_{CE0} : 140V \sim 800V$ )

V <sub>CE0</sub>	I <sub>c</sub>	TFSM	TFSV	TFS6	VSM	ESM	TESV	TES6	USM	USV	US6	TSM	TSV	TS6	SOT-23
		(Unit: mm)													
															
		■ (0.6 X0.8)	■ (1.0X0.8)	■ (1.0X0.8)	■ (1.2 X0.8)	■ (1.60X0.85)	■ (1.6 X1.2)	■ (1.6 X1.2)	■ (2.0X1.25)	■ (2.0X1.25)	■ (2.0X1.25)	■ (2.9X1.6)	■ (2.9X1.6)	■ (2.9X1.6)	■ (2.93X1.3)
120V	100mA								KTC4077						KTC3911S
	800mA														
	1A														
	1.2A														
	10A														
140V	600mA														2N5550S
	10A														
	12A														
150V	50mA														
	10A														
160V	600mA														2N5551S
	1A														
	1.5A														
180V	100mA														
	1.5A														
	2A														
	5A														
200V	100mA														
	500mA														MMBTA43
230V	1A														
	15A														
250V	50mA														
300V	50mA														
	100mA											KTC3207T			
	200mA														
	500mA														MMBTA42
350V	300mA														
400V	300mA														MMBTA44
	1.5A														
	2A														
	4A														
	5A														
	8A														
500V	3A														
	5A														
800V	1.5A														
	3A														

NPN Transistors ( V<sub>CEO</sub> : 140V ~ 800V )

SOT-89	SOT-223	DAK	TO-92M	TO-92	TO-92L	IPAK	TO-126	TO-220IS	TO-3P(H)IS	TO-3P(N)
 (4.7X2.5)	 (6.8X1.8)	 (6.8X6.1)								
				KTC3200 KTC3400						
KTC4373					KTC1027					
		KTC2025D				KTC2025L	KTD600K			
							KTC2803			
									KTD998	KTC5197 KTD718
				2N5550						
										KTC4468
										KTD1047
	KTC4372				KTC3206		KTC3423			
										KTD1510
				2N5551 2N5551C						
					KTC3228					
		KTC2983D				KTC2983L	KTC2800	KTC4370		
					KTC1026					
								KTC4370A		
								KTD2061		
					KTC3467		KTC3502			
				MPSA43						
								KTC4793		
										KTC5242A
				BF422						
				BF420						
					KTC3207		KTC2801 KTC3503	KTC3229		
							KTC4217			
				MPSA42						
				MPSA45 KTC3245						
	PZTA44			MPSA44						
				KTC3003			MJE13003			
								MJE13005F		
								KTC4419		
								MJE13007F		
								MJE13009F		
								KTC4520F		
								KTC4521F		
								KTC5027F		

■ Small Signal General Purpose Transistors

Type No.	Complementary		Max. Ratings			hFE		VCE(sat) (V)			fr (MHz)		Package	Outline (Unit: mm)				
	Mark	Mark	VCEO (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)			Min.	Typ.	VCE (V)	IC (mA)
KTA2012V	SZ	KTC4072V	LZ	-12	-500	100	270	680	-2	-10	-0.25	-200	-10	-	260	-2	-10	
KTA2014V	S □	KTC4075V	L □	-50	-150	100	70	400	-6	-2	-0.3	-100	-10	80	-	-10	-1	
KTC4072V	LZ	KTA2012V	SZ	12	500	100	270	680	2	10	0.25	200	10	-	320	2	10	
KTC4075V	L □	KTA2014V	S □	50	150	100	70	700	6	2	0.25	100	10	80	-	10	1	
KTA2012E	SZ	KTC4072E	LZ	-12	-500	100	270	680	-2	-10	-0.25	-200	-10	-	260	-2	-10	
KTA2014E	S □	KTC4075E	L □	-50	-150	100	70	400	-6	-2	-0.3	-100	-10	80	-	-10	-1	
KTC4072E	LZ	KTA2012E	SZ	12	500	100	270	680	2	10	0.25	200	10	-	320	2	10	
KTC4075E	L □	KTA2014E	S □	50	150	100	70	700	6	2	0.25	100	10	80	-	10	1	
BC858W	3 □	BC848W	1 □	-30	-100	100	125	800	-5	-2	-0.3	-10	-0.5	-	150	-5	-10	
BC857W	3 □	BC847W	1 □	-45	-100	100	125	800	-5	-2	-0.3	-10	-0.5	-	150	-5	-10	
BC856W	3 □	BC846W	1 □	-65	-100	100	125	475	-5	-2	-0.3	-10	-0.5	-	150	-5	-10	
BC848W	1 □	BC858W	3 □	30	100	100	110	800	5	2	0.25	10	0.5	-	300	5	10	
BC847W	1 □	BC857W	3 □	45	100	100	110	800	5	2	0.25	10	0.5	-	300	5	10	
BC846W	1 □	BC856W	3 □	65	100	100	110	450	5	2	0.25	10	0.5	-	300	5	10	
KTA2015	Z □	KTC4076	W □	-30	-500	100	70	240	-1	-100	-0.25	-100	-10	-	200	-6	-20	
KTA2014	S □	KTC4075	L □	-50	-150	100	70	400	-6	-2	-0.3	-100	-10	80	-	-10	-1	
KTC4076	W □	KTA2015	Z □	30	500	100	70	240	1	100	0.25	100	10	-	300	6	20	
KTC4075	L □	KTA2014	S □	50	150	100	70	700	6	2	0.25	100	10	80	-	10	1	
KTA501E	S □		-	-50	-150	200	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1	
KTC601E	L □		-	50	150	200	120	400	6	2	0.25	100	10	80	-	10	1	
KTX301E	C □		-	-50	-150	100	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1	
KTX401E	C □		-	50	150	100	120	400	6	2	0.25	100	10	80	-	10	1	
KTX201E	C □		-	±50	±150	200	120	400	±6	±2	+0.25 -0.3	±100	±10	80	-	±10	±1	

Note) ▲ : Package mounted on a ceramic board (600mm<sup>2</sup> × 0.8mm), □ : hFE Grade

■ Small Signal General Purpose Transistors

Type No.	Complementary	Max. Ratings			hFE		VCE(sat) (V)			fr (MHz)			Package	Outline (Unit: mm)			
		VCEO (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.			Typ.	VCE (V)	IC (mA)
KTA501U	S □		-50	-150	200	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1	
KTC601U	L □		50	150	200	120	400	6	2	0.25	100	10	80	-	10	1	
KTX201U	C □		±50	±150	200	120	400	±6	±2	+0.25 -0.3	±100	±10	80	-	±10	±1	
KTX301U	C □		-50	-150	100	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1	
KTX302U	C □		-50	-150	100	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1	
KTX303U	CI		-12	-500	100	270	680	-2	-10	-250	-200	-10	-	260	-2	-10	
KTX401U	C □		50	150	100	120	400	6	2	0.25	100	10	80	-	10	1	
KTX402U	C □		50	150	100	120	400	6	2	0.25	100	10	80	-	10	1	
KTX403U	CK		12	500	100	270	680	2	10	250	200	10	-	320	2	10	
KTA701E	S □		-50	-150	200	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1	
KTA702E	SZ		-12	-500	200	270	680	-2	-10	-0.25	-200	-10	-	260	-2	-10	
KTA711E	E □		-50	-150	200	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1	
KTA712E	C □		-50	-150	200	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1	
KTC801E	L □		50	150	200	120	400	6	2	0.3	100	10	80	-	10	1	
KTC802E	LZ		12	500	200	270	680	2	10	0.25	200	10	-	320	2	10	
KTC811E	V □		50	150	200	120	400	6	2	0.25	100	10	80	-	10	1	
KTC812E	W □		50	150	200	120	400	6	2	0.25	100	10	80	-	10	1	
KTX101E	B □		±50	±150	200	120	400	±6	±2	+0.25 -0.3	±100	±10	80	-	±10	±1	
KTX102E	D □		±50	±150	200	120	400	±6	±2	-0.3 +0.25	±100	±10	80	-	±10	±1	

Note) ▲ : Package mounted on a ceramic board (600mm<sup>2</sup> × 0.8mm), □ : hFE Grade

■ Small Signal General Purpose Transistors

Type No.	Mark	Internal circuit (Top view)	Max. Ratings			hFE		VCE(sat) (V)			ft (MHz)			Package	Outline (Unit: mm)			
			VCEO (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	IB (mA)	Max.	Min.	Typ.			VCE (V)	IC (mA)	
KTA701U	S □		-50	-150	200	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1	US6	
KTA711U	E □		-50	-150	200	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1		
KTA712U	F □		-50	-150	200	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1		
KTC801U	L □		50	150	200	120	400	6	2	0.25	100	10	80	-	10	1		
KTC811U	V □		50	150	200	120	400	6	2	0.3	100	10	80	-	10	1		
KTC812U	W □		50	150	200	120	400	6	2	0.3	100	10	80	-	10	1		
KTX101U	B □		±50	±150	200	120	400	±6	±2	0.25 -0.3	±100	±10	80	-	±10	±1		
KTX102U	D □		±50	±150	200	120	400	±6	±2	-0.3 0.25	±100	±10	80	-	±10	±1		
KTX211U	BF		-12	-500	200	270	680	-2	-10	-0.25	-200	-10	-	260	-2	-10		
KTX212U	BG		12	500	200	270	680	2	10	0.25	200	10	-	260	2	10		
KTX213U	BH		-12	-500	200	270	680	-2	-10	-0.25	-200	-10	-	260	-2	-10		
KTX214U	BI		12	500	200	270	680	2	10	0.25	200	10	-	260	2	10		
KTX215U	BJ		-12	-500	150	270	680	-2	-10	-0.25	-200	-10	-	260	-2	-10		

Note) ▲ : Package mounted on a ceramic board (600mm<sup>2</sup> × 0.8mm), □ : hFE Grade



Small Signal General Purpose Transistors

Type No.	Mark	Internal circuit (Top view)	Max. Ratings			hFE		VCE(sat) (V)			fr (MHz)		Package	Outline (Unit: mm)			
			VCEO (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)			Min.	Typ.	VCE (V)
KTX211E	BF		-12	-500	200	270	680	-2	-10	-0.25	-200	-10	-	260	-2	-10	
KTX212E	BG		12	500	200	270	680	2	10	0.25	200	10	-	320	2	10	
KTX213E	BH		-12	-500	200	270	680	-2	-10	-0.25	-200	-10	-	260	-2	-10	
KTX214E	BI		12	500	200	270	680	2	10	0.25	200	10	-	320	2	10	
KTX215E	BJ		-12	-500	200	270	680	-2	-10	-0.25	-200	-10	-	260	-2	-10	
KTA511T	S □		-30	-500	900▲	70	240	-1	-100	-0.25	-100	-10	-	200	-6	-20	
KTC611T	L □		30	500	900▲	70	240	1	100	0.25	100	10	-	300	6	20	
KTX111T	B □		±30	±500	900▲	70	240	±1	±100	±0.25	±100	±10	-	300 200	±6	±20	
KTA711T	S □		-30	-500	900▲	70	240	-1	-100	-0.25	-100	-10	-	200	-6	-20	
KTC811T	L □		30	500	900▲	70	240	1	100	0.25	100	10	-	300	6	20	
KTA711F	E □		-50	-150	50	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1	
KTA712F	F □		-50	-150	50	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1	
KTC811F	V □		50	150	50	120	400	6	2	0.25	100	10	80	-	10	1	
KTC812F	W □		50	150	50	120	400	6	2	0.25	100	10	80	-	10	1	
KTA701F	S □		-50	-150	50	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1	
KTC801F	L □		50	150	50	120	400	6	2	0.25	100	10	80	-	10	1	
KTX101F	B □		±50	±150	50	120	400	±6	±2	-0.3 0.25	±100	±100	80	-	±10	±1	

Small Signal General Purpose Transistors

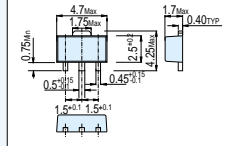
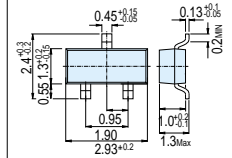
Type No.	Mark	Complementary	Mark	Max. Ratings			hFE		VCE(sat) (V)			fr (MHz)		Package	Outline (Unit: mm)			
				VCEO (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)			Min.	Typ.	VCE (V)
KTA2013F	F □	KTC4073F	G □	-20	-200	50	70	400	-6	-2	-0.3	-100	-10	80	-	-10	-1	
KTC4073F	G □	KTA2013F	F □	20	200	50	70	700	6	2	0.25	100	10	80	-	10	1	
KTA501F	S □		-	-50	-150	50	120	400	-6	-2	-0.3	-100	-10	80	-	-10	-1	
KTC601F	L □		-	50	150	50	120	400	6	2	0.25	100	10	80	-	10	1	
KTX201F	C □		-	±50	±150	200	120	400	±6	±2	+0.25 -0.3	±100	±10	80	-	±10	±1	
BCW29	C1	BCW31	D1	-20	-100	※350	110	220	-5	-2	-0.25	-10	-0.5	-	-	-	-	
BCW30	C2	BCW32	D2	-20	-100	※350	200	450	-5	-2	-0.25	-10	-0.5	-	-	-	-	
BC858	3 □	BC848	1 □	-30	-100	※350	125	800	-5	-2	-0.3	-10	-0.5	-	150	-5	-10	
BC859	4 □	BC849	2 □	-30	-100	※350	125	475	-5	-2	-0.3	-10	-0.5	-	150	-5	-10	
BCW69	H1	BCW71	K1	-45	-100	200	120	260	-5	-2	-0.3	-10	-0.5	-	150	-5	-10	
BCW70	H2	BCW72	K2	-45	-100	200	215	500	-5	-2	-0.3	-10	-0.5	-	150	-5	-10	
BC857	3 □	BC847	1 □	-45	-100	※350	125	800	-5	-2	-0.3	-10	-0.5	-	150	-5	-10	
BC860	4 □	BC850	2 □	-45	-100	※350	125	475	-5	-2	-0.3	-10	-0.5	-	150	-5	-10	
BC807	5 □	BC817	6 □	-45	-800	※350	100	630	-1	-100	-0.7	-500	-50	80	-	5	10	
BCW68	D □	-	-	-45	-800	※350	100	400	-1	-100	-0.3	-100	-10	100	-	-10	-80	
BCW89	H5	BCV71	K7	-60	-100	200	120	260	-5	-2	-0.3	-10	-0.5	-	150	-5	-10	
BC856	3 □	BC846	1 □	-65	-100	※350	125	475	-5	-2	-0.3	-10	-0.5	-	150	-5	-10	
BCW31	D1	BCW29	C1	20	100	※350	110	220	5	2	0.25	10	0.5	-	-	-	-	
BCW32	D2	BCW30	C2	20	100	※350	200	450	5	2	0.25	10	0.5	-	-	-	-	
BC848	1 □	BC858	3 □	30	100	※350	110	800	5	2	0.25	10	0.5	-	300	5	10	
BC849	2 □	BC859	4 □	30	100	※350	200	800	5	2	0.25	10	0.5	-	300	5	10	
BCW71	K1	BCW69	H1	45	100	200	110	220	5	2	0.25	10	0.5	-	300	5	10	
BCW72	K2	BCW70	H2	45	100	200	200	450	5	2	0.25	10	0.5	-	300	5	10	
BC847	1 □	BC857	3 □	45	100	※350	110	800	5	2	0.25	10	0.5	-	300	5	10	
BC850	2 □	BC860	4 □	45	100	※350	200	800	5	2	0.25	10	0.5	-	300	5	10	
BC817	6 □	BC807	5 □	45	800	※350	100	630	1	100	0.7	500	50	100	-	5	10	
BCX19	U1	-	-	45	500	200	100	600	1	100	0.62	500	50	-	200	5	10	
BCV71	K7	BCW89	H5	60	100	200	110	220	5	2	0.25	10	0.5	-	300	5	10	
BCV72	K8	-	-	60	100	200	200	450	5	2	0.25	10	0.5	-	300	5	10	
BC846	1 □	BC856	3 □	65	100	※350	110	450	5	2	0.25	10	0.5	-	300	5	10	
MMBTA55	AMX	MMBTA05	ACX	-60	-500	※350	100	-	-1	-10	-0.25	-100	-10	50	-	1	100	
MMBTA56	ANX	MMBTA06	ADX	-80	-500	※350	100	-	-1	-10	-0.25	-100	-10	50	-	1	100	
MMBTA05	ACX	MMBTA55	AMX	60	500	※350	100	-	1	10	0.25	100	10	80	-	1	10	
MMBTA06	ADX	MMBTA56	ANX	80	500	※350	100	-	1	10	0.25	100	10	100	-	2	10	
MPS8050S	BH □	KTC8550S	BJ □	25	150	※350	85	300	1	100	0.5	800	80	100	190	10	50	
MPS8550S	BJ □	KTC8050S	BH □	-25	-150	※350	85	300	-1	-100	-0.5	-800	-80	100	200	-10	-50	
KN3906S	ZAA	KN3904S	ZCA	-40	-200	※350	60	-	-1	-0.1	-0.25	-10	-1	-	250	-20	-10	
KN2907S	ZDA	KN2222S	ZBA	-40	-600	※350	35	-	-10	-0.1	-0.4	-150	-15	200	-	-20	-50	
KN4403S	ZWA	KN4401S	ZUA	-40	-600	※350	30	-	-1	-0.1	-0.4	-150	-15	200	-	-10	-20	
KN2907AS	ZHA	KN2222AS	ZGA	-60	-600	※350	75	-	-10	-0.1	-0.4	-150	-15	200	-	-20	-50	
KN2222S	ZBA	KN2907S	ZDA	30	600	※350	35	-	10	0.1	0.4	150	15	250	-	20	20	
KN3904S	ZCA	KN3906S	ZAA	40	200	※350	40	-	1	0.1	0.2	10	1	-	300	20	10	
KN2222AS	ZGA	KN2907AS	ZHA	40	600	※350	35	-	10	0.1	0.3	150	15	300	-	20	20	
KN4401S	ZUA	KN4403S	ZWA	40	600	※350	20	-	1	0.1	0.4	150	15	250	-	10	20	

Note) ※ : Package Mounted on 99.5% Alumina 10 × 8 × 0.6mm, @ : Package Mounted on Ceramic Substrate (250mm<sup>2</sup> × 0.8t), □ : hFE Grade

■ Small Signal General Purpose Transistors

Type No.	Complementary		Max. Ratings			hFE		VCE(sat) (V)			fT (MHz)			Package	Outline (Unit: mm)		
	Mark	Mark	VCEO (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	IB (mA)	Min.	Typ.	VCE (V)			IC (mA)	
KTA1505S	AZ □	KTC3876S	W □	-30	-500	150	70	400	-1	-100	-0.25	-100	-10	-	200	-6	-20
KTA1298	I □	KTC3265	E □	-30	-800	200	100	320	-1	-100	-0.4	-500	-20	-	120	-5	-10
KTA1504S	AS □	KTC3875S	AL □	-50	-150	150	70	400	-6	-2	-0.3	-100	-10	80	-	-10	-1
KTC3876S	W □	KTA1505S	AZ □	30	500	150	70	400	1	100	0.25	100	10	-	300	6	20
KTC3265	E □	KTA1298	I □	30	800	200	100	320	1	100	0.5	500	20	-	120	5	10
KTC3875S	AL □	KTA1504S	AS □	50	150	150	70	700	6	2	0.25	100	10	80	-	10	1
KTC8050S	BK □	KTC8550S	BL □	30	800	※350	100	300	1	50	0.5	500	20	-	120	5	10
KTC8550S	BL □	KTC8050S	BK □	-30	-800	※350	100	300	-1	-50	-0.5	-500	-50	-	120	-5	-10
KTC9012S	BB □	KTC9013S	BC □	-30	-500	※350	96	246	-1	-50	-0.25	-100	-10	150	-	-6	-20
KTC9013S	BC □	KTC9012S	BB □	30	500	※350	96	246	1	50	0.25	100	10	140	-	6	20
KTC9014S	BD □	KTC9015S	BE □	50	150	※350	100	1000	5	1	0.25	100	10	60	-	10	1
KTC9015S	BE □	KTC9014S	BD □	-50	-150	※350	100	600	-5	-1	-0.3	-100	-10	60	-	-10	-1
KTA1664	R □	KTC4376	P □	-30	-800	@1W	100	320	-1	-100	-0.7	-500	-20	-	120	-5	-10
KTA1663	H □	KTC4375	I	-30	-1.5A	@1W	100	320	-2	-500	-2	-1.5A	-30	-	120	-2	-500
KTA1668	J □	KTC4378	I	-60	-1A	@1W	60	200	-2	-50	-0.7	-500	-50	-	150	-10	-50
KTA1662	F □	KTC4374	I	-80	-400	@1W	70	240	-2	-50	-0.4	-200	-20	-	120	-10	-10
KTB1260	Q □	KTD1898	Z □	-80	-1A	@1W	70	400	-3	-100	-0.4	-500	-50	-	100	-5	-50
KTA1661	D □	KTC4373	C □	-120	-800	@1W	80	240	-5	-100	-1	-500	-50	-	120	-5	-100
KTA1660	B □	KTC4372	A □	-150	-50	@1W	70	240	-5	-10	-0.8	-10	-1	-	120	-30	-10
KTC4376	P □	KTA1664	R □	30	800	@1W	100	320	1	100	0.5	500	20	-	120	5	10
KTC4375	G □	KTA1663	H □	30	1.5A	@1W	100	320	2	500	2	1.5A	30	-	120	2	500
KTC4378	T □	KTA1668	J □	60	1A	@1W	100	320	2	50	0.5	500	50	-	150	10	50
KTC4374	E □	KTA1662	F □	80	400	@1W	70	240	2	50	0.4	200	20	-	100	10	10
KTD1898	Z □	KTB1260	Q □	80	1A	@1W	70	400	3	500	0.4	500	20	-	100	10	50

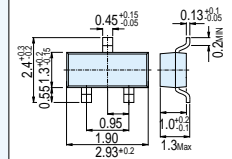
Note) ※ : Package Mounted on 99.5% Alumina 10 × 8 × 0.6mm, @ : Package Mounted on Ceramic Substrate (250mm<sup>2</sup> × 0.8t), □ : hFE Grade



■ Small Signal Low Noise Transistors

Type No.	Complementary		Max. Ratings			hFE		VCE(sat) (V)			NF (dB)				Package	Outline (Unit: mm)	
	Mark	Mark	VCEO (V)	IC (mA)	PC (mW)	Max.	VCE (V)	IC (mA)	IB (mA)	Max.	VCE (V)	IC (mA)	Rg (kΩ)	f (kHz)			
KTA2017	C □	KTC4077	D □	-120	-100	100	700	-6	-2	-0.3	-10	-1	10	-6	-0.1	10	1
KTC4666	T □	-	-	50	150	100	3600	6	2	0.25	100	10	0.5 ◇	6	0.1	10	0.1
KTC4077	D □	KTA2017	C □	120	100	100	700	6	2	0.3	10	1	10	6	0.1	10	1
BSS63	T6	-	-	-100	-100	200	30 ◆	-1	-10	-0.25	-25	-2.5	-	-	-	-	-
BSS64	U6	-	-	80	100	200	60 ◇	1	1	0.15	4	0.4	-	-	-	-	-
KTA1517	AC □	KTC3911S	AD □	-120	-100	150	700	-6	-2	-0.3	-10	-1	10	-6	-0.1	10	1
KTC3911S	AD □	KTA1517	AC □	120	100	150	700	6	2	0.3	10	1	10	6	0.1	10	1

Note) ◆ : Min., ◇ : Typ., □ : hFE Grade



Small Signal Audio Muting Transistors

Type No.	Internal circuit (Top view)	Max. Ratings			hFE		VCE(sat) (V)		fr (MHz)		Ron (Ω)			Package	Outline (Unit: mm)						
		VCE0 (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Typ.	VCE (V)			IC (mA)	Typ.	f (MHz)	IB (mA)	Vin (V)	
KTC2875	M □	-	20	300	150	200	1200	2	4	0.3	30	3	30	6	4	-	-	-	-	SOT-23	
KTD1304	MAX	-	20	300	200	200	800	2	4	0.25	100	10	60	10	1	0.6	1	1	0.3	SOT-23	
KTC814U	H □		20	300	200	200	1200	2	4	0.3	30	3	30	6	4	-	-	-	-	US6	
KTC812T	M □		20	300	900 ▲	200	1200	2	4	0.3	30	3	30	6	4	-	-	-	-	TS6	

Note) ▲ : Package mounted on a ceramic board (600mm<sup>2</sup> × 0.8mm), □ : hFE Grade

Small Signal High hFE Transistors

Type No.	Complementary	Max. Ratings			hFE			VCE(sat) (V)		fr (MHz)		Package	Outline (Unit: mm)						
		VCE0 (V)	IC (mA)	PC (mW)	Min.	Typ.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)			IB (mA)	Min.	Typ.	VCE (V)	IC (mA)	
KTD1824E	L □	-	40	50	100	400	1000	2000	10	2	0.2	10	1	-	120	10	2	ESM	
KTD1824	L □	-	40	50	100	400	1000	2000	10	2	0.2	10	1	-	120	10	2	USM	
KTC3295	T □	-	50	150	150	600	-	3600	6	2	0.25	100	10	100	250	10	10	SOT-23	
KTD1003	L □	-	50	1A	@1W	800	1500	3200	5	300	0.3	500	5	150	250	10	500	SOT-89	

Note) @ : Mounted on Ceramic Substrate (250mm<sup>2</sup> × 0.8t), □ : hFE Grade

Small Signal Darlington Transistors

Type No.	Complementary	Max. Ratings			hFE		VCE(sat) (V)		fr (MHz)		Package	Outline (Unit: mm)				
		VCE0 (V)	IC (mA)	PC (mW)	Min.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)			Min.	VCE (V)	IC (mA)	
MMBTA63	AGX	-	-30△	-500	350	5000	-5	-10	-1.5	-100	-0.1	125	-5	-10	SOT-23	
MMBTA64	AFX	-	-30△	-500	350	10000	-5	-10	-1.5	-100	-0.1	125	-5	-10		
MMBTA517	UA	-	30	400	350	30000	2	100	1	100	1	220	2	100		
MMBTA13	AIX	-	30△	500	350	5000	5	10	1.5	100	0.1	125	5	10		
MMBTA14	AHX	-	30△	500	350	10000	5	10	1.5	100	0.1	125	5	10		
KTB1234T	SY	-	LY	-50	-200	900▲	5000	-2	-10	-1.5	-100	-0.1	-	-	TSM	
KTD2686	A2	-	60 ± 10	1A	1W@	2000	2	1A	1.2	500	1	-	-	-	SOT-89	

Note) ▲ : Package mounted on a ceramic board (600mm<sup>2</sup> × 0.8mm), △: VCES  
 @ : Package mounted on a FR4 board (Cu area : 645mm<sup>2</sup>, glass epoxy, t=1.6mm) \* : Under development

Small Signal High Voltage Transistors

Type No.	Complementary		Max. Ratings			hFE				VCE(sat) (V)			ft (MHz)				Package	Outline (Unit: mm)		
	Mark	Mark	VCEO (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	Typ.	Max.	VCE (V)			IC (mA)	
KTA1520S	KMH	-	-100	-1A	150	100	300	-5	-500	-0.2	-250	-25	50	-	-	-5	-500	SOT-23		
2N5400S	ZN	-	-120	-600	※350	40	180	-5	-10	-0.2	-10	-1	100	-	400	-10	-10			
2N5401S	ZE	-	-150	-600	※350	60	240	-5	-10	-0.2	-10	-1	100	-	300	-10	-10			
2N5550S	ZP	-	-140	600	※350	60	250	5	10	0.15	10	1	100	-	300	10	10			
2N5551S	ZF	-	-160	600	※350	80	250	5	10	0.15	10	1	100	-	300	10	10			
MMBTA93	YW	MMBTA43	ABX	-200	-500	※350	40	-	-10	-10	-0.5	-20	-2	50	-	-	-20			-10
MMBTA92	YV	MMBTA42	AAX	-300	-500	※350	40	-	-10	-10	-0.5	-20	-2	50	-	-	-20	-10		
MMBTA43	ABX	MMBTA93	YW	200	500	※350	40	-	10	10	0.5	20	2	50	-	-	20	10		
MMBTA42	AAX	MMBTA92	YV	300	500	※350	40	-	10	10	0.5	20	2	50	-	-	20	10		
MMBTA44	APX	-	400	300	※350	50	200	10	10	0.5	10	1	20	-	-	10	10			
PZTA44	-	-	400	300	2W	50	200	10	10	0.5	10	1	-	-	-	-	-	SOT-223		
KTA1073T	SX □	KTC3207T	LX □	-300	-100	900▲	50	150	-10	-20	-0.5	-20	-2	50	55	-	-10	-20	TSM	
KTC3207T	LX □	KTA1073T	SX □	300	100	900▲	50	150	10	20	1	10	1	50	-	-	10	20		
KTC4372	A □	KTA1660	B □	150	50	@1W	70	240	5	10	0.5	10	1	-	120	-	30	10	SOT-89	
KTC4373	C □	KTA1661	D □	120	800	@1W	80	240	5	100	1	500	50	-	120	-	5	100		

Note) ※ : Package Mounted on 99.5% Alumina 10×8×0.6mm, @ : Mounted on Ceramic Substrate (250mm²×0.8), □ : hFE Grade, ▲ : Package mounted on a ceramic board (600mm²×0.8mm), \* : Under development

Small Signal RF/ VHF/ UHF Transistors

Type No.	Max. Ratings			hFE				VCE(sat) (V)			ft (MHz)				Cob (pF)		NF (dB)		Gpe (dB)	Package	Outline (Unit: mm)		
	Mark	VCEO (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	Typ.	Max.	VCE (V)	IC (mA)	Max.	VCE (V)				f (MHz)	Min.
KTC3770F	7 □	12	100	50	50	250	10	20	-	-	-	5G	7G	-	10	20	1.0	10	2	1G	-	TFSM	
KTC3730V	R □	11	50	100	56	180	10	5	0.5	10	5	1.4G	3.2G	-	10	10	1.5	10	3.5	0.5	-	VSM	
KTC3770V	R □	12	100	150	50	250	10	20	-	-	-	5G	7G	-	10	20	1.0	10	2	1G	-		
KTC3780V	RE	6	50	100	50	250	5	10	-	-	-	5G	8G	-	5	10	1.0	5	-	-	-		
KTC4080E	Q □	30	20	100	40	200	6	1	-	-	-	300	550	-	6	1	-	-	5	2.5	15	ESM	
KTC3730U	R □	11	50	100	56	180	10	5	0.5	10	5	1.4G	3.2G	-	10	10	1.5	10	3.5	0.5	-	USM	
KTC3770U	R □	12	100	150	50	250	10	20	-	-	-	5G	7G	-	10	20	1.0	10	2	1G	-		
KTC4021	VA	15	50	100	60	320	3	8	-	-	-	1100	1500	-	10	8	1.3	10	-	-	-		
KTC4082	HF	15	50	100	40	200	3	8	-	-	-	650	1100	-	10	8	1.3	10	-	-	-		
KTC4081	HH	25	50	100	20	200	10	10	0.2	15	1.5	250	600	-	10	10	1.6	10	-	-	-		
KTC4080	Q □	30	20	100	40	200	6	1	-	-	-	300	550	-	6	1	-	-	5	100	15		
KTC4079	R □	30	50	100	40	240	12	2	0.4	10	1	100	-	400	10	1	3.2	10	-	-	27		
KTC3780U	RE	6	50	100	50	250	5	10	-	-	-	5G	8G	-	5	10	1.0	5	-	-	-		
KTC3790U	R □	10	65	100	50	250	8	20	-	-	-	-	9G	-	8	20	0.7◇	10	2.5	1G	-		
KTC3600U	R □	10	40	100	50	160	8	20	-	-	-	7G	10G	-	8	20	-	-	2.5	1G	-		
KTC813U	VA	15	50	200	60	320	3	8	-	-	-	1100	1500	-	10	8	1.3	10	-	-	-	US6	

Note) ◇ : Typ., □ : hFE Grade, ※ : Package Mounted on 99.5% Alumina 10×8×0.6mm \* : Under development

Small Signal RF/ VHF/ UHF Transistors

Type No.	Mark	Max. Ratings			hFE		VCE(sat) (V)			fr (MHz)			Cob (pF)		NF (dB)		Gpe (dB)	Package	Outline (Unit: mm)			
		VCEO (V)	IC (mA)	Pc (mW)	Min.	Max.	Max.	IC (mA)	IB (mA)	Min.	Typ.	Max.	VCE (V)	IC (mA)	Max.	VCB (V)				f (MHz)	Min.	
BFQ31	S2	15	100	200	20	-	1	3	0.4	10	1	600	-	-	10	4	1.7	10	6	60		
BF599	G2	25	25	200	40	-	10	7	-	-	-	550	-	10	7	0.35	10	-	-	-		
BFS20	G1	25	25	200	40	-	10	7	-	-	-	275	550	-	10	7	0.35	10	-	-		
KTC3121	VA	15	50	150	60	320	3	8	-	-	-	1100	1500	-	10	8	1.3	10	-	-		
KTC3770S	R □	12	100	150	50	250	10	20	-	-	-	5G	7G	-	10	20	1.0	10	2	1G		
KTC3780S	RE	6	50	100	50	250	5	10	-	-	-	5G	8G	-	5	10	1.0	5	-	-		
KTC3882	HF	15	50	150	40	200	3	8	-	-	-	650	1100	-	10	8	1.3	10	-	-		
KTC3883	AEO	15	200	150	55	140	1	10	0.25	10	1	500	-	-	10	10	3	10	-	-		
KTC3881S	HH	25	50	150	20	200	10	10	0.2	15	1.5	250	600	-	10	10	1.6	10	-	-		
KTC3880S	AQ □	30	20	150	40	200	6	1	-	-	-	300	550	-	6	1	-	-	5	100		15
KTC3879S	R □	30	50	150	40	240	12	2	0.4	10	1	100	-	400	10	1	3.2	10	-	-		27
KTC3878S	F □	30	100	150	40	240	12	2	0.4	10	1	80	120	-	10	2	-	-	3.5	1		-
KTC9011S	BA □	30	50	350	54	198	5	1	0.4	10	1	100	-	-	10	1	-	-	2.0	10		-
KTC9016S	BF □	30	20	350	54	198	5	1	-	-	-	260	-	-	6	1	4.0	100	-	-		15
KTC9018S	BG □	30	20	350	54	198	5	1	-	-	-	500	800	-	10	8	4.0	100	-	-		15

Note) ◇ : Typ., □ : hFE Grade, ※ : Package Mounted on 99.5% Alumina 10×8×0.6mm \* : Under development

Small Signal Strobe Flash Transistors

Type No.	Mark	Complementary	Max. Ratings			hFE		VCE(sat) (V)			fr(MHz)			Package	Outline (Unit: mm)		
			VCEO (V)	IC (A)	Pc (mW)	Min.	Max.	VCE (V)	IC (mA)	IB (mA)	Typ.	VCE (V)	IC (mA)				
KTA1001	K □	-	-	-20	-3	@1W	100	320	-2	-500	-0.5	-3A	-75	170	-2	-500	
KTC4377	S □	-	-	10	2	@1W	140	600	1	500	0.5	2A	50	150	1	500	

Note) ◇ : Typ., ※ : Package Mounted on 99.5% Alumina 10×8×0.6mm, @ : Mounted on Ceramic Substrate (250mm×0.8t), □ : hFE Grade

Small Signal Switching Transistors

Type No.	Mark	Complementary	Max. Ratings			hFE		VCE(sat) (V)			ft (MHz)	ton (ns)	toff (ns)	td (ns)	tr (ns)	tstg (ns)	tr (ns)	Package	Outline (Unit: mm)	
			VCEO (V)	IC (mA)	Pc (mW)	Max.	VCE (V)	IC (mA)	IB (mA)	Max.										IC (mA)
2N3906U	ZA	2N3904U	ZC	-40	-200	100	300	-1	-10	-0.25	-10	-1	250	-	-	35	35	225	75	
2N3904U	ZC	2N3906U	ZA	40	200	100	300	1	10	0.2	10	1	300	-	-	35	35	200	50	
KTN2907U	ZD	KTN2222U	ZB	-40	-600	100	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30	
KTN2907AU	ZH	KTN2222AU	ZG	-60	-600	100	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30	
KTN2369AU	ZK	-	-	15	500	100	120	1	10	0.25	10	1	500	12	15	-	-	13	-	
KTN2369U	ZI	-	-	15	500	100	120	1	10	0.25	10	1	500	12	-	-	-	-	-	
KTN2222U	ZB	KTN2907U	ZD	30	600	100	300	10	150	0.3	150	15	300	-	-	10	25	225	60	
KTN2222AU	ZG	KTN2907AU	ZH	40	600	100	300	10	150	0.4	150	15	250	-	-	10	25	225	60	
2N3906V	ZA	2N3904V	ZC	-40	-200	100	300	-1	-10	-0.25	-10	-1	250	-	-	35	35	225	75	
2N3904V	ZC	2N3906V	ZA	40	200	100	300	1	10	0.2	10	1	300	-	-	35	35	200	50	
2N3906E	ZA	2N3904E	ZC	-40	-200	100	300	-1	-10	-0.25	-10	-1	250	-	-	35	35	225	75	
2N3904E	ZC	2N3906E	ZA	40	200	100	300	1	10	0.2	10	1	300	-	-	35	35	200	50	
KTN2222AE	ZG	KTN2907AE	ZH	40	600	100	300	10	150	0.4	150	15	250	-	-	10	25	225	60	
KTN2907AE	ZH	KTN2222AE	ZG	-60	-600	100	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30	

Note) ◇ : Typ., ※ : Package Mounted on 99.5% Alumina 10×8×0.6mm, @ : Mounted on Ceramic Substrate (250mm×0.8t), □ : hFE Grade

■ Small Signal Switching Transistors

Type No.	Complementary		Max. Ratings			hFE		VCE(sat) (V)			ft (MHz)	t <sub>on</sub> (ns)	t <sub>off</sub> (ns)	t <sub>d</sub> (ns)	t <sub>r</sub> (ns)	t <sub>stg</sub> (ns)	t <sub>f</sub> (ns)	Package	Outline (Unit: mm)		
	Mark	Mark	V <sub>CEO</sub> (V)	I <sub>C</sub> (mA)	P <sub>C</sub> (mW)	Max.	V <sub>CE</sub> (V)	I <sub>C</sub> (mA)	I <sub>B</sub> (mA)	Max.										I <sub>C</sub> (mA)	I <sub>B</sub> (mA)
2N2904E	ZC	-	-	40	0.2	0.2	300	1	10	0.2	10	1	300	-	-	35	35	200	50	TES6	
2N2906E	ZA	-	-	-40	-0.2	0.2	300	-1	-10	-0.25	-10	-1	250	-	-	35	35	225	75		
2N3906S	ZA	2N3904S	ZC	-40	-200	※350	300	-1	-0.1	-0.25	-10	-1	250	-	-	35	35	225	75	SOT-23	
2N3904S	ZC	2N3906S	ZA	40	200	※350	300	1	10	0.2	10	1	300	-	-	35	35	200	50		
KTN2907S	ZD	KTN2222S	ZB	-40	-600	※350	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30		
KTN2907AS	ZH	KTN2222AS	ZG	-60	-600	※350	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30		
KTN2369S	ZI	-	-	15	500	※350	120	1	10	0.25	10	1	-	12	-	-	-	-	-		
KTN2369AS	ZK	-	-	15	500	※350	120	1	10	0.25	10	1	-	12	15	-	-	13	-		
KTN2222S	ZB	KN2907S	ZDA	30	600	※350	300	10	150	0.4	150	15	250	-	-	10	25	225	60		
KTN2222AS	ZG	KTN2907AS	ZH	40	600	※350	300	10	150	0.3	150	15	300	-	-	10	25	225	60		
KTA1666	W □	KTC4379	U □	-50	-2A	@1W	240	-2	-500	-0.5	-1A	-50	120 ◇	0.1 ◇	-	-	-	1.0 ◇	0.1 ◇	SOT-89	
KTB1124	X □	KTD1624	Y □	-50	-3A	@1W	400	-2	-100	-0.7	-2A	-100	150 ◇	70 ◇	-	-	-	450 ◇	35 ◇		
KTC4379	U □	KTA1666	W □	50	2A	@1W	240	2	500	0.5	1A	50	120 ◇	0.1 ◇	-	-	-	1.0 ◇	0.1 ◇		
KTD1624	Y □	KTB1124	X □	50	3A	@1W	400	2	100	0.5	2A	100	150 ◇	70 ◇	-	-	-	650 ◇	35 ◇		

Note) ◇ : Typ., ※ : Package Mounted on 99.5% Alumina 10×8×0.6mm, @ : Mounted on Ceramic Substrate (250mm²×0.8), □ : hFE Grade

■ Small Signal Low VCE(sat) Transistors ( A )

Type No.	Complementary		Max. Ratings			hFE		VCE(sat) (V)			fr(MHz)		Package	Outline (Unit: mm)				
	Mark	Mark	V <sub>CEO</sub> (V)	I <sub>C</sub> (A)	P <sub>C</sub> ▲ (mW)	Min.	Max.	V <sub>CE</sub> (V)	I <sub>C</sub> (mA)	I <sub>B</sub> (mA)	Typ.	V <sub>CE</sub> (V)			I <sub>C</sub> (mA)			
KTA1531T	SA □	KTC3531T	HA □	-20	-1	900	120	400	-2	-50	-0.3	-500	-50	180	-10	-50	TSM	
KTA1532T	SB	KTC3532T	HB	-20	-1.5	900	200	560	-2	-100	-0.18	-750	-15	210	-2	-300		
KTA1535T	SD	KTC3535T	HD	-20	-3	900	200	560	-2	-500	-0.165	-1.5A	-30	160	-2	-500		
KTA1536T	SE	KTC3536T	HE	-20	-5	900	200	560	-2	-500	-0.30	-3A	-60	140	-2	-500		
KTA1541T	SF	KTC3541T	HF	-30	-1.5	900	200	560	-2	-100	-0.375	-750	-15	380	-10	-300		
KTA1542T	SH	KTC3542T	HH	-30	-3	900	200	560	-2	-500	-0.23	-1.5A	-30	380	-10	-500		
KTA1544T	SN	KTC3544T	HN	-30	-2	900	200	560	-2	-100	-0.6	-1.5A	-75	150	-10	-50		
KTA1551T	SK	KTC3551T	HK	-50	-1	900	200	560	-2	-100	-0.43	-500	-10	420	-10	-300		
KTA1552T	SL	KTC3552T	HL	-50	-3	900	200	560	-2	-100	-0.2	-1A	-50	360	-10	-500		
KTC3531T	HA □	KTA1531T	SA □	20	1	900	120	400	2	50	0.3	500	50	180	10	50		
KTC3532T	HB	KTA1532T	SB	20	1.5	900	200	560	2	100	0.2	750	15	210	2	300		
KTC3535T	HD	KTA1535T	SD	20	3	900	200	560	2	500	0.15	1.5A	30	180	2	500		
KTC3536T	HE	KTA1536T	SE	20	5	900	200	560	2	500	0.30	3A	60	160	2	500		
KTC3541T	HF	KTA1541T	SF	30	1.5	900	200	560	2	100	0.225	750	15	450	10	300		
KTC3542T	HH	KTA1542T	SH	30	3	900	200	560	2	500	0.18	1.5A	30	450	10	500		
* KTC3543T	HJ	-	SJ	30	5	900	200	560	2	500	0.165	2.5A	50	290	10	500		
KTC3544T	HN	KTA1544T	SN	30	2	900	200	560	2	100	0.4	1.5A	75	150	10	50		
KTC3551T	HK	KTA1551T	SK	50	1	900	200	560	2	100	0.19	500	10	420	10	300		
KTC3552T	HL	KTA1552T	SL	50	3	900	200	560	2	100	0.12	1A	50	380	10	500		
* KTC3553T	HM	-	SM	50	5	900	200	560	2	500	0.15	2A	40	330	10	500		

Note) ▲ : Package mounted on a ceramic board (600mm²×0.8mm), □ : hFE Grade, \* : Under development

Small Signal Low VCE(sat) Transistors (B)

Type No.	Internal circuit (Top view)	Max. Ratings			hFE		VCE(sat) (V)			fr(MHz)		Package	Outline (Unit: mm)			
		VCEO (V)	IC (A)	PC▲ (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)			Typ.	VCE (V)	IC (mA)
KTX311T	C □	-20	-1	900	120	400	-2	-50	-0.3	-500	-50	180	-10	-50	TSV	
KTX312T	CM	-20	-1.5	900	200	560	-2	-100	0.18	-750	-15	210	-2	-300		
KTX411T	C □	20	1	900	120	400	2	50	0.3	500	50	180	10	50		
KTX412T	CN	20	1.5	900	200	560	2	100	0.2	750	15	210	2	300		
KTX511T	DA	-20	-1.5	900	200	560	-2	-100	-0.18	-750	-15	210	-2	-100	TS6	
* KTX512T	DB	-20	-3	900	200	560	-2	-500	-0.165	-1.5A	-30	160	-2	-500		

Note) ▲ : Package mounted on a ceramic board (600mm<sup>2</sup> × 0.8mm), □ : hFE Grade \* : Under development

General Purpose Power Transistors

Type No.	Complementary	Max. Ratings				hFE		VCE(sat) (V)			fr (MHz)		Package	Outline (Unit: mm)			
		VCEO (V)	IC (A)	PC★ (W)	PC☆ (W)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)			Typ.	VCE (V)	IC (mA)
KTA1242D	-	-20	-5	1	-	100	320	-2	-500	-0.5	-3A	-75	170	-2	-500	DPAK	
KTA1834D	KTC5001D	-20	-10	1	10	120	390	-2	-500	-0.25	-4A	-50	150	-5	-1.5A		
KTA1040D	KTC2020D	-60	-3	1	20	100	300	-5	-500	-1.0	-2A	-200	30	-5	-500		
KTA1042D	KTC2022D	-100	-5	-	20	70	240	-5	-1A	-2.0	-4A	-400	30	-5	-1A		
KTA1045D	KTC2025D	-120	-1	1	8	100	320	-5	-50	-0.4	-500	-50	110	-10	-50		
KTA1225D	KTC2983D	-160	-1.5	1	10	70	240	-5	-100	-1.5	-500	-50	100	-10	-100		
KTC3072D	-	20	5	1	-	120	700	2	500	0.4	3A	60	100	6	50		
KTC5001D	KTA1834D	20	10	1	10	120	390	2	500	0.25	4A	50	150	5	1.5A		
KTC2020D	KTA1040D	60	3	1	20	100	300	5	500	1.0	2A	200	30	5	500		
KTC2022D	KTA1042D	100	5	-	20	70	240	5	1A	2.0	4A	400	30	5	1A		
KTC2025D	KTA1045D	120	1	1	8	100	320	5	50	0.4	500	50	130	10	50		
KTC2983D	KTA1225D	160	1.5	1	10	70	240	5	100	1.5	500	50	100	10	100		

Note) ★ : Ta=25℃, ☆ : Tc=25℃

Switching Power Transistors

Type No.	Complementary	Max. Ratings			hFE		VCE(sat) (V)			fr (MHz)	ton (μs)	tstg (μs)	tr (μs)	Package	Outline (Unit: mm)	
		VCEO (V)	IC (A)	PC☆ (W)	Max.	VCE (V)	IC (mA)	Max.	IC (mA)							IB (mA)
KTA1718D	KTC2815D	-50	-2	10	240	-2	-500	-0.5	-1	-50	100	0.1♦	1.0♦	0.1♦	DPAK	
KTA1385D	KTC5103D	-60	-5	15	400	-1	-2A	-0.3	-2	-200	-	1	2.5	1		
* KTA1204D	* KTC1804D	-60	-8	20	400	-2	-500	-0.4	-4	-200	130	0.05♦	0.45♦	0.02♦		
KTA1862D	-	-400	-2	10	180	-5	-100	-0.5	0.5	-100	18	0.2♦	1.8♦	0.4♦		
KTA1807D	-	-600	-1	20	120	-5	-100	-1.0	-0.3	-60	28	0.5	5.0	0.5		
KTC2815D	KTA1718D	50	2	10	240	2	500	0.5	1	50	100	0.1♦	1.0♦	0.1♦		
KTC5103D	KTA1385D	60	5	15	400	1	2A	0.3	2	200	-	1	2.5	1		
* KTC1804D	* KTA1204D	60	8	20	400	2	500	0.4	4	200	180	0.05♦	0.5♦	0.02♦		
KTC5707D	-	80	8	15	560	2	500	0.24	3.5	175	330	0.03♦	0.42♦	0.025♦		

Note) ♦ : Typ, ☆ : Tc=25℃ \* : Under development

Darlington Power Transistors

Type No.	Complementary	Max. Ratings			hFE		VCE(sat) (V)			fr (MHz)		Package	Outline (Unit: mm)		
		VCEO (V)	IC (mA)	PC* (W)	Min.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.			VCE (V)	IC (mA)
MJD117	MJD112	-100	-2A	20	1000	-3	-2A	-2	-2A	-8	25	-10	-750	DPAK	
MJD112	MJD117	100	2A	20	1000	3	2A	2	2A	8	25	10	750		

Note) \* : Tc=25℃



Small Signal General Purpose Transistors

Type No.	Complementary	Max. Ratings			hFE				VCE(sat) (V)			fr (MHz)				Package	Outline (Unit: mm)		
		VCE0 (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	Typ.	VCE (V)	IC (mA)				
KTA1021	KTC1020	-30	-500	400	100	240	-1	-100	-0.25	-100	-10	-	200	-6	-20	TO-92M			
KTA1272	KTC3204	-30	-800	400	100	320	-1	-100	-0.7	-500	-20	-	120	-5	-10				
KTA1267	KTC3199	-50	-150	400	70	400	-6	-2	-0.3	-100	-10	80	-	-10	-1				
KTC1020	KTA1021	30	500	400	100	240	1	100	0.25	100	10	-	300	6	20				
KTC3204	KTA1272	30	800	400	100	320	1	100	0.5	500	20	-	120	5	10				
KTC3199	KTA1267	50	150	400	70	700	6	2	0.25	100	10	80	-	10	1				
BC309	BC239	-20	-50	625	180	800	-5	-2	-0.2	-10	-0.5	-	200	-5	-10	TO-92			
BC308	BC238	-25	-100	625	120	800	-5	-2	-0.6	-100	-5	-	200	-5	-10				
BC328	BC338	-25	-800	625	100	630	-1	-100	-0.7	-500	-50	-	100	-5	-10				
BC558	BC548	-30	-100	625	110	800	-5	-2	-0.65	-100	-5	-	150	-5	-10				
BC559	BC549	-30	-100	625	110	800	-5	-2	-0.6	-100	-5	-	300	-5	-10				
BC307	BC237	-45	-100	625	120	460	-5	-2	-0.6	-100	-5	-	200	-5	-10				
BC557	BC547	-45	-100	625	110	800	-5	-2	-0.65	-100	-5	-	150	-5	-10				
BC560	BC550	-45	-100	625	110	800	-5	-2	-0.6	-100	-5	-	300	-5	-10				
BC327	BC337	-45	-800	625	100	630	-1	-100	-0.7	-500	-50	-	100	-5	-10				
BC638	BC637	-60	-500	625	40	160	-2	-150	-0.5	-500	-50	-	200	-2	-50				
BC556	BC546	-65	-100	625	110	450	-5	-2	-0.65	-100	-5	-	150	-5	-10				
BC239	BC309	20	50	625	180	800	5	2	0.2	10	0.5	150	250	5	10				
BC238	BC308	20	100	625	120	800	5	2	0.6	100	5	150	250	5	10				
BC338	BC328	25	800	625	100	630	1	100	0.7	500	50	-	100	5	10				
BC548	BC558	30	100	625	110	800	5	2	0.6	100	5	-	150	5	10				
BC549	BC559	30	100	625	110	800	5	2	0.6	100	5	-	300	5	10				
BC237	BC307	45	100	625	120	460	5	2	0.6	100	5	150	250	5	10				
BC547	BC557	45	100	625	110	800	5	2	0.6	100	5	-	150	5	10				
BC550	BC560	45	100	625	110	800	5	2	0.6	100	5	-	300	5	10				
BC337	BC327	45	800	625	100	630	1	100	0.7	500	50	-	100	5	10				
BC637	BC638	60	500	625	40	160	2	150	0.5	500	50	-	200	2	50				
BC546	BC556	65	100	625	110	450	5	2	0.6	100	5	-	150	5	10				
MPS8550	MPS8050	-25	-1.5A	625	85	300	-1	-100	-0.5	-800	-80	100	200	-10	-50				
MPSA55	MPSA05	-60	-500	625	100	-	-1	-10	-0.25	-100	-10	50	-	-1	-100				
MPS751	MPS651	-60	-1A	625	60	200	-2	-50	-0.7	-500	-50	-	150	-10	-50				
MPSA56	MPSA06	-80	-500	625	100	-	-1	-10	-0.25	-100	-10	50	-	-1	-100				
MPS8050	MPS8550	25	1.5A	625	85	300	1	100	0.5	800	80	100	190	10	50				
MPS651	MPS751	60	1A	625	100	320	2	50	0.5	500	50	-	150	10	50				
MPSA06	MPSA56	80	500	625	100	-	1	10	0.25	100	10	100	-	2	10				
MPSA05	MPSA55	60	500	625	100	-	1	10	0.25	100	10	80	-	1	10				
KN3906	KN3904	-40	-200	625	60	-	-1	-0.1	-0.25	-10	-1	-	250	-20	-10				
KN2907	KN2222	-40	-600	625	35	-	-10	-0.1	-0.4	-150	-15	200	-	-20	-50				
KN4403	KN4401	-40	-600	625	30	-	-1	-0.1	-0.4	-150	-15	200	-	-10	-20				
KN2907A	KN2222A	-60	-600	625	75	-	-10	-0.1	-0.4	-150	-15	200	-	-20	-50				
KN2222	KN2907	30	600	625	35	-	10	0.1	0.4	150	15	250	-	20	20				
KN3904	KN3906	40	200	625	40	-	1	0.1	0.2	10	1	-	300	20	10				
KN2222A	KN2907A	40	600	625	35	-	10	0.1	0.3	150	15	300	-	20	20				
KN4401	KN4403	40	600	625	20	-	1	0.1	0.4	150	15	250	-	10	20				

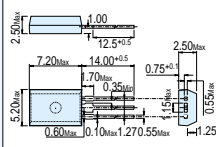
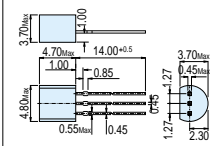
BJT's

■ Small Signal General Purpose Transistors

Type No.	Complementary	Max. Ratings			hFE				VCE(sat) (V)			fT (MHz)		Package	Outline (Unit: mm)	
		VCE0 (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	Typ.			VCE (V)
KTA539	KTC815	-45	-200	625	70	240	-1	-50	-0.5	-150	-15	100	-	-10	-10	
KTB598	KTD545	-25	-1A	625	70	400	-2	-50	-0.3	-500	-50	-	180	-10	-50	
KTA1270	KTC3202	-30	-500	625	70	240	-1	-100	-0.25	-100	-10	-	200	-6	-20	
KTA1271	KTC3203	-30	-800	625	100	320	-1	-100	-0.7	-500	-20	-	120	-5	-10	
KTA1282	KTC3210	-30	-2A	625	100	320	-2	-500	-2	-1.5A	-30	-	120	-2	-500	
KTB1772	KTD1882	-30	-3A	625	100	400	-2	-1A	-0.5	-2A	-200	-	80	-5	-100	
KTA733	KTC945	-50	-150	625	90	600	-6	-2	-0.3	-100	-10	-	300	-10	-10	
KTA733B	KTC945B	-50	-150	625	70	400	-6	-2	-0.3	-100	-10	-	300	-10	-10	
KTA1266	KTC3198	-50	-150	625	70	240	-6	-2	-0.3	-100	-10	80	-	-10	-1	
KTA200	KTC200	-50	-500	625	70	240	-2	-50	-0.25	-100	-10	-	200	-6	-20	
KTA708	KTC1008	-60	-1A	625	60	200	-2	-50	-0.7	-500	-50	-	150	-10	-50	
KTC3266	KTA1296	20	2A	400	120	400	2	100	0.5	2A	100	-	120	2	500	
KTD545	KTB598	25	1A	625	70	400	2	50	0.3	500	50	-	180	10	50	
KTC3202	KTA1270	30	500	625	70	400	1	100	0.25	100	10	-	300	6	20	
KTC3203	KTA1271	30	800	625	100	320	1	100	0.5	500	20	-	120	5	10	
KTC3210	KTA1282	30	2A	625	100	320	2	500	2	1.5A	30	-	120	2	500	
KTD1882	KTB1772	30	3A	625	100	400	2	1A	0.5	2A	200	-	80	5	100	
KTC200	KTA200	45	500	625	70	240	2	50	0.25	100	10	-	300	6	20	
KTC815	KTA539	45	200	625	70	240	1	50	0.4	150	15	100	-	10	10	
KTC945	KTA733	50	150	625	90	600	6	2	0.25	100	10	80	300	10	10	
KTC945B	KTA733B	50	150	625	70	700	6	2	0.25	100	10	-	300	10	10	
KTC3198	KTA1266	50	150	625	70	700	6	2	0.25	100	10	80	-	10	1	
KTC1008	KTA708	60	1A	625	100	320	2	50	0.5	500	50	-	150	10	50	
KTC9012	KTC9013	-30	-500	625	64	246	-1	-50	-0.25	-100	-10	150	-	-6	-20	
KTC8550	KTC8050	-30	-800	625	100	300	-1	-50	-0.5	-500	-50	-	120	-5	-10	
KTC9015	KTC9014	-50	-150	625	60	600	-5	-1	-0.3	-100	-10	60	-	-10	-1	
KTC9013	KTC9012	30	500	625	64	246	1	50	0.25	100	10	140	-	6	20	
KTC8050	KTC8550	30	800	625	100	300	1	50	0.5	500	20	-	120	5	10	
KTC9014	KTC9015	50	150	625	60	1000	5	1	0.25	100	10	60	-	10	1	
KTA1273	KTC3205	-30	-2A	1W	100	320	-2	-500	-2	-1.5A	-30	-	120	-2	-500	
KTB764	KTD863	-50	-1A	1W	60	320	-2	-50	-0.7	-500	-50	-	150	-10	-50	
KTA1274	KTC3227	-80	-400	1W	70	240	-2	-50	-0.4	-200	-20	-	100	-10	-10	
KTB1241	KTD1863	-80	-1A	1W	70	400	-3	-100	-0.4	-500	-50	-	100	-5	-50	
KTC3205	KTA1273	30	2A	1W	100	320	2	500	2	1.5A	30	-	120	2	500	
KTD863	KTB764	60	1A	1W	60	320	2	50	0.5	500	50	-	150	10	50	
KTC3227	KTA1274	80	400	1W	70	240	2	50	0.4	200	20	-	100	10	10	
KTC1006	-	80	800	1W	100	-	2	150	0.7	500	20	-	150	10	100	
KTD1863	KTB1241	80	1A	1W	70	400	3	500	0.4	500	20	-	100	10	50	
KTC1027	KTA1023	120	800	1W	80	240	5	100	1	500	50	-	120	5	100	

TO-92

TO-92L



■ Small Signal Low Noise Transistors

Type No.	Complementary	Max. Ratings			hFE			VCE(sat) (V)			NF (dB)				Package	Outline (Unit: mm)	
		VCEO (V)	IC (mA)	PC (mW)	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Max.	VCE (V)	IC (mA)	Rg (kΩ)			f (kHz)
KTC3199L	KTA1267L	50	150	400	700	6	2	0.25	100	10	6.0	6	0.1	10	0.1	TO-92M	
KTA1268	KTC3200	-120	-100	625	700	-6	-2	-0.3	-10	-1	6.0	-6	-0.1	10	0.01		
KTA2400	KTC3400	-120	-100	625	400	-6	-2	-0.3	-10	-1	10	6	-0.1	10	1	TO-92	
KTC3198L	KTA1266L	50	150	625	700	6	2	0.25	100	10	6	6	0.1	10	0.1		
KTC3400	KTA2400	120	100	625	400	6	2	0.3	10	1	10	6	0.1	10	1		
KTC3200	KTA1268	120	100	625	700	6	2	0.3	10	1	6	6	0.1	10	0.01		

■ Small Signal Audio Muting Transistors

Type No.	Complementary	Max. Ratings			hFE			VCE(sat) (V)			fT (MHz)		RON (Ω)			Package	Outline (Unit: mm)			
		VCEO (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Typ.	VCE (V)	IC (mA)	Typ.			f (kHz)	IB (mA)	Vin (V)
KTC2876	-	20	300	400	200	1200	2	4	0.3	30	3	30	6	4	-	-	-	-	TO-92M	
KTD1303	-	20	300	400	200	800	2	4	0.25	100	10	60	10	1	0.6	1	1	0.3		
KTC2874	-	20	300	625	200	1200	2	4	0.3	30	3	30	6	4	-	-	-	-	TO-92	
KTD1302	-	20	300	625	200	800	2	4	0.25	100	10	60	10	1	0.6	1	1	0.3		

■ Small Signal High hFE Transistors

Type No.	Complementary	Max. Ratings			hFE			VCE(sat) (V)			fT (MHz)				Package	Outline (Unit: mm)		
		VCEO (V)	IC (mA)	PC (mW)	Min.	Typ.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	Typ.			VCE (V)	IC (mA)
KTC3113	-	50	150	400	600	-	3600	6	2	0.25	100	10	100	250	10	10	TO-92M	
KTC3112	-	50	150	625	600	-	3600	6	2	0.25	100	10	100	250	10	10		
KTD1028	-	50	1A	1W	800	1500	3200	5	300	0.3	500	5	150	250	10	500	TO-92L	

■ Small Signal Darlington Transistors

Type No.	Complementary	Max. Ratings			hFE			VCE(sat) (V)			fT (MHz)			Package	Outline (Unit: mm)
		VCEO (V)	IC (mA)	PC (mW)	Min.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	VCE (V)	IC (mA)		
MPSA13	MPSA63	30△	500	625	5,000	5	10	1.5	100	0.1	125	5	10	TO-92	
MPSA14	MPSA64	30△	500	625	10,000	5	10	1.5	100	0.1	125	5	10		
MPSA27	MPSA77	60△	500	625	10,000	5	100	1.5	100	0.1	-	-	-		
MPSA62	-	-20△	-500	625	20,000	-5	-10	-1	-10	-0.01	125	-5	-10		
MPSA63	MPSA13	-30△	-500	625	5,000	-5	-10	-1.5	-100	-0.1	125	-5	-10		
MPSA64	MPSA14	-30△	-500	625	10,000	-5	-10	-1.5	-100	-0.1	125	-5	-10		
MPSA77	MPSA27	-60△	-500	625	10,000	-5	-100	-1.5	-100	-0.1	-	-	-		
BC516	-	-30	-500	625	30,000	-2	-100	-1	-100	-1	220◇	-2	-100		
BC517	-	30	500	625	30,000	2	100	1	100	1	220◇	5	10		

Note) △: VCES, ◇: Typ.

■ Small Signal Darlington Transistors

Type No.	Complementary	Max. Ratings			hFE			VCE(sat) (V)			fr (MHz)			Package	Outline (Unit: mm)
		VCE0 (V)	IC (A)	Pc (mW)	Min.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Typ.	VCE (V)	IC (mA)		
* KTB2234	KTD2854	-100	-2	1	2000	-2	-100	-1.5	-100	-1	100 ◊	-2	-500	TO-92L	
KTD2854	KTB2234	100	2	1	2000	2	100	1.5	100	1	50 ◊	2	500		

Note) △: VCES, ◊: Typ.      \*: Under development

■ Small Signal High Voltage Transistors

Type No.	Complementary	Max. Ratings			hFE		VCE(sat) (V)			fr (MHz)			Package	Outline (Unit: mm)			
		VCE0 (V)	IC (mA)	Pc (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.			Typ.	Max.	VCE (V)
BF423	BF422	-250	-50	625	50	-	-20	-25	-0.6	-30	-5	60	-	-	-10	-10	
BF421	BF420	-300	-50	625	50	-	-20	-25	-0.6	-30	-5	60	-	-	-10	-10	
BF422	BF423	250	50	625	50	-	20	25	0.6	30	5	60	-	-	10	10	
BF420	BF421	300	50	625	50	-	20	25	0.6	30	5	60	-	-	10	10	
MPSA93	MPSA43	-200	-500	625	40	-	-10	-10	-0.5	-20	-2	50	-	-	-20	-10	
MPSA92	MPSA42	-300	-500	625	40	-	-10	-10	-0.5	-20	-2	50	-	-	-20	-10	
MPSA94	MPSA44	-400	-300	625	50	300	-10	-10	-0.5	-10	-1	-	-	-	-	-	
MPSA94A	-	-480	-300	625	50	300	-10	-10	-0.5	-20	-2	-	-	-	-	-	
MPSA43	MPSA93	200	500	625	40	-	10	10	0.5	20	2	50	-	-	20	10	
MPSA42	MPSA92	300	500	625	40	-	10	10	0.5	20	2	50	-	-	20	10	
MPSA45	-	350	300	625	50	200	10	10	0.5	10	1	-	-	-	-	-	
MPSA44	MPSA94	400	300	625	50	200	10	10	0.5	10	1	-	-	-	-	-	
2N5400	-	-120	-600	625	40	180	-5	-10	-0.2	-10	-1	100	-	400	-10	-10	
2N5401	-	-150	-600	625	60	240	-5	-10	-0.2	-10	-1	100	-	300	-10	-10	
2N5401C	-	-150	-600	625	60	240	-5	-10	-0.2	-10	-1	100	-	300	-10	-10	
2N5550	-	140	600	625	60	250	5	10	0.15	10	1	100	-	300	10	10	
2N5551	-	160	600	625	80	250	5	10	0.15	10	1	100	-	300	10	10	
2N5551C	-	160	600	625	80	250	5	10	0.15	10	1	100	-	300	10	10	
KTA1279	-	-300	-500	625	40	-	-10	-10	-0.5	-10	-1	50	-	-	20	-10	
KTC3245	-	350	300	625	50	200	10	10	0.5	10	1	-	-	-	-	-	
KTA1023	KTC1027	-120	-800	1W	80	240	-5	-100	-1	-500	-50	-	120	-	-5	-100	
KTA1024	KTC3206	-150	-50	1W	70	240	-5	-10	-0.8	-10	-1	-	120	-	-30	-10	
KTA1275	KTC3228	-160	-1A	1W	60	320	-5	-200	-1.5	-500	-50	15	50	-	-5	-200	
KTA1070	KTC3467	-200	-100	1W	70	240	-5	-10	-0.6	-20	-2	-	150	-	-30	-10	
KTA1277	-	-400	-500	1W	60	200	-5	-100	-1	-100	-10	-	-	-	-	-	
KTC3206	KTA1024	150	50	1W	70	240	5	10	0.5	10	1	-	120	-	30	10	
KTC3228	KTA1275	160	1A	1W	60	320	5	200	1.5	500	50	20	100	-	5	200	
KTC1026	-	180	100	1W	120	400	10	10	0.5	50	5	50	-	-	10	10	
KTC3467	KTA1070	200	100	1W	70	240	5	10	0.6	20	2	-	150	-	30	10	
KTC3207	-	300	100	1W	30	150	10	20	1	10	1	50	-	-	10	20	

■ Small Signal Strobe Flash Transistors

Type No.	Complementary	Max. Ratings			hFE				VCE(sat) (V)			fr (MHz)		Package	Outline (Unit: mm)	
		VCE0 (V)	IC (A)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	IB (mA)	Max.	IC (A)	IB (mA)	Typ.			VCE (V)
KTA1243	-	-20	-5	625	100	320	-2	-500	-0.5	-3	-75	170	-2	-500	TO-92	
KTD1146	-	20	5	625	120	700	2	500	0.4	3	60	100	6	50		
KTA1241	-	-20	-5	1W	100	320	-2	-500	-0.5	-3	-75	170	-2	-500	TO-92L	
KTC3226	-	10	2	1W	140	600	1	500	0.5	2	50	150	1	500		
KTD1145	-	20	5	1W	140	600	2	500	0.5	3	60	120	10	50		

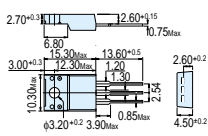
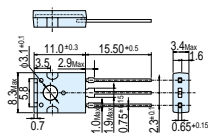
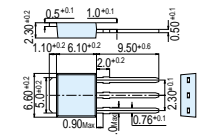
■ Small Signal RF/ VHF/ UHF Transistors

Type No.	Max. Ratings			hFE				VCE(sat) (V)			fr (MHz)			Cob (pF)		NF (dB)		Gpe (dB)	Package	Outline (Unit: mm)		
	VCE0 (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	IB (mA)	Max.	IC (mA)	IB (mA)	Min.	Typ.	Max.	VCE (V)	IC (mA)	Max.				f (MHz)	Min.
KTC3195	30	20	400	40	200	6	1	-	-	-	300	550	-	6	1	-	-	5	100	18◇	TO-92M	
KTC3193	30	50	400	40	240	12	2	0.4	10	1	100	-	-	10	1	3.2	10	-	-	27		
KTC3191	30	100	400	40	240	12	2	0.4	10	1	80	120	-	10	2	-	-	3.5	1	-		
KTC2347	15	50	625	20	-	3	8	-	-	-	650	1100	-	10	8	1.5	10	-	-	-	TO-92	
KTC3197	25	50	625	20	200	12.5	12.5	0.2	15	1.5	300	-	-	12.5	12.5	2	10	-	-	28		
KTC3194	30	20	625	40	200	6	1	-	-	-	300	550	-	6	1	-	-	5	100	15		
KTC3192	30	50	625	40	240	12	2	0.4	10	1	100	-	400	10	1	3.2	10	-	-	27		
KTC3190	30	100	625	40	240	12	2	0.4	10	1	80	120	-	10	2	-	-	3.5	1	-		
KTC9016	30	20	625	40	198	5	1	-	-	-	260	-	-	6	1	-	-	4	100k	15		
KTC9018	30	20	625	40	198	5	1	-	-	-	500	800	-	10	8	-	-	4	100k	15		
KTC9011	30	50	625	40	198	5	1	0.4	10	1	100	-	400	10	1	2.0◇	10	-	-	-		

■ Small Signal Switching Transistors

Type No.	Complementary	Max. Ratings			hFE				VCE(sat) (V)			fr (MHz)	ton (ns)	toff (ns)	td (ns)	tr (ns)	tstg (ns)	tf (ns)	Package	Outline (Unit: mm)	
		VCE0 (V)	IC (mA)	PC (mW)	Max.	VCE (V)	IC (mA)	IB (mA)	Max.	IC (mA)	IB (mA)										Min.
2N3906	2N3904	-40	-200	625	300	-1	-10	-0.25	-10	-1	250	-	-	35	35	225	75	TO-92			
2N3906C	2N3904C	-40	-200	625	300	-1	-10	-0.25	-10	-1	250	-	-	35	35	225	75				
2N3904	2N3906	40	200	625	300	1	10	0.2	10	1	300	-	-	35	35	200	50				
2N3904C	2N3906C	40	200	625	300	1	10	0.2	10	1	300	-	-	35	35	200	50				
KTH2369	-	15	500	625	120	1	10	0.25	10	1	500	12	-	-	-	-	-				
KTH2369A	-	15	500	625	120	1	10	0.25	10	1	500	12	15	-	-	13	-				
KTN2907	KTN2222	-40	-600	625	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30				
KTN2907A	KTN2222A	-60	-600	625	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30				
KTN2369	-	15	500	625	120	1	10	0.25	10	1	500	12	-	-	-	-	-				
KTN2369A	-	15	500	625	120	1	10	0.25	10	1	500	12	15	-	-	13	-				
KTN2222	KTN2907	30	600	625	300	10	150	0.4	150	15	250	-	-	10	25	225	60				
KTN2222A	KTN2907A	40	600	625	300	10	150	0.3	150	15	300	-	-	10	25	225	60				
KTA1281	KTC3209	-50	-2A	1W	240	-2	-500	-0.5	-1A	-50	100◇	0.1◇	-	-	-	1.0◇	0.1◇			TO-92L	
KTB985	KTD1347	-50	-3A	1W	400	-2	-100	-0.7	-2A	-100	150◇	70◇	-	-	-	450◇	35◇				
KTC3209	KTA1281	50	2A	1W	240	2	500	0.5	1A	50	100◇	0.1◇	-	-	-	1.0◇	0.1◇				
KTD1347	KTB985	50	3A	1W	400	2	100	0.5	2A	100	150◇	70◇	-	-	-	650◇	35◇				

Type No.	Complementary	Max. Ratings				hFE				VCE(sat) (V)			fr (MHz)		Package	Outline (Unit: mm)
		VCEO (V)	IC (A)	PC★ (W)	PC☆ (W)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	Typ.		
KTA1242L	-	-20	-5	1	-	100	320	-2	-500	-0.5	-3A	-75	-	170	-2	-500
KTA1834L	KTC5001L	-20	10	1	10	120	390	-2	-500	-0.25	-4A	-50	-	150	-5	-1.5A
KTA1040L	KTC2020L	-60	-3	1	20	100	300	-5	-500	-1	-2A	-200	-	30	-5	-500
KTA1042L	KTC2022L	-100	-5	-	20	70	240	5	1A	-2	-4A	-400	-	30	-5	-1A
KTA1045L	KTC2025L	-120	-1	1	8	100	320	-5	-50	-0.4	-500	-50	-	130	-10	-50
KTA1225L	KTC2983L	-160	-1.5	1	10	70	240	-5	-100	-1.5	-500	-50	-	100	-10	-100
KTC3072L	-	20	5	1	-	120	700	2	500	0.4	3A	60	20	-	6	50
KTC5001L	KTA1834L	20	10	1	10	120	390	2	500	0.25	4A	50	-	150	5	1.5A
KTC2020L	KTA1040L	60	3	1	20	100	300	5	500	1	2A	200	-	30	5	500
KTC2022L	KTA1042L	100	5	-	20	70	240	5	1A	2	4A	400	-	30	5	1A
KTC2025L	KTA1045L	120	1	1	8	100	320	5	50	0.4	500	50	-	130	10	50
KTC2983L	KTA1225L	160	1.5	1	10	70	240	5	100	1.5	500	50	-	100	10	100
KTA1709	-	-20	-5	1.5	-	100	320	-2	-500	-0.5	-3A	-75	-	170	-2	-500
KTA1705	KTC2804	-30	-3	1.5	10	70	240	-2	-500	-0.8	-2A	-200	-	100	-2	-500
KTB772	KTD882	-30	-3	1.5	10	100	400◇	-2	-1A	-0.5	-2A	-200	-	80	-5	-100
KTB1151	KTD1691	-60	-5	1.5	20	160	400	-1	-2A	-0.3	-2A	-200	-	-	-	-
KTB631K	KTD600K	-120	-1	1.5	8	100	320	-5	-50	-0.4	-500	-50	-	110	-10	-50
KTA1704	KTC2803	-120	-1.2	1.5	20	100	320	-5	-50	-0.4	-500	-50	-	110	-10	-50
KTA1700	KTC2800	-160	-1.5	1.5	10	70	240	-5	-100	-1.5	-500	-50	-	100	-10	-100
KTA1360	KTC3423	-150	-0.5	1.5	-	70	240	-5	-10	-0.8	-10	-1	-	120	-30	-10
KTA1381	KTC3503	-300	-0.1	1.5	7	60	200	-10	-10	-0.6	-20	-2	-	150	-30	-10
KTA1703	-	-400	-0.5	1.5	10	60	200	-5	-100	-1	-100	-10	-	-	-	-
KTC2804	KTA1705	30	3	1.5	10	70	240	2	500	0.8	2A	200	-	100	2	500
KTD882	KTB772	30	3	1.5	10	100	400◇	2	1A	0.5	2A	200	-	90	5	100
KTD1691	KTB1151	60	5	1.5	20	160	400	1	2A	0.3	2A	200	-	-	-	-
KTD600K	KTB631K	120	1	1.5	8	100	320	5	50	0.4	500	50	-	130	10	50
KTC2803	KTA1704	120	1.2	1.5	20	100	320	5	50	0.4	500	50	-	110	10	50
KTC2800	KTA1700	160	1.5	1.5	10	70	240	5	100	1.5	500	50	-	100	10	100
KTC3502	-	200	0.1	1.5	5	70	240	5	10	0.6	20	2	-	150	30	10
KTC2801	-	300	0.1	1.5	-	30	200	10	20	1	10	1	75	95	20	20
KTC3423	KTA1360	150	0.5	1.5	5	70	240	5	10	0.5	10	1	-	120	30	10
KTC3503	KTA1381	300	0.1	1.5	7	60	200	10	10	0.6	20	2	-	150	30	10
KTC4217	-	300	0.2	1.5	10	60	200	10	10	0.6	20	2	-	70	10	10
BD135	BD136	45	1.5	1.25	10	40	250	2	150	0.5	500	50	-	190	5	50
BD136	BD135	-45	-1.5	1.25	10	40	250	-2	-150	-0.5	-500	-50	-	160	-5	-50
BD139	BD140	80	1.5	1.25	10	40	250	2	150	0.5	500	50	-	190	5	50
BD140	BD139	-80	-1.5	1.25	10	40	250	-2	-150	-0.5	-500	-50	-	160	-5	-50
KTA1658	KTC4369	-30	-3	-	15	70	240	-2	-500	-0.8	-2A	-200	-	100	-2	-500
KTA1046	KTC2026	-60	-3	2	25	100	300	-5	-500	-1	-2A	-200	-	30	-5	-500
KTB1366	KTD2058	-60	-3	2	25	60	200	-5	-500	-1	-2A	-200	-	9	-5	-500
KTB1368	KTD2060	-80	-4	-	25	40	240	-5	-500	-1.7	-3A	-300	-	9	-5	-500
KTB1370	-	-80	-7	-	30	70	240	-1	-1A	-0.5	-4A	-400	-	10	-4	-1A
KTA1049	KTC2028	-100	-5	-	30	70	240	-5	-1A	-2	-4A	-400	-	30	-5	-1A
KTB1367	KTD2059	-100	-5	-	30	40	240	-5	-1A	-2	-4A	-400	-	5	-5	-1A



Note) ◇ : Typ. ★ : Ta=25 °C, ☆ : Tc=25 °C, ▲ : Vcbo

Type No.	Complementary	Max. Ratings				hFE				VCE(sat) (V)			fr (MHz)			Package	Outline (Unit: mm)
		VCEO (V)	IC (A)	PC★ (W)	PC☆ (W)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	Typ.	VCE (V)		
KTA1659	KTC4370	-160	-1.5	-	20	70	240	-5	-100	-1.5	-500	-50	-	100	-10	-100	
KTA1659A	KTC4370A	-180	-1.5	-	20	70	240	-5	-100	-1.5	-500	-50	-	100	-10	-100	
KTB1369	KTD2061	-180	-2	-	20	70	240	-10	-400	-1	-500	-50	-	100	-10	-400	
KTA1725	KTC4511	-80	-6	-	30	55	160	-4	-2A	-0.5	-2A	-200	-	20	-12	-500	
KTA1837	KTC4793	-230	-1	2	20	100	320	-5	-100	-1.5	-500	-50	-	70	-10	-100	
KTC4369	KTA1658	30	3	-	15	70	240	2	500	0.8	2A	200	-	100	2	500	
KTC2026	KTA1046	60	3	2	25	100	300	5	500	1	2A	200	-	30	5	500	
KTD2058	KTB1366	60	3	2	25	60	200	5	500	1	2A	200	-	3	5	500	
KTD2060	KTB1368	80	4	-	25	40	240	5	500	1.5	3A	300	-	8	5	500	
KTC4511	KTA1725	80	6	-	30	55	160	4	2A	0.5	2A	200	-	20	12	500	
KTC2028	KTA1049	100	5	-	30	70	240	5	1A	2	4A	400	-	30	5	1A	
KTD2059	KTB1367	100	5	-	30	40	240	5	1A	2	4A	400	-	12	5	1A	
KTC4370	KTA1659	160	1.5	-	20	70	240	5	100	1.5	500	50	-	100	10	100	
KTC4370A	KTA1659A	180	1.5	-	20	70	240	5	100	1.5	500	50	-	100	10	100	
KTD2061	KTB1369	180	2	-	20	70	240	10	400	1	500	50	-	100	10	400	
KTC1003	-	200▲	4	-	30	30	150	5	1A	1	4A	400	-	8	5	500	
KTC4793	KTA1837	230	1	2	20	100	320	5	100	1.5	500	50	-	70	10	100	
KTC3229	-	300	0.1	2	-	30	200	10	20	1	10	1	75	95	20	20	
TIP32CF	TIP31CF	-100	-3	2	25	10	50	-4	-3A	-1.2	-3A	-375	3	-	-10	-500	
TIP42CF	TIP41CF	-100	-6	2	25	15	75	-4	-3A	-1.5	-6A	-600	3	-	-10	-500	
TIP31CF	TIP32CF	100	3	2	25	10	50	4	3A	1.2	3A	375	3	-	10	500	
TIP41CF	TIP42CF	100	6	2	25	15	75	4	3A	1.5	6A	600	3	-	10	500	
KTB778	KTD998	-120	-10	-	80	55	160	-5	-1A	-2.5	-5A	-500	-	10	-5	-1A	
KTD998	KTB778	120	10	-	80	55	160	5	1A	2.5	5A	500	-	12	5	1A	
TIP34C	TIP33C	-100	-10	-	80	55	160	-4	-2A	-1	-4A	-400	-	20	-12	-500	
TIP36C	TIP35C	-100	-25	-	125	55	160	-5	-1.5A	-1.8	-15A	-1.5A	3	-	-5	-1A	
TIP33C	TIP34C	100	10	-	80	55	160	4	2A	1	4A	400	-	20	12	500	
TIP35C	TIP36C	100	25	-	125	55	160	5	1.5A	1.8	15A	1.5A	3	-	5	1A	
KTA1940	KTC5197	-120	-10	-	80	55	160	-5	-1A	-2	-6A	-600	-	30	-5	-1A	
KTB688	KTD718	-120	-10	-	80	55	160	-5	-1A	-2.5	-5A	-500	-	10	-5	-1A	
KTA1695	KTC4468	-140	-10	-	100	55	-	-4	-3A	-0.5	-5A	-500	-	20	-12	-500	
KTB817	KTD1047	-140	-12	-	100	60	200	-5	-1A	-2.5	-5A	-500	-	15	-5	-1A	
KTA1962A	KTC5242A	-230	-15	-	130	55	160	-5	-1A	-3	-8A	-800	-	30	-5	-1A	
KTC5197	KTA1940	120	10	-	80	55	160	5	1A	2	6A	600	-	30	5	1A	
KTD718	KTB688	120	10	-	80	55	160	5	1A	2.5	5A	500	-	12	5	1A	
KTC4468	KTA1695	140	10	-	100	55	-	4	3A	0.5	5A	500	-	20	12	500	
KTD1047	KTB817	140	12	-	100	60	200	5	1A	2.5	5A	500	-	15	5	1A	
KTC5242A	KTA1962A	230	15	-	130	55	160	5	1A	3	8A	800	-	30	5	1A	

Note) ◇ : Typ. ★ : Ta=25℃, ☆ : Tc=25℃, ▲ : Vcbo

Switching Power Transistors

Type No.	Complementary	Max. Ratings			hFE				VCE(sat) (V)			fr	ton	tstg	tf	Package	Outline (Unit: mm)		
		VCE0 (V)	IC (A)	PC (W)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (A)	IB (mA)	(MHz)	(μs)	(μs)	(μs)				
																		Typ.	Typ.
KTA1718L	KTC2815L	-50	-2	10	70	240	-2	-500	-0.5	-1	-50	100	0.1	-	1.0	-	0.1	-	
KTA1385L	KTC5103L	-60	-5	15	160	400	-1	-2A	-0.3	-2	-200	-	0.2	1	1.1	2.5	0.2	1	
* KTA1204L	* KTC1804L	-60	-8	20	100	400	-2	-500	-0.4	-4	-200	130	0.05	-	0.45	-	0.02	-	
KTA1862L	-	-400	-2	10	56	180	-5	-100	-0.5	0.5	-100	18	0.2	-	1.8	-	0.4	-	
KTA1807L	-	-600	-1	20	40	120	-5	-100	-1.0	-0.3	-60	28	0.1	0.5	3.5	5.0	0.08	0.5	
KTC2815L	KTA1718L	50	2	10	70	240	2	500	0.5	1	50	100	0.1	-	1.0	-	0.1	-	
KTC5103L	KTA1385L	60	5	15	160	400	1	2A	0.3	2	200	-	0.2	1	1.1	2.5	0.2	1	
* KTC1804L	* KTA1204L	60	8	20	100	400	2	500	0.4	4	200	180	0.05	-	0.45	-	0.02	-	
KTC3003	-	400	1.5	@1.1	9	21	2	500	0.5	0.5	100	4◆	-	1.1	-	4	-	0.7	
MJE13003	-	400	1.5	20	8	40	2	500	0.5	0.5	100	4◆	-	1.1	-	4	-	0.7	
KTA1715	KTC2814	-50	-2	10	70	240	-2	-500	-0.5	-1	-50	100	-0.1	-	1	-	0.1	-	
KTC2814	KTA1715	50	2	10	70	240	2	500	0.5	1	50	100	0.1	-	1	-	0.1	-	
MJE13005F	-	400	4	30	18	39	5	1A	0.5	1	200	4◆	-	0.8	-	4	-	0.9	
MJE13007F	-	400	8	40	15	50	5	2A	1	2	400	4◆	-	1.6	-	3	-	0.7	
MJE13009F	-	400	12	50	8	28	5	5A	1	5	1A	4	-	1.1	-	3	-	0.7	
KTC4419	-	400	5	30	10	40	4	1.5A	0.5	1.5	300	20	-	1	-	2.5	-	0.5	
KTC4520F	-	500	3	30	15	50	5	300	1	1.5	300	18	-	0.5	-	3	-	0.3	
KTC4521F	-	500	5	40	15	50	5	600	1	3	600	18	-	0.5	-	3	-	0.3	
KTC5027F	-	800	3	40	15	40	5	200	2	1.5	300	15	-	0.5	-	3	-	0.3	

Note) ◆ : Min., ☆ : Tc=25°C, \* : Under development, @ : Ta=25°C

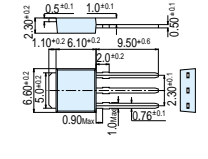
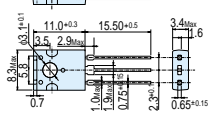
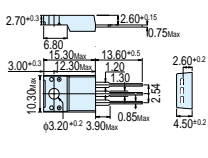
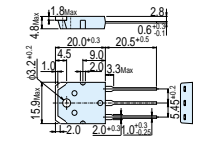
High hFE Power Transistors

Type No.	Complementary	Max. Ratings			hFE				VCE(sat) (V)			fr	ton	tstg	tf	Package	Outline (Unit: mm)
		VCE0 (V)	IC (A)	PC (W)	Min.	Max.	VCE (V)	IC (A)	Max.	IC (A)	IB (mA)	(MHz)	(μs)	(μs)	(μs)		
KTC3114	-	50	0.15	1.5	600	3600	6	2mA	0.25	0.1	10	250	-	-	-	TO-126	
KTD2092	-	80	3	25☆	500	1500	1	0.5	0.35	1	10	140	0.5	5	0.7	TO-220IS	
KTD2066	-	80	5	30☆	500	1500	1	1	0.35	3	30	130	0.6	3	0.8		
KTD1937	-	80	10	40☆	500	1500	1	1	0.35	5	50	70	0.6	6	1	TO-220IS	

Note) ☆ : Tc=25°C



■ Darlington Power Transistors

Type No.	Complementary	Max. Ratings			hFE			VCE(sat) (V)			Package	Outline (Unit: mm)		
		V <sub>CEO</sub> (V)	I <sub>C</sub> (A)	P <sub>C</sub> ☆ (W)	Min.	Typ.	Max.	VCE (V)	I <sub>C</sub> (A)	Max.			I <sub>C</sub> (A)	I <sub>B</sub> (mA)
MJD117L	MJD112L	-100	-2	20	1000	12000	-	-3	-2	-2	-2	-8	IPAK 	
MJD112L	MJD117L	100	2	20	1000	12000	-	3	2	2	2	8		
KTD1411	-	60	4	15	3000	-	-	2	1	1.5	3	30	TO-126 	
TIP117F	TIP112F	-100	-2	20	1000	-	-	-4	-1	-2.5	-2	-8	TO-220IS 	
TIP112F	TIP117F	100	2	20	1000	-	-	4	1	2.5	2	8		
KTB1424	KTD2424	-60	-3	25	3000	-	-	-2	-1	-1.5	-3	-30		
KTB1423	-	-120	-5	30	1000	-	-	-3	-0.5	-2	-3	-12		
KTD2424	KTB1424	60	3	25	3000	-	-	2	1	1.5	3	30		
KTD1414	-	80	4	25	2000	-	-	2	1	1.5	3	6		
KTD1413	-	100	5	25	2000	6000	15000	2	3	1.5	3	3		
KTD1415	-	100	7	30	2000	-	15000	3	3	1.5	3	6		
KTB2510	KTD1510	-150	-10	100	5000	-	-	-4	-7	-2.5	-7	-7		TO-3P(N) 
KTD1510	KTB2510	150	10	100	5000	-	-	4	7	2.5	7	7		

Note) ☆: T<sub>c</sub>=25℃

■ Junction Field Effect Transistors (SMD Type)

Type No.	Mark	Max. Ratings			IdSS(μA)			NF (dB)					Package	Outline (Unit: mm)
		V <sub>GDO</sub> (V)	I <sub>G</sub> (mA)	P <sub>d</sub> (mW)	V <sub>DS</sub> (V)	V <sub>GS</sub> (V)	Max.	V <sub>DD</sub> (V)	I <sub>D</sub> (mA)	R <sub>G</sub> (kΩ)	f (kHz)			
KTK597V	F □	-20	10	100	150~320	5	0	-	-	-	-	-	VSM	
KTK597E	F □	-20	10	100	150~320	5	0	-	-	-	-	-	ESM	
KTK597	F □	-20	10	100	150~320	5	0	-	-	-	-	-	USM	
KTK596S	F □	-20	10	150	150~320	5	0	-	-	-	-	-	SOT-23	
KTK211	K □	-18	10	150	1~15 (mA)	10	0	3.5	10	-	-	100MHz		

Note) □ : IdSS Grade

■ Junction Field Effect Transistors (THD Type)

Type No.	Max. Ratings			IdSS(mA)			NF (dB)					Package	Outline (Unit: mm)
	V <sub>GDO</sub> (V)	I <sub>G</sub> (mA)	P <sub>d</sub> (mW)	V <sub>DS</sub> (V)	V <sub>GS</sub> (V)	Max.	V <sub>DD</sub> (V)	I <sub>D</sub> (mA)	R <sub>G</sub> (kΩ)	f (kHz)			
KTK161	-18	10	400	1~15	10	0	3.5	10	-	-	100MHz	TO-92M	
KTK596	-20	10	400	150~320 (μA)	5	0	-	-	-	-	-		

■ Small Signal General Purpose BRTs

Type No.				Max. Ratings			hFE				VCE(sat) (V)			R1 (kΩ)	R2 (kΩ)	Package	Outline (Unit: mm)		
NPN	Mark	PNP	Mark	VCE0 (V)	IC (mA)	PC (mW)	Min.	Typ.	VCE (V)	IC (mA)	VCE(sat) (V)								
											Max.	IC (mA)	IB (mA)						
KRC401V	NA	KRA301V	PA	50	100	100	30	55	5	10	0.3	10	0.5	4.7	4.7	VSM			
KRC402V	NB	KRA302V	PB	50	100	100	50	80	5	10	0.3	10	0.5	10	10				
KRC403V	NC	KRA303V	PC	50	100	100	70	120	5	10	0.3	10	0.5	22	22				
KRC404V	ND	KRA304V	PD	50	100	100	80	200	5	10	0.3	10	0.5	47	47				
KRC405V	NE	KRA305V	PE	50	100	100	80	200	5	10	0.3	10	0.5	2.2	47				
KRC406V	NF	KRA306V	PF	50	100	100	80	200	5	10	0.3	10	0.5	4.7	47				
KRC407V	NH	KRA307V	PH	50	100	100	80	150	5	10	0.3	10	0.5	10	47				
KRC408V	NI	KRA308V	PI	50	100	100	80	150	5	10	0.3	10	0.5	22	47				
KRC409V	NJ	KRA309V	PJ	50	100	100	70	140	5	10	0.3	10	0.5	47	22				
KRC410V	NK	KRA310V	PK	50	100	100	120	-	5	1	0.3	10	0.5	4.7	-				
KRC411V	NM	KRA311V	PM	50	100	100	120	-	5	1	0.3	10	0.5	10	-				
KRC412V	NN	KRA312V	PN	50	100	100	120	-	5	1	0.3	10	0.5	100	-				
KRC413V	NO	KRA313V	PO	50	100	100	120	-	5	1	0.3	10	0.5	22	-				
KRC414V	NP	KRA314V	PP	50	100	100	120	-	5	1	0.3	10	0.5	47	-				
KRC416V	N2	KRA316V	P2	50	100	100	33	-	5	5	0.3	10	0.5	1	10				
KRC417V	N4	KRA317V	P4	50	100	100	20	-	5	20	0.3	10	0.5	2.2	2.2				
KRC418V	N5	KRA318V	P5	50	100	100	33	-	5	10	0.3	10	0.5	2.2	10				
KRC419V	N6	KRA319V	P6	50	100	100	30	-	5	10	0.3	10	0.5	4.7	10				
KRC420V	N7	KRA320V	P7	50	100	100	24	-	5	10	0.3	10	0.5	10	4.7				
KRC421V	N8	KRA321V	P8	50	100	100	33	-	5	5	0.3	10	0.5	47	10				
KRC422V	N9	KRA322V	P9	50	100	100	62	-	5	5	0.3	5	0.25	100	100				
KRC401E	NA	KRA301E	PA	50	100	100	30	55	5	10	0.3	10	0.5	4.7	4.7			ESM	
KRC402E	NB	KRA302E	PB	50	100	100	50	80	5	10	0.3	10	0.5	10	10				
KRC403E	NC	KRA303E	PC	50	100	100	70	120	5	10	0.3	10	0.5	22	22				
KRC404E	ND	KRA304E	PD	50	100	100	80	200	5	10	0.3	10	0.5	47	47				
KRC405E	NE	KRA305E	PE	50	100	100	80	200	5	10	0.3	10	0.5	2.2	47				
KRC406E	NF	KRA306E	PF	50	100	100	80	200	5	10	0.3	10	0.5	4.7	47				
KRC407E	NH	KRA307E	PH	50	100	100	80	150	5	10	0.3	10	0.5	10	47				
KRC408E	NI	KRA308E	PI	50	100	100	80	150	5	10	0.3	10	0.5	22	47				
KRC409E	NJ	KRA309E	PJ	50	100	100	70	140	5	10	0.3	10	0.5	47	22				
KRC410E	NK	KRA310E	PK	50	100	100	120	-	5	1	0.3	10	0.5	4.7	-				
KRC411E	NM	KRA311E	PM	50	100	100	120	-	5	1	0.3	10	0.5	10	-				
KRC412E	NN	KRA312E	PN	50	100	100	120	-	5	1	0.3	10	0.5	100	-				
KRC413E	NO	KRA313E	PO	50	100	100	120	-	5	1	0.3	10	0.5	22	-				
KRC414E	NP	KRA314E	PP	50	100	100	120	-	5	1	0.3	10	0.5	47	-				
KRC416E	N2	KRA316E	P2	50	100	100	33	-	5	5	0.3	10	0.5	1	10				
KRC417E	N4	KRA317E	P4	50	100	100	20	-	5	20	0.3	10	0.5	2.2	2.2				
KRC418E	N5	KRA318E	P5	50	100	100	33	-	5	10	0.3	10	0.5	2.2	10				
KRC419E	N6	KRA319E	P6	50	100	100	30	-	5	10	0.3	10	0.5	4.7	10				
KRC420E	N7	KRA320E	P7	50	100	100	24	-	5	10	0.3	10	0.5	10	4.7				
KRC421E	N8	KRA321E	P8	50	100	100	33	-	5	5	0.3	10	0.5	47	10				
KRC422E	N9	KRA322E	P9	50	100	100	62	-	5	5	0.3	5	0.25	100	100				

Small Signal General Purpose BRTs

Type No.				Max. Ratings			hFE			VCE(sat) (V)			R1 (kΩ)	R2 (kΩ)	Package	Outline (Unit: mm)	
NPN	Mark	PNP	Mark	VCE0 (V)	IC (mA)	PC (mW)	Min.	Typ.	VCE (V)	IC (mA)	Max.	IC (mA)					IB (mA)
													KRC401	NA	KRA301	PA	
KRC402	NB	KRA302	PB	50	100	100	50	80	5	10	0.3	10	0.5	10	10		
KRC403	NC	KRA303	PC	50	100	100	70	120	5	10	0.3	10	0.5	22	22		
KRC404	ND	KRA304	PD	50	100	100	80	200	5	10	0.3	10	0.5	47	47		
KRC405	NE	KRA305	PE	50	100	100	80	200	5	10	0.3	10	0.5	2.2	47		
KRC406	NF	KRA306	PF	50	100	100	80	200	5	10	0.3	10	0.5	4.7	47		
KRC407	NH	KRA307	PH	50	100	100	80	150	5	10	0.3	10	0.5	10	47		
KRC408	NI	KRA308	PI	50	100	100	80	150	5	10	0.3	10	0.5	22	47		
KRC409	NJ	KRA309	PJ	50	100	100	70	140	5	10	0.3	10	0.5	47	22		
KRC410	NK	KRA310	PK	50	100	100	120	-	5	1	0.3	10	0.5	4.7	-		
KRC411	NM	KRA311	PM	50	100	100	120	-	5	1	0.3	10	0.5	10	-		
KRC412	NN	KRA312	PN	50	100	100	120	-	5	1	0.3	10	0.5	100	-		
KRC413	NO	KRA313	PO	50	100	100	120	-	5	1	0.3	10	0.5	22	-		
KRC414	NP	KRA314	PP	50	100	100	120	-	5	1	0.3	10	0.5	47	-		
KRC416	N2	KRA316	P2	50	100	100	33	-	5	5	0.3	10	0.5	1	10		
KRC417	N4	KRA317	P4	50	100	100	20	-	5	20	0.3	10	0.5	2.2	2.2		
KRC418	N5	KRA318	P5	50	100	100	33	-	5	10	0.3	10	0.5	2.2	10		
KRC419	N6	KRA319	P6	50	100	100	30	-	5	10	0.3	10	0.5	4.7	10		
KRC420	N7	KRA320	P7	50	100	100	24	-	5	10	0.3	10	0.5	10	4.7		
KRC421	N8	KRA321	P8	50	100	100	33	-	5	5	0.3	10	0.5	47	10		
KRC422	N9	KRA322	P9	50	100	100	62	-	5	5	0.3	5	0.25	100	100		
KRC101S	NA	KRA101S	PA	50	100	200	30	55	5	10	0.3	10	0.5	4.7	4.7	SOT-23	
KRC102S	NB	KRA102S	PB	50	100	200	50	80	5	10	0.3	10	0.5	10	10		
KRC103S	NC	KRA103S	PC	50	100	200	70	120	5	10	0.3	10	0.5	22	22		
KRC104S	ND	KRA104S	PD	50	100	200	80	200	5	10	0.3	10	0.5	47	47		
KRC105S	NE	KRA105S	PE	50	100	200	80	200	5	10	0.3	10	0.5	2.2	47		
KRC106S	NF	KRA106S	PF	50	100	200	80	200	5	10	0.3	10	0.5	4.7	47		
KRC107S	NH	KRA107S	PH	50	100	200	80	150	5	10	0.3	10	0.5	10	47		
KRC108S	NI	KRA108S	PI	50	100	200	80	150	5	10	0.3	10	0.5	22	47		
KRC109S	NJ	KRA109S	PJ	50	100	200	70	140	5	10	0.3	10	0.5	47	22		
KRC110S	NK	KRA110S	PK	50	100	200	120	-	5	1	0.3	10	0.5	4.7	-		
KRC111S	NM	KRA111S	PM	50	100	200	120	-	5	1	0.3	10	0.5	10	-		
KRC112S	NN	KRA112S	PN	50	100	200	120	-	5	1	0.3	10	0.5	100	-		
KRC113S	NO	KRA113S	PO	50	100	200	120	-	5	1	0.3	10	0.5	22	-		
KRC114S	NP	KRA114S	PP	50	100	200	120	-	5	1	0.3	10	0.5	47	-		
KRC116S	N2	KRA116S	P2	50	100	200	33	-	5	5	0.3	10	0.5	1	10		
KRC117S	N4	KRA117S	P4	50	100	200	20	-	5	20	0.3	10	0.5	2.2	2.2		
KRC118S	N5	KRA118S	P5	50	100	200	33	-	5	10	0.3	10	0.5	2.2	10		
KRC119S	N6	KRA119S	P6	50	100	200	30	-	5	10	0.3	10	0.5	4.7	10		
KRC120S	N7	KRA120S	P7	50	100	200	24	-	5	10	0.3	10	0.5	10	4.7		
KRC121S	N8	KRA121S	P8	50	100	200	33	-	5	5	0.3	10	0.5	47	10		
KRC122S	N9	KRA122S	P9	50	100	200	62	-	5	5	0.3	5	0.25	100	100		

Small Signal General Purpose BRTs

BJTs

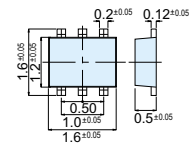
Type No.	Mark	Internal circuit (Top view)	Max. Ratings			hFE		VCE(sat) (V)			R1 (kΩ)	R2 (kΩ)	Package	Outline (Unit: mm)		
			VCEO (V)	IC (mA)	PC (mW)	Min.	Typ.	VCE (V)	IC (mA)	Max.					IC (mA)	IB (mA)
KRA551E	PA		-50	-100	200	30	55	-5	-10	-0.3	-10	-0.5	4.7	4.7	TESV	
KRA552E	PB		-50	-100	200	50	80	-5	-10	-0.3	-10	-0.5	10	10		
KRA553E	PC		-50	-100	200	70	120	-5	-10	-0.3	-10	-0.5	22	22		
KRA554E	PD		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	47	47		
KRA555E	PE		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	2.2	47		
KRA556E	PF		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	4.7	47		
KRA557E	PH		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	10	47		
KRA558E	PI		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	22	47		
KRA559E	PJ		-50	-100	200	70	140	-5	-10	-0.3	-10	-0.5	47	22		
KRA560E	PK		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	4.7	-		
KRA561E	PM		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	10	-		
KRA562E	PN		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	100	-		
KRA563E	PO		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	22	-		
KRA564E	PP		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	47	-		
KRA566E	P2		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	1	10		
KRA567E	P4		-50	-100	200	20	-	-5	-20	-0.3	-10	-0.5	2.2	2.2		
KRA568E	P5		-50	-100	200	33	-	-5	-10	-0.3	-10	-0.5	2.2	10		
KRA569E	P6		-50	-100	200	30	-	-5	-10	-0.3	-10	-0.5	4.7	10		
KRA570E	P7		-50	-100	200	24	-	-5	-10	-0.3	-10	-0.5	10	4.7		
KRA571E	P8		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	47	10		
KRA572E	P9		-50	-100	200	62	-	-5	-5	-0.3	-5	-0.25	100	100		
KRC651E	NA		50	100	200	30	55	5	10	0.3	10	0.5	4.7	4.7		
KRC652E	NB		50	100	200	50	80	5	10	0.3	10	0.5	10	10		
KRC653E	NC		50	100	200	70	120	5	10	0.3	10	0.5	22	22		
KRC654E	ND		50	100	200	80	200	5	10	0.3	10	0.5	47	47		
KRC655E	NE		50	100	200	80	200	5	10	0.3	10	0.5	2.2	47		
KRC656E	NF		50	100	200	80	200	5	10	0.3	10	0.5	4.7	47		
KRC657E	NH		50	100	200	80	150	5	10	0.3	10	0.5	10	47		
KRC658E	NI		50	100	200	80	150	5	10	0.3	10	0.5	22	47		
KRC659E	NJ		50	100	200	70	140	5	10	0.3	10	0.5	47	22		
KRC660E	NK		50	100	200	120	-	5	1	0.3	10	0.5	4.7	-		
KRC661E	NM		50	100	200	120	-	5	1	0.3	10	0.5	10	-		
KRC662E	NN		50	100	200	120	-	5	1	0.3	10	0.5	100	-		
KRC663E	NO		50	100	200	120	-	5	1	0.3	10	0.5	22	-		
KRC664E	NP		50	100	200	120	-	5	1	0.3	10	0.5	47	-		
KRC666E	N2		50	100	200	33	-	5	5	0.3	10	0.5	1	10		
KRC667E	N4		50	100	200	20	-	5	20	0.3	10	0.5	2.2	2.2		
KRC668E	N5		50	100	200	33	-	5	10	0.3	10	0.5	2.2	10		
KRC669E	N6		50	100	200	30	-	5	10	0.3	10	0.5	4.7	10		
KRC670E	N7		50	100	200	24	-	5	10	0.3	10	0.5	10	4.7		
KRC671E	N8		50	100	200	33	-	5	5	0.3	10	0.5	47	10		
KRC672E	N9		50	100	200	62	-	5	5	0.3	5	0.25	100	100		

Note) PD= Total Rating

Small Signal General Purpose BRTs

Type No.	Mark	Internal circuit (Top view)	Max. Ratings			hFE		VCE(sat) (V)			R1(k $\Omega$ )	R2(k $\Omega$ )	Package	Outline (Unit: mm)
			VCEO (V)	IC (mA)	PC (mW)	Min.	Typ.	VCE (V)	IC (mA)	Max.				
KRA721E	JA		-50	-100	200	30	55	-5	-10	-0.3	-10	-0.5	4.7	4.7
KRA722E	JB		-50	-100	200	50	80	-5	-10	-0.3	-10	-0.5	10	10
KRA723E	JC		-50	-100	200	70	120	-5	-10	-0.3	-10	-0.5	22	22
KRA724E	JD		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	47	47
KRA725E	JE		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	2.2	47
KRA726E	JF		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	4.7	47
KRA727E	JH		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	10	47
KRA728E	JI		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	22	47
KRA729E	JJ		-50	-100	200	70	140	-5	-10	-0.3	-10	-0.5	47	22
KRA730E	JK		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	4.7	-
KRA731E	JM		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	10	-
KRA732E	JN		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	100	-
KRA733E	JO		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	22	-
KRA734E	JP		-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	47	-
KRA736E	J2		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	1	10
KRA737E	J4		-50	-100	200	20	-	-5	-20	-0.3	-10	-0.5	2.2	2.2
KRA738E	J5		-50	-100	200	33	-	-5	-10	-0.3	-10	-0.5	2.2	10
KRA739E	J6		-50	-100	200	30	-	-5	-10	-0.3	-10	-0.5	4.7	10
KRA740E	J7		-50	-100	200	24	-	-5	-10	-0.3	-10	-0.5	10	4.7
KRA741E	J8		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	47	10
KRA742E	J9		-50	-100	200	62	-	-5	-5	-0.3	-5	-0.25	100	100
KRC821E	YA			50	100	200	30	55	5	10	0.3	10	0.5	4.7
KRC822E	YB	50		100	200	50	80	5	10	0.3	10	0.5	10	10
KRC823E	YC	50		100	200	70	120	5	10	0.3	10	0.5	22	22
KRC824E	YD	50		100	200	80	200	5	10	0.3	10	0.5	47	47
KRC825E	YE	50		100	200	80	200	5	10	0.3	10	0.5	2.2	47
KRC826E	YF	50		100	200	80	200	5	10	0.3	10	0.5	4.7	47
KRC827E	YH	50		100	200	80	150	5	10	0.3	10	0.5	10	47
KRC828E	YI	50		100	200	80	150	5	10	0.3	10	0.5	22	47
KRC829E	YJ	50		100	200	70	140	5	10	0.3	10	0.5	47	22
KRC830E	YK			50	100	200	120	-	5	1	0.3	10	0.5	4.7
KRC831E	YM		50	100	200	120	-	5	1	0.3	10	0.5	10	-
KRC832E	YN		50	100	200	120	-	5	1	0.3	10	0.5	100	-
KRC833E	YO		50	100	200	120	-	5	1	0.3	10	0.5	22	-
KRC834E	YP		50	100	200	120	-	5	1	0.3	10	0.5	47	-
KRC836E	Y2		50	100	200	33	-	5	5	0.3	10	0.5	1	10
KRC837E	Y4		50	100	200	20	-	5	20	0.3	10	0.5	2.2	2.2
KRC838E	Y5		50	100	200	33	-	5	10	0.3	10	0.5	2.2	10
KRC839E	Y6		50	100	200	30	-	5	10	0.3	10	0.5	4.7	10
KRC840E	Y7		50	100	200	24	-	5	10	0.3	10	0.5	10	4.7
KRC841E	Y8		50	100	200	33	-	5	5	0.3	10	0.5	47	10
KRC842E	Y9		50	100	200	62	-	5	5	0.3	5	0.25	100	100

TES6

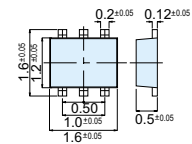


Note) Pd= Total Rating

Small Signal General Purpose BRTs

Type No.	Mark	Internal circuit (Top view)	Max. Ratings			hFE		VCE(sat) (V)			R1(k $\Omega$ )	R2(k $\Omega$ )	Package	Outline (Unit: mm)
			VCEO (V)	IC (mA)	PC (mW)	Min.	Typ.	VCE (V)	IC (mA)	Max.				
KRA751E	PA		-50	-100	200	30	55	-5	-10	-0.3	-10	-0.5	4.7	4.7
KRA752E	PB		-50	-100	200	50	80	-5	-10	-0.3	-10	-0.5	10	10
KRA753E	PC		-50	-100	200	70	120	-5	-10	-0.3	-10	-0.5	22	22
KRA754E	PD		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	47	47
KRA755E	PE		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	2.2	47
KRA756E	PF		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	4.7	47
KRA757E	PH		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	10	47
KRA758E	PI		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	22	47
KRA759E	PJ		-50	-100	200	70	140	-5	-10	-0.3	-10	-0.5	47	22
KRA760E	PK			-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	4.7
KRA761E	PM	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	10	-
KRA762E	PN	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	100	-
KRA763E	PO	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	22	-
KRA764E	PP	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	47	-
KRA766E	P2		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	1	10
KRA767E	P4		-50	-100	200	20	-	-5	-20	-0.3	-10	-0.5	2.2	2.2
KRA768E	P5		-50	-100	200	33	-	-5	-10	-0.3	-10	-0.5	2.2	10
KRA769E	P6		-50	-100	200	30	-	-5	-10	-0.3	-10	-0.5	4.7	10
KRA770E	P7		-50	-100	200	24	-	-5	-10	-0.3	-10	-0.5	10	4.7
KRA771E	P8		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	47	10
KRA772E	P9		-50	-100	200	62	-	-5	-5	-0.3	-5	-0.25	100	100
KRC851E	NA			50	100	200	30	55	5	10	0.3	10	0.5	4.7
KRC852E	NB	50		100	200	50	80	5	10	0.3	10	0.5	10	10
KRC853E	NC	50		100	200	70	120	5	10	0.3	10	0.5	22	22
KRC854E	ND	50		100	200	80	200	5	10	0.3	10	0.5	47	47
KRC855E	NE	50		100	200	80	200	5	10	0.3	10	0.5	2.2	47
KRC856E	NF	50		100	200	80	200	5	10	0.3	10	0.5	4.7	47
KRC857E	NH	50		100	200	80	150	5	10	0.3	10	0.5	10	47
KRC858E	NI	50		100	200	80	150	5	10	0.3	10	0.5	22	47
KRC859E	NJ	50		100	200	70	140	5	10	0.3	10	0.5	47	22
KRC860E	NK			50	100	200	120	-	5	1	0.3	10	0.5	4.7
KRC861E	NM		50	100	200	120	-	5	1	0.3	10	0.5	10	-
KRC862E	NN		50	100	200	120	-	5	1	0.3	10	0.5	100	-
KRC863E	NO		50	100	200	120	-	5	1	0.3	10	0.5	22	-
KRC864E	NP		50	100	200	120	-	5	1	0.3	10	0.5	47	-
KRC866E	N2			50	100	200	33	-	5	5	0.3	10	0.5	1
KRC867E	N4	50		100	200	20	-	5	20	0.3	10	0.5	2.2	2.2
KRC868E	N5	50		100	200	33	-	5	10	0.3	10	0.5	2.2	10
KRC869E	N6	50		100	200	30	-	5	10	0.3	10	0.5	4.7	10
KRC870E	N7	50		100	200	24	-	5	10	0.3	10	0.5	10	4.7
KRC871E	N8	50		100	200	33	-	5	5	0.3	10	0.5	47	10
KRC872E	N9	50		100	200	62	-	5	5	0.3	5	0.25	100	100

TES6



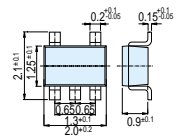
BJTs

Note) PD= Total Rating

Small Signal General Purpose BRTs

Type No.	Mark	Internal circuit (Top view)	Max. Ratings			hFE		VCE(sat) (V)			R1 (kΩ)	R2 (kΩ)	Package	Outline (Unit: mm)
			VCEO (V)	IC (mA)	PC (mW)	Min.	Typ.	VCE (V)	IC (mA)	Max.				
KRA551U	PA		-50	-100	200	30	55	-5	-10	-0.3	-10	-0.5	4.7	4.7
KRA552U	PB		-50	-100	200	50	80	-5	-10	-0.3	-10	-0.5	10	10
KRA553U	PC		-50	-100	200	70	120	-5	-10	-0.3	-10	-0.5	22	22
KRA554U	PD		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	47	47
KRA555U	PE		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	2.2	47
KRA556U	PF		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	4.7	47
KRA557U	PH		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	10	47
KRA558U	PI		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	22	47
KRA559U	PJ		-50	-100	200	70	140	-5	-10	-0.3	-10	-0.5	47	22
KRA560U	PK			-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	4.7
KRA561U	PM	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	10	-
KRA562U	PN	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	100	-
KRA563U	PO	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	22	-
KRA564U	PP	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	47	-
KRA566U	P2		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	1	10
KRA567U	P4		-50	-100	200	20	-	-5	-20	-0.3	-10	-0.5	2.2	2.2
KRA568U	P5		-50	-100	200	33	-	-5	-10	-0.3	-10	-0.5	2.2	10
KRA569U	P6		-50	-100	200	30	-	-5	-10	-0.3	-10	-0.5	4.7	10
KRA570U	P7		-50	-100	200	24	-	-5	-10	-0.3	-10	-0.5	10	4.7
KRA571U	P8		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	47	10
KRA572U	P9		-50	-100	200	62	-	-5	-5	-0.3	-5	-0.25	100	100
KRC651U	NA		50	100	200	30	55	5	10	0.3	10	0.5	4.7	4.7
KRC652U	NB		50	100	200	50	80	5	10	0.3	10	0.5	10	10
KRC653U	NC		50	100	200	70	120	5	10	0.3	10	0.5	22	22
KRC654U	ND		50	100	200	80	200	5	10	0.3	10	0.5	47	47
KRC655U	NE		50	100	200	80	200	5	10	0.3	10	0.5	2.2	47
KRC656U	NF		50	100	200	80	200	5	10	0.3	10	0.5	4.7	47
KRC657U	NH		50	100	200	80	150	5	10	0.3	10	0.5	10	47
KRC658U	NI		50	100	200	80	150	5	10	0.3	10	0.5	22	47
KRC659U	NJ		50	100	200	70	140	5	10	0.3	10	0.5	47	22
KRC660U	NK			50	100	200	120	-	5	1	0.3	10	0.5	4.7
KRC661U	NM	50		100	200	120	-	5	1	0.3	10	0.5	10	-
KRC662U	NN	50		100	200	120	-	5	1	0.3	10	0.5	100	-
KRC663U	NO	50		100	200	120	-	5	1	0.3	10	0.5	22	-
KRC664U	NP	50		100	200	120	-	5	1	0.3	10	0.5	47	-
KRC666U	N2		50	100	200	33	-	5	5	0.3	10	0.5	1	10
KRC667U	N4		50	100	200	20	-	5	20	0.3	10	0.5	2.2	2.2
KRC668U	N5		50	100	200	33	-	5	10	0.3	10	0.5	2.2	10
KRC669U	N6		50	100	200	30	-	5	10	0.3	10	0.5	4.7	10
KRC670U	N7		50	100	200	24	-	5	10	0.3	10	0.5	10	4.7
KRC671U	N8		50	100	200	33	-	5	5	0.3	10	0.5	47	10
KRC672U	N9		50	100	200	62	-	5	5	0.3	5	0.25	100	100

USV



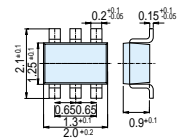
Note) Pd= Total Rating



■ Small Signal General Purpose BRTs

Type No.	Mark	Internal circuit (Top view)	Max. Ratings			hFE		VCE(sat) (V)			R1 (k $\Omega$ )	R2 (k $\Omega$ )	Package	Outline (Unit: mm)
			VCEO (V)	IC (mA)	PC (mW)	Min.	Typ.	VCE (V)	IC (mA)	Max.				
KRA721U	JA		-50	-100	200	30	55	-5	-10	-0.3	-10	-0.5	4.7	4.7
KRA722U	JB		-50	-100	200	50	80	-5	-10	-0.3	-10	-0.5	10	10
KRA723U	JC		-50	-100	200	70	120	-5	-10	-0.3	-10	-0.5	22	22
KRA724U	JD		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	47	47
KRA725U	JE		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	2.2	47
KRA726U	JF		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	4.7	47
KRA727U	JH		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	10	47
KRA728U	JI		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	22	47
KRA729U	JJ		-50	-100	200	70	140	-5	-10	-0.3	-10	-0.5	47	22
KRA730U	JK			-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	4.7
KRA731U	JM	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	10	-
KRA732U	JN	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	100	-
KRA733U	JO	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	22	-
KRA734U	JP	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	47	-
KRA736U	J2		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	1	10
KRA737U	J4		-50	-100	200	20	-	-5	-20	-0.3	-10	-0.5	2.2	2.2
KRA738U	J5		-50	-100	200	33	-	-5	-10	-0.3	-10	-0.5	2.2	10
KRA739U	J6		-50	-100	200	30	-	-5	-10	-0.3	-10	-0.5	4.7	10
KRA740U	J7		-50	-100	200	24	-	-5	-10	-0.3	-10	-0.5	10	4.7
KRA741U	J8		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	47	10
KRA742U	J9		-50	-100	200	62	-	-5	-5	-0.3	-5	-0.25	100	100
KRC821U	YA			50	100	200	30	55	5	10	0.3	10	0.5	4.7
KRC822U	YB	50		100	200	50	80	5	10	0.3	10	0.5	10	10
KRC823U	YC	50		100	200	70	120	5	10	0.3	10	0.5	22	22
KRC824U	YD	50		100	200	80	200	5	10	0.3	10	0.5	47	47
KRC825U	YE	50		100	200	80	200	5	10	0.3	10	0.5	2.2	47
KRC826U	YF	50		100	200	80	200	5	10	0.3	10	0.5	4.7	47
KRC827U	YH	50		100	200	80	150	5	10	0.3	10	0.5	10	47
KRC828U	YI	50		100	200	80	150	5	10	0.3	10	0.5	22	47
KRC829U	YJ	50		100	200	70	140	5	10	0.3	10	0.5	47	22
KRC830U	YK			50	100	200	120	-	5	1	0.3	10	0.5	4.7
KRC831U	YM		50	100	200	120	-	5	1	0.3	10	0.5	10	-
KRC832U	YN		50	100	200	120	-	5	1	0.3	10	0.5	100	-
KRC833U	YO		50	100	200	120	-	5	1	0.3	10	0.5	22	-
KRC834U	YP		50	100	200	120	-	5	1	0.3	10	0.5	47	-
KRC836U	Y2		50	100	200	33	-	5	5	0.3	10	0.5	1	10
KRC837U	Y4		50	100	200	20	-	5	20	0.3	10	0.5	2.2	2.2
KRC838U	Y5		50	100	200	33	-	5	10	0.3	10	0.5	2.2	10
KRC839U	Y6		50	100	200	30	-	5	10	0.3	10	0.5	4.7	10
KRC840U	Y7		50	100	200	24	-	5	10	0.3	10	0.5	10	4.7
KRC841U	Y8		50	100	200	33	-	5	5	0.3	10	0.5	47	10
KRC842U	Y9		50	100	200	62	-	5	5	0.3	5	0.25	100	100

US6

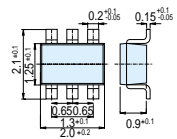


Note) Pd= Total Rating

Small Signal General Purpose BRTs

Type No.	Mark	Internal circuit (Top view)	Max. Ratings			hFE		VCE(sat) (V)			R1(k $\Omega$ )	R2(k $\Omega$ )	Package	Outline (Unit: mm)
			VCEO (V)	IC (mA)	PC (mW)	Min.	Typ.	VCE (V)	IC (mA)	Max.				
KRA751U	PA		-50	-100	200	30	55	-5	-10	-0.3	-10	-0.5	4.7	4.7
KRA752U	PB		-50	-100	200	50	80	-5	-10	-0.3	-10	-0.5	10	10
KRA753U	PC		-50	-100	200	70	120	-5	-10	-0.3	-10	-0.5	22	22
KRA754U	PD		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	47	47
KRA755U	PE		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	2.2	47
KRA756U	PF		-50	-100	200	80	200	-5	-10	-0.3	-10	-0.5	4.7	47
KRA757U	PH		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	10	47
KRA758U	PI		-50	-100	200	80	150	-5	-10	-0.3	-10	-0.5	22	47
KRA759U	PJ		-50	-100	200	70	140	-5	-10	-0.3	-10	-0.5	47	22
KRA760U	PK			-50	-100	200	120	-	-5	-1	-0.3	-10	-0.5	4.7
KRA761U	PM	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	10	-
KRA762U	PN	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	100	-
KRA763U	PO	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	22	-
KRA764U	PP	-50		-100	200	120	-	-5	-1	-0.3	-10	-0.5	47	-
KRA766U	P2		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	1	10
KRA767U	P4		-50	-100	200	20	-	-5	-20	-0.3	-10	-0.5	2.2	2.2
KRA768U	P5		-50	-100	200	33	-	-5	-10	-0.3	-10	-0.5	2.2	10
KRA769U	P6		-50	-100	200	30	-	-5	-10	-0.3	-10	-0.5	4.7	10
KRA770U	P7		-50	-100	200	24	-	-5	-10	-0.3	-10	-0.5	10	4.7
KRA771U	P8		-50	-100	200	33	-	-5	-5	-0.3	-10	-0.5	47	10
KRA772U	P9		-50	-100	200	62	-	-5	-5	-0.3	-5	-0.25	100	100
KRC851U	NA		50	100	200	30	55	5	10	0.3	10	0.5	4.7	4.7
KRC852U	NB		50	100	200	50	80	5	10	0.3	10	0.5	10	10
KRC853U	NC		50	100	200	70	120	5	10	0.3	10	0.5	22	22
KRC854U	ND		50	100	200	80	200	5	10	0.3	10	0.5	47	47
KRC855U	NE		50	100	200	80	200	5	10	0.3	10	0.5	2.2	47
KRC856U	NF		50	100	200	80	200	5	10	0.3	10	0.5	4.7	47
KRC857U	NH		50	100	200	80	150	5	10	0.3	10	0.5	10	47
KRC858U	NI		50	100	200	80	150	5	10	0.3	10	0.5	22	47
KRC859U	NJ		50	100	200	70	140	5	10	0.3	10	0.5	47	22
KRC860U	NK			50	100	200	120	-	5	1	0.3	10	0.5	4.7
KRC861U	NM	50		100	200	120	-	5	1	0.3	10	0.5	10	-
KRC862U	NN	50		100	200	120	-	5	1	0.3	10	0.5	100	-
KRC863U	NO	50		100	200	120	-	5	1	0.3	10	0.5	22	-
KRC864U	NP	50		100	200	120	-	5	1	0.3	10	0.5	47	-
KRC866U	N2		50	100	200	33	-	5	5	0.3	10	0.5	1	10
KRC867U	N4		50	100	200	20	-	5	20	0.3	10	0.5	2.2	2.2
KRC868U	N5		50	100	200	33	-	5	10	0.3	10	0.5	2.2	10
KRC869U	N6		50	100	200	30	-	5	10	0.3	10	0.5	4.7	10
KRC870U	N7		50	100	200	24	-	5	10	0.3	10	0.5	10	4.7
KRC871U	N8		50	100	200	33	-	5	5	0.3	10	0.5	47	10
KRC872U	N9		50	100	200	62	-	5	5	0.3	5	0.25	100	100

US6



Note) Pd= Total Rating

Small Signal General Purpose BRTs

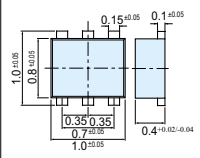
Type No.	Mark	Internal circuit (Top view)	Max. Ratings					hFE								VCE(sat) (V)								R1 (kΩ)		R2 (kΩ)		Package	Outline (Unit: mm)		
			VCE0 (V)		IC (mA)		Pd (mW)	Min.		Typ.		VCE (V)		IC (mA)		Ib (mA)		Max.	IC (mA)	Ib (mA)	Q1	Q2	Q1	Q2							
			Q1	Q2	Q1	Q2		Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2														
KRX101E	BA		50	-50	100	-100	200	50	50	80	80	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	10	10	10	10	10	10	10	10	TESV	
KRX102E	BM		50	-50	100	-100	200	80	80	200	150	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	47	10	47	47	47	10	47	47		
KRX103E	BB		50	-50	100	-100	200	70	70	120	120	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	22	22	22	22	22	22	22	22		
KRX104E	BN		50	-50	100	-100	200	80	30	200	-	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	47	4.7	47	10	47	4.7	47	10		
KRX105E	BE		50	-50	100	-100	200	120	120	-	-	5	-5	1	-1	0.3	-0.3	10	-10	0.5	-0.5	4.7	4.7	-	-	4.7	4.7	-	-	TES6	
KRX201E	BA	50	-50	100	-100	200	50	50	80	80	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	10	10	10	10	10	10	10	10			
KRX202E	BB	50	-50	100	-100	200	70	70	120	120	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	22	22	22	22	22	22	22	22			
KRX203E	BC	50	-50	100	-100	200	80	80	200	200	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	47	47	47	47	47	47	47	47			
KRX204E	BD	50	-50	100	-100	200	80	80	200	200	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	2.2	2.2	47	47	2.2	2.2	47	47			
KRX205E	BE		50	-50	100	-100	200	120	120	-	-	5	-5	1	-1	0.3	-0.3	10	-10	0.5	-0.5	4.7	4.7	-	-	4.7	4.7	-	-		
KRX206E	BK	50	-50	100	-100	200	80	80	150	150	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	10	10	47	47	10	10	47	47			
KRX207E	BT	50	-50	100	-100	200	50	80	80	150	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	10	10	10	10	10	10	10	10			
KRX208E	BW	50	-50	100	-100	200	80	30	200	-	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	47	47	47	10	47	47	47	10			
KRX209E	BM	50	-50	100	-100	200	80	80	200	150	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	47	10	47	47	47	10	47	47			
KRX101U	BA		50	-50	100	-100	200	50	50	80	80	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	10	10	10	10	10	10	10	10	USV	
KRX102U	BM		50	-50	100	-100	200	80	80	200	150	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	47	10	47	47	47	10	47	47		
KRX103U	BB		50	-50	100	-100	200	70	70	120	120	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	22	22	22	22	22	22	22	22		
KRX104U	BN		50	-50	100	-100	200	80	30	200	-	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	47	4.7	47	10	47	4.7	47	10		
KRX105U	BE		50	-50	100	-100	200	120	120	-	-	5	-5	1	-1	0.3	-0.3	10	-10	0.5	-0.5	4.7	4.7	-	-	4.7	4.7	-	-	US6	
KRX201U	BA	50	-50	100	-100	200	50	50	80	80	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	10	10	10	10	10	10	10	10			
KRX202U	BB	50	-50	100	-100	200	70	70	120	120	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	22	22	22	22	22	22	22	22			
KRX203U	BC	50	-50	100	-100	200	80	80	200	200	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	47	47	47	47	47	47	47	47			
KRX204U	BD	50	-50	100	-100	200	80	80	200	200	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	2.2	2.2	47	47	2.2	2.2	47	47			
KRX205U	BE		50	-50	100	-100	200	120	120	-	-	5	-5	1	-1	0.3	-0.3	10	-10	0.5	-0.5	4.7	4.7	-	-	4.7	4.7	-	-		
KRX206U	BK	50	-50	100	-100	200	80	80	150	150	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	10	10	47	47	10	10	47	47			
KRX207U	BT	50	-50	100	-100	200	50	80	80	150	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	10	10	10	10	10	10	10	10			
KRX208U	BW	50	-50	100	-100	200	80	30	200	-	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	47	47	47	10	47	47	47	10			
KRX209U	BM	50	-50	100	-100	200	80	80	200	150	5	-5	10	-10	0.3	-0.3	10	-10	0.5	-0.5	47	10	47	47	47	10	47	47			
KRX210T	MN		50	-50	100	-800	300	80	56	80	-	5	-5	10	-50	0.3	-0.3	10	-50	0.5	-2.5	10	1	10	10	10	1	10	10	TS6	

Note) Pd= Total Rating

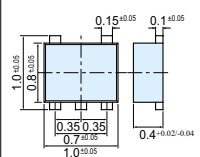
Small Signal General Purpose BRTs

Type No.	Mark	Internal circuit (Top view)	Max. Ratings			hFE		VCE(sat) (V)			R1( kΩ)	R2( kΩ)	Package	Outline (Unit: mm)
			VCEO (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.				
KRA751F	KA		-20	-50	50	30	-	-5	-10	-0.15	-5	-0.25	4.7	4.7
KRA752F	KB		-20	-50	50	60	-	-5	-10	-0.15	-5	-0.25	10	10
KRA753F	KC		-20	-50	50	100	-	-5	-10	-0.15	-5	-0.25	22	22
KRA754F	KD		-20	-50	50	120	-	-5	-10	-0.15	-5	-0.25	47	47
KRA755F	KE		-20	-50	50	120	-	-5	-10	-0.15	-5	-0.25	2.2	47
KRA756F	KF		-20	-50	50	120	-	-5	-10	-0.15	-5	-0.25	4.7	47
KRA757F	KG		-20	-50	50	120	-	-5	-10	-0.15	-5	-0.25	10	47
KRA758F	KH		-20	-50	50	120	-	-5	-10	-0.15	-5	-0.25	22	47
KRA759F	KJ		-20	-50	50	100	-	-5	-10	-0.15	-5	-0.25	47	22
KRC760F	KK			-20	-50	50	300	-	-5	-1	-0.15	-5	-0.25	4.7
KRC761F	KL	-20		-50	50	300	-	-5	-1	-0.15	-5	-0.25	10	-
KRC763F	KN	-20		-50	50	300	-	-5	-1	-0.15	-5	-0.25	22	-
KRC764F	KP	-20		-50	50	300	-	-5	-1	-0.15	-5	-0.25	47	-
KRC851F	LA		20	50	50	30	-	5	10	0.15	5	0.25	4.7	4.7
KRC852F	LB		20	50	50	60	-	5	10	0.15	5	0.25	10	10
KRC853F	LC		20	50	50	100	-	5	10	0.15	5	0.25	22	22
KRC854F	LD		20	50	50	120	-	5	10	0.15	5	0.25	47	47
KRC855F	LE		20	50	50	120	-	5	10	0.15	5	0.25	2.2	47
KRC856F	LF		20	50	50	120	-	5	10	0.15	5	0.25	4.7	47
KRC857F	LG		20	50	50	120	-	5	10	0.15	5	0.25	10	47
KRC858F	LH		20	50	50	120	-	5	10	0.15	5	0.25	22	47
KRC859F	LJ		20	50	50	100	-	5	10	0.15	5	0.25	47	22
KRC860F	LK			20	50	50	300	-	5	1	0.15	5	0.25	4.7
KRC861F	LL	20		50	50	300	-	5	1	0.15	5	0.25	10	-
KRC863F	LN	20		50	50	300	-	5	1	0.15	5	0.25	22	-
KRC864F	LP	20		50	50	300	-	5	1	0.15	5	0.25	47	-
KRA551F	HA		-20	-50	50	30	-	-5	-10	-0.15	-5	-0.25	4.7	4.7
KRA552F	HB		-20	-50	50	60	-	-5	-10	-0.15	-5	-0.25	10	10
KRA553F	HC		-20	-50	50	100	-	-5	-10	-0.15	-5	-0.25	22	22
KRA554F	HD		-20	-50	50	120	-	-5	-10	-0.15	-5	-0.25	47	47
KRA555F	HE		-20	-50	50	120	-	-5	-10	-0.15	-5	-0.25	2.2	47
KRA556F	HF		-20	-50	50	120	-	-5	-10	-0.15	-5	-0.25	4.7	47
KRA557F	HG		-20	-50	50	120	-	-5	-10	-0.15	-5	-0.25	10	47
KRA558F	HH		-20	-50	50	120	-	-5	-10	-0.15	-5	-0.25	22	47
KRA559F	HJ		-20	-50	50	100	-	-5	-10	-0.15	-5	-0.25	47	22
KRA560F	HK			-20	-50	50	300	-	-5	-1	-0.15	-5	-0.25	4.7
KRA561F	HL	-20		-50	50	300	-	-5	-1	-0.15	-5	-0.25	10	-
KRA563F	HN	-20		-50	50	300	-	-5	-1	-0.15	-5	-0.25	22	-
KRA564F	HP	-20		-50	50	300	-	-5	-1	-0.15	-5	-0.25	47	-
KRC651F	JA		20	50	50	30	-	5	10	0.15	5	0.25	4.7	4.7
KRC652F	JB		20	50	50	60	-	5	10	0.15	5	0.25	10	10
KRC653F	JC		20	50	50	100	-	5	10	0.15	5	0.25	22	22
KRC654F	JD		20	50	50	120	-	5	10	0.15	5	0.25	47	47
KRC655F	JE		20	50	50	120	-	5	10	0.15	5	0.25	2.2	47
KRC656F	JF		20	50	50	120	-	5	10	0.15	5	0.25	4.7	47
KRC657F	JG		20	50	50	120	-	5	10	0.15	5	0.25	10	47
KRC658F	JH		20	50	50	120	-	5	10	0.15	5	0.25	22	47
KRC659F	JJ		20	50	50	100	-	5	10	0.15	5	0.25	47	22
KRC660F	JK			20	50	50	300	-	5	1	0.15	5	0.25	4.7
KRC661F	JL	20		50	50	300	-	5	1	0.15	5	0.25	10	-
KRC663F	JN	20		50	50	300	-	5	1	0.15	5	0.25	22	-
KRC664F	JP	20		50	50	300	-	5	1	0.15	5	0.25	47	-

TFS6



TFSV



Note) PD= Total Rating

■ Small Signal General Purpose BRTs

Type No.		Max. Ratings			hFE		VCE(sat) (V)			R1 (kΩ)	R2 (kΩ)	Package	Outline (Unit: mm)			
NPN	PNP	VCEO (V)	IC (mA)	Pc (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.					IC (mA)	IB (mA)	
Mark	Mark															
KRC151F	GA	KRA151F	FA	20	50	50	30	-	5	10	0.15	5	0.25	4.7	4.7	
KRC152F	GB	KRA152F	FB	20	50	50	60	-	5	10	0.15	5	0.25	10	10	
KRC153F	GC	KRA153F	FC	20	50	50	100	-	5	10	0.15	5	0.25	22	22	
KRC154F	GD	KRA154F	FD	20	50	50	120	-	5	10	0.15	5	0.25	47	47	
KRC155F	GE	KRA155F	FE	20	50	50	120	-	5	10	0.15	5	0.25	2.2	47	
KRC156F	GF	KRA156F	FF	20	50	50	120	-	5	10	0.15	5	0.25	4.7	47	
KRC157F	GG	KRA157F	FG	20	50	50	120	-	5	10	0.15	5	0.25	10	47	
KRC158F	GH	KRA158F	FH	20	50	50	120	-	5	10	0.15	5	0.25	22	47	
KRC159F	GJ	KRA159F	FJ	20	50	50	100	-	5	10	0.15	5	0.25	47	22	
KRC160F	GK	KRA160F	FK	20	50	50	300	-	5	1	0.15	5	0.25	4.7	-	
KRC161F	GL	KRA161F	FL	20	50	50	300	-	5	1	0.15	5	0.25	10	-	
KRC163F	GN	KRA163F	FN	20	50	50	300	-	5	1	0.15	5	0.25	22	-	
KRC164F	GP	KRA164F	FP	20	50	50	300	-	5	1	0.15	5	0.25	47	-	

■ Small Signal Audio Muting BRTs

Type No.		Internal circuit (Top view)	Max. Ratings			hFE		VCE(sat) (V)			R1 (kΩ)	Ron (Ω)	Package	Outline (Unit: mm)	
Mark	VCEO (V)		IC (mA)	Pc (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Typ.			Typ.
KRC681T	MQ □		20	300	900▲	200	1200	2	4	0.1	30	3	2.2	-	
KRC682T	MR □		20	300	900▲	200	1200	2	4	0.1	30	3	4.7	-	
KRC683T	MS □		20	300	900▲	200	1200	2	4	0.1	30	3	5.6	-	
KRC684T	MT □		20	300	900▲	200	1200	2	4	0.1	30	3	6.8	-	
KRC685T	MU □		20	300	900▲	200	1200	2	4	0.1	30	3	10	-	
KRC686T	MV □		20	300	900▲	200	1200	2	4	0.1	30	3	22	-	
KRC881T	MQ □		20	300	900▲	200	1200	2	4	0.1	30	3	2.2	-	
KRC882T	MR □		20	300	900▲	200	1200	2	4	0.1	30	3	4.7	-	
KRC883T	MS □		20	300	900▲	200	1200	2	4	0.1	30	3	5.6	-	
KRC884T	MT □		20	300	900▲	200	1200	2	4	0.1	30	3	6.8	-	
KRC885T	MU □		20	300	900▲	200	1200	2	4	0.1	30	3	10	-	
KRC886T	MV □		20	300	900▲	200	1200	2	4	0.1	30	3	22	-	
KRC231S	NW	-	15	600	200	200	800	5	50	0.08	50	2.5	2.2	0.6	
KRC232S	NY	15	600	200	200	800	5	50	0.08	50	2.5	5.6	0.6		
KRC233S	NZ	15	600	200	200	800	5	50	0.08	50	2.5	10	0.6		
KRC234S	NNA	15	600	200	200	800	5	50	0.08	50	2.5	4.7	0.6		
KRC235S	NNB	15	600	200	200	800	5	50	0.08	50	2.5	6.8	0.6		
KRC281S	MQ □		20	300	200	200	1200	2	4	0.1	30	3	2.2	1	
KRC282S	MR □		20	300	200	200	1200	2	4	0.1	30	3	4.7	1	
KRC283S	MS □		20	300	200	200	1200	2	4	0.1	30	3	5.6	1	
KRC284S	MT □		20	300	200	200	1200	2	4	0.1	30	3	6.8	1	
KRC285S	MU □		20	300	200	200	1200	2	4	0.1	30	3	10	1	
KRC286S	MV □		20	300	200	200	1200	2	4	0.1	30	3	22	1	
KRC281U	MQ		20	300	100	200	1200	2	4	0.1	30	3	2.2	1	
KRC282U	MR		20	300	100	200	1200	2	4	0.1	30	3	4.7	1	
KRC283U	MS		20	300	100	200	1200	2	4	0.1	30	3	5.6	1	
KRC284S	MT		20	300	100	200	1200	2	4	0.1	30	3	6.8	1	
KRC285S	MS		20	300	100	200	1200	2	4	0.1	30	3	10	1	
KRC286S	MV		20	300	100	200	1200	2	4	0.1	30	3	22	1	

Note) ▲: Package Mounted on a Ceramic Board (600mm<sup>2</sup>×0.8mm)

Small Signal High Current BRTs

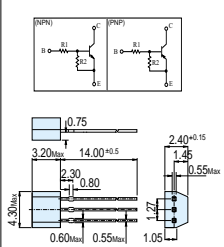
Type No.		Internal circuit (Top view)	Max. Ratings			G <sub>i</sub>			V <sub>o(ON)</sub> (V)			R <sub>1</sub> (kΩ)	R <sub>2</sub> (kΩ)	Package	Outline (Unit: mm)		
Mark			V <sub>o</sub> (V)	I <sub>o</sub> (mA)	P <sub>d</sub> (mW)	Min.	V <sub>o</sub> (V)	I <sub>o</sub> (mA)	Max.	I <sub>o</sub> (mA)	I <sub>i</sub> (mA)						
KRA521T	PA		-50	-800	900▲	33	-5	-50	-0.3	-50	-2.5	1	1	TSV			
KRA522T	PB		-50	-800	900▲	39	-5	-50	-0.3	-50	-2.5	2.2	2.2				
KRA523T	PC		-50	-800	900▲	47	-5	-50	-0.3	-50	-2.5	4.7	4.7				
KRA524T	PD		-50	-800	900▲	56	-5	-50	-0.3	-50	-2.5	10	10				
KRA525T	PE		-50	-800	900▲	56	-5	-50	-0.3	-50	-2.5	1	10				
KRA526T	PF		-50	-800	900▲	56	-5	-50	-0.3	-50	-2.5	2.2	10				
KRC641T	NA		50	800	900▲	33	5	50	0.3	50	2.5	1	1			TSV	
KRC642T	NB		50	800	900▲	39	5	50	0.3	50	2.5	2.2	2.2				
KRC643T	NC		50	800	900▲	47	5	50	0.3	50	2.5	4.7	4.7				
KRC644T	ND		50	800	900▲	56	5	50	0.3	50	2.5	10	10				
KRC645T	NE		50	800	900▲	56	5	50	0.3	50	2.5	1	10				
KRC646T	NF		50	800	900▲	56	5	50	0.3	50	2.5	2.2	10				
KRA721T	PA		-50	-800	900▲	33	-5	-50	-0.3	-50	-2.5	1	1	TS6			
KRA722T	PB		-50	-800	900▲	39	-5	-50	-0.3	-50	-2.5	2.2	2.2				
KRA723T	PC		-50	-800	900▲	47	-5	-50	-0.3	-50	-2.5	4.7	4.7				
KRA724T	PD		-50	-800	900▲	56	-5	-50	-0.3	-50	-2.5	10	10				
KRA725T	PE		-50	-800	900▲	56	-5	-50	-0.3	-50	-2.5	1	10				
KRA726T	PF		-50	-800	900▲	56	-5	-50	-0.3	-50	-2.5	2.2	10				
KRC841T	NA		50	800	900▲	33	5	50	0.3	50	2.5	1	1			TS6	
KRC842T	NB		50	800	900▲	39	5	50	0.3	50	2.5	2.2	2.2				
KRC843T	NC		50	800	900▲	47	5	50	0.3	50	2.5	4.7	4.7				
KRC844T	ND		50	800	900▲	56	5	50	0.3	50	2.5	10	10				
KRC845T	NE		50	800	900▲	56	5	50	0.3	50	2.5	1	10				
KRC846T	NF		50	800	900▲	56	5	50	0.3	50	2.5	2.2	10				

Note) ▲ : Package Mounted on a Ceramic Board (600mm<sup>2</sup> × 0.8mm)

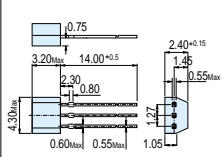
Type No.				Max. Ratings			G <sub>i</sub>			V <sub>o(ON)</sub> (V)			R <sub>1</sub> (kΩ)	R <sub>2</sub> (kΩ)	Package	Outline (Unit: mm)
NPN	Mark	PNP	Mark	V <sub>o</sub> (V)	I <sub>o</sub> (mA)	P <sub>d</sub> (mW)	Min.	V <sub>o</sub> (V)	I <sub>o</sub> (mA)	Max.	I <sub>o</sub> (mA)	I <sub>i</sub> (mA)				
KRC241S	NQ	KRA221S	PQ	50	800	200	33	5	50	0.3	50	2.5	1	1	SOT-23	
KRC242S	NR	KRA222S	PR	50	800	200	39	5	50	0.3	50	2.5	2.2	2.2		
KRC243S	NS	KRA223S	PS	50	800	200	47	5	50	0.3	50	2.5	4.7	4.7		
KRC244S	NT	KRA224S	PT	50	800	200	56	5	50	0.3	50	2.5	10	10		
KRC245S	NU	KRA225S	PU	50	800	200	56	5	50	0.3	50	2.5	1	10		
KRC246S	NV	KRA226S	PV	50	800	200	56	5	50	0.3	50	2.5	2.2	10		
KRC451	CA	*KRA351	AA	12	500	100	33	5	50	0.3	50	2.5	1	1	USM	
KRC452	CB	*KRA352	AB	12	500	100	39	5	50	0.3	50	2.5	2.2	2.2		
KRC453	CC	*KRA353	AC	12	500	100	47	5	50	0.3	50	2.5	4.7	4.7		
KRC454	CD	*KRA354	AD	12	500	100	56	5	50	0.3	50	2.5	10	10		
KRC455	CE	*KRA355	AE	12	500	100	56	5	50	0.3	50	2.5	0.47	10		
KRC456	CF	*KRA356	AF	12	500	100	56	5	50	0.3	50	2.5	1	10		
KRC457	CG	*KRA357	AG	12	500	100	56	5	50	0.3	50	2.5	2.2	10		

Note) \* Under development.

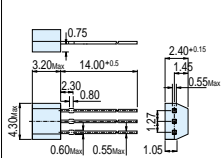
■ Small Signal General Purpose BRTs

Type No.		Max. Ratings			hFE				VCE(sat) (V)			R1	R2	Package	Outline (Unit: mm)
NPN	PNP	VCE0 (V)	IC (mA)	Pc (mW)	Min.	Typ.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	(kΩ)	(kΩ)		
KRC101M	KRA101M	50	100	400	30	55	5	10	0.3	10	0.5	4.7	4.7	TO-92M	
KRC102M	KRA102M	50	100	400	50	80	5	10	0.3	10	0.5	10	10		
KRC103M	KRA103M	50	100	400	70	120	5	10	0.3	10	0.5	22	22		
KRC104M	KRA104M	50	100	400	80	200	5	10	0.3	10	0.5	47	47		
KRC105M	KRA105M	50	100	400	80	200	5	10	0.3	10	0.5	2.2	47		
KRC106M	KRA106M	50	100	400	80	200	5	10	0.3	10	0.5	4.7	47		
KRC107M	KRA107M	50	100	400	80	150	5	10	0.3	10	0.5	10	47		
KRC108M	KRA108M	50	100	400	80	150	5	10	0.3	10	0.5	22	47		
KRC109M	KRA109M	50	100	400	70	140	5	10	0.3	10	0.5	47	22		
KRC110M	KRA110M	50	100	400	120	-	5	1	0.3	10	0.5	4.7	-		
KRC111M	KRA111M	50	100	400	120	-	5	1	0.3	10	0.5	10	-		
KRC112M	KRA112M	50	100	400	120	-	5	1	0.3	10	0.5	100	-		
KRC113M	KRA113M	50	100	400	120	-	5	1	0.3	10	0.5	22	-		
KRC114M	KRA114M	50	100	400	120	-	5	1	0.3	10	0.5	47	-		
KRC116M	KRA116M	50	100	400	33	-	5	5	0.3	10	0.5	1	10		
KRC117M	KRA117M	50	100	400	20	-	5	20	0.3	10	0.5	2.2	2.2		
KRC118M	KRA118M	50	100	400	33	-	5	10	0.3	10	0.5	2.2	10		
KRC119M	KRA119M	50	100	400	30	-	5	10	0.3	10	0.5	4.7	10		
KRC120M	KRA120M	50	100	400	24	-	5	10	0.3	10	0.5	10	4.7		
KRC121M	KRA121M	50	100	400	33	-	5	5	0.3	10	0.5	47	10		
KRC122M	KRA122M	50	100	400	62	-	5	5	0.3	5	0.25	100	100		

■ Small Signal Audio Muting BRTs

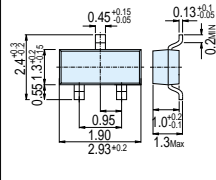
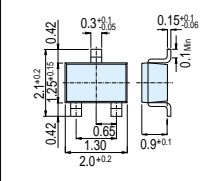
Type No.		Max. Ratings			hFE				VCE(sat) (V)			R1	Ron	Package	Outline (Unit: mm)
NPN	PNP	VCE0 (V)	IC (mA)	Pc (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	(kΩ)	(Ω)		
KRC231M	-	15	600	400	200	800	5	50	0.08	50	2.5	2.2	0.6	TO-92M	
KRC232M	-	15	600	400	200	800	5	50	0.08	50	2.5	5.6	0.6		
KRC233M	-	15	600	400	200	800	5	50	0.08	50	2.5	10	0.6		
KRC234M	-	15	600	400	200	800	5	50	0.08	50	2.5	4.7	0.6		
KRC235M	-	15	600	400	200	800	5	50	0.08	50	2.5	6.8	0.6		
KRC281M	-	20	300	400	200	1200	2	4	0.1	30	3	2.2	1		
KRC282M	-	20	300	400	200	1200	2	4	0.1	30	3	4.7	1		
KRC283M	-	20	300	400	200	1200	2	4	0.1	30	3	5.6	1		
KRC284M	-	20	300	400	200	1200	2	4	0.1	30	3	6.8	1		
KRC285M	-	20	300	400	200	1200	2	4	0.1	30	3	10	1		
KRC286M	-	20	300	400	200	1200	2	4	0.1	30	3	22	1		

■ Small Signal High Current BRTs

Type No.		Max. Ratings			hFE				VCE(sat) (V)			R1	Ron	Package	Outline (Unit: mm)
NPN	PNP	VCE0 (V)	IC (mA)	Pc (mW)	Min.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	(kΩ)	(Ω)			
KRC241M	KRA221M	50	800	400	33	5	50	0.3	50	2.5	1	1	TO-92M		
KRC242M	KRA222M	50	800	400	39	5	50	0.3	50	2.5	2.2	2.2			
KRC243M	KRA223M	50	800	400	47	5	50	0.3	50	2.5	4.7	4.7			
KRC244M	KRA224M	50	800	400	56	5	50	0.3	50	2.5	10	10			
KRC245M	KRA225M	50	800	400	56	5	50	0.3	50	2.5	1	10			
KRC246M	KRA226M	50	800	400	56	5	50	0.3	50	2.5	2.2	10			

Small Signal General Purpose Transistors

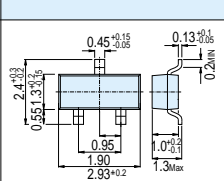
Type No.	Complementary		Max. Ratings			hFE		VCE(sat) (V)			fr (MHz)		Package	Outline (Unit: mm)			
	Mark	Mark	VCEO (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	IB (mA)	Min.	Typ.			VCE (V)	IC (mA)	
BC858W	3□	BC848W	1□	-30	-100	100	125	800	-5	-2	-0.3	-10	-0.5	-	150	-5	-10
BC857W	3□	BC847W	1□	-45	-100	100	125	800	-5	-2	-0.3	-10	-0.5	-	150	-5	-10
BC856W	3□	BC846W	1□	-65	-100	100	125	475	-5	-2	-0.3	-10	-0.5	-	150	-5	-10
BC848W	1□	BC858W	3□	30	100	100	110	800	5	2	0.25	10	0.5	-	300	5	10
BC847W	1□	BC857W	3□	45	100	100	110	800	5	2	0.25	10	0.5	-	300	5	10
BC846W	1□	BC856W	3□	65	100	100	110	450	5	2	0.25	10	0.5	-	300	5	10
BCW29	C1	BCW31	D1	-20	-100	※350	110	220	-5	-2	-0.25	-10	-0.5	-	-	-	-
BCW30	C2	BCW32	D2	-20	-100	※350	200	450	-5	-2	-0.25	-10	-0.5	-	-	-	-
BC858	3□	BC848	1□	-30	-100	※350	125	800	-5	-2	-0.3	-10	-0.5	-	150	-5	-10
BC859	4□	BC849	2□	-30	-100	※350	125	475	-5	-2	-0.3	-10	-0.5	-	150	-5	-10
BCW69	H1	BCW71	K1	-45	-100	200	120	260	-5	-2	-0.3	-10	-0.5	-	150	-5	-10
BCW70	H2	BCW72	K2	-45	-100	200	215	500	-5	-2	-0.3	-10	-0.5	-	150	-5	-10
BC857	3□	BC847	1□	-45	-100	※350	125	800	-5	-2	-0.3	-10	-0.5	-	150	-5	-10
BC860	4□	BC850	2□	-45	-100	※350	125	475	-5	-2	-0.3	-10	-0.5	-	150	-5	-10
BC807	5□	BC817	6□	-45	-800	※350	100	630	-1	-100	-0.7	-500	-50	80	-	5	10
BCW68	D□	-	-	-45	-800	※350	100	400	-1	-100	-0.3	-100	-10	100	-	-10	-80
BCW89	H5	BCV71	K7	-60	-100	200	120	260	-5	-2	-0.3	-10	-0.5	-	150	-5	-10
BC856	3□	BC846	1□	-65	-100	※350	125	475	-5	-2	-0.3	-10	-0.5	-	150	-5	-10
BCW31	D1	BCW29	C1	20	100	※350	110	220	5	2	0.25	10	0.5	-	-	-	-
BCW32	D2	BCW30	C2	20	100	※350	200	450	5	2	0.25	10	0.5	-	-	-	-
BC848	1□	BC858	3□	30	100	※350	110	800	5	2	0.25	10	0.5	-	300	5	10
BC849	2□	BC859	4□	30	100	※350	200	800	5	2	0.25	10	0.5	-	300	5	10
BCW71	K1	BCW69	H1	45	100	200	110	220	5	2	0.25	10	0.5	-	300	5	10
BCW72	K2	BCW70	H2	45	100	200	200	450	5	2	0.25	10	0.5	-	300	5	10
BC847	1□	BC857	3□	45	100	※350	110	800	5	2	0.25	10	0.5	-	300	5	10
BC850	2□	BC860	4□	45	100	※350	200	800	5	2	0.25	10	0.5	-	300	5	10
BC817	6□	BC807	5□	45	800	※350	100	630	1	100	0.7	500	50	100	-	5	10
BCX19	U1	-	-	45	500	200	100	600	1	100	0.62	500	50	-	200	5	10
BCV71	K7	BCW89	H5	60	100	200	110	220	5	2	0.25	10	0.5	-	300	5	10
BCV72	K8	-	-	60	100	200	200	450	5	2	0.25	10	0.5	-	300	5	10
BC846	1□	BC856	3□	65	100	※350	110	450	5	2	0.25	10	0.5	-	300	5	10
MMBTA55	AMX	MMBTA05	ACX	-60	-500	※350	100	-	-1	-10	-0.25	-100	-10	50	-	1	100
MMBTA56	ANX	MMBTA06	ADX	-80	-500	※350	100	-	-1	-10	-0.25	-100	-10	50	-	1	100
MMBTA05	ACX	MMBTA55	AMX	60	500	※350	100	-	1	10	0.25	100	10	80	-	1	10
MMBTA06	ADX	MMBTA56	ANX	80	500	※350	100	-	1	10	0.25	100	10	100	-	2	10
MPS8050S	BH	MPS8550S	BJ□	25	150	※350	85	300	1	100	0.5	800	80	100	190	10	50
MPS8550S	BJ□	MPS8050S	BH□	-25	-150	※350	85	300	-1	-100	-0.5	-800	-80	100	200	-10	-50
KTC8050S	BK	KTC8550S	BL□	30	800	※350	100	300	1	50	0.5	500	20	-	120	5	10
KTC8550S	BL□	KTC8050S	BK□	-30	-800	※350	100	300	-1	-50	-0.5	-500	-50	-	120	-5	-10
KTC9012S	BB□	KTC9013S	BC□	-30	-500	※350	96	246	-1	-50	-0.25	-100	-10	150	-	-6	-20
KTC9013S	BC□	KTC9012S	BB□	30	500	※350	96	246	1	50	0.25	100	10	140	-	6	20
KTC9014S	BD□	KTC9015S	BE□	50	150	※350	100	1000	5	1	0.25	100	10	60	-	10	1
KTC9015S	BE□	KTC9014S	BD□	-50	-150	※350	100	600	-5	-1	-0.3	-100	-10	60	-	-10	-1
KN3906S	ZAA	KN3904S	ZCA	-40	-200	※350	60	-	-1	-0.1	-0.25	-10	-1	-	250	-20	-10
KN2907S	ZDA	KN2222S	ZBA	-40	-600	※350	35	-	-10	-0.1	-0.4	-150	-15	200	-	-20	-50
KN4403S	ZWA	KN4401S	ZUA	-40	-600	※350	30	-	-1	-0.1	-0.4	-150	-15	200	-	-10	-20
KN2907AS	ZHA	KN2222AS	ZGA	-60	-600	※350	75	-	-10	-0.1	-0.4	-150	-15	200	-	-20	-50
KN2222S	ZBA	KN2907S	ZDA	30	600	※350	35	-	10	0.1	0.4	150	15	250	-	20	20
KN3904S	ZCA	KN3906S	ZAA	40	200	※350	40	-	1	0.1	0.2	10	1	-	300	20	10
KN2222AS	ZGA	KN2907AS	ZHA	40	600	※350	35	-	10	0.1	0.3	150	15	300	-	20	20
KN4401S	ZUA	KN4403S	ZWA	40	600	※350	20	-	1	0.1	0.4	150	15	250	-	10	20



Note) ※ : Package Mounted on 99.5% Alumina 10 8 0.6mm, □ : hFE Grade

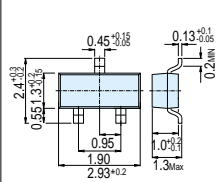


■ Small Signal Low Noise Transistors

Type No.	Complementary		Max. Ratings			hFE		VCE(sat) (V)			NF (dB)				Package	Outline (Unit: mm)			
	Mark	Mark	VCEO (V)	IC (mA)	PC (mW)	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Max.	VCE (V)	IC (mA)			Rg (kΩ)	f (kHz)	
BSS63	T6	-	-100	-100	200	30 ◆	-1	-10	-0.25	-25	-2.5	-	-	-	-	-	-	SOT-23	
BSS64	U6	-	80	100	200	60 ◇	1	1	0.15	4	0.4	-	-	-	-	-			

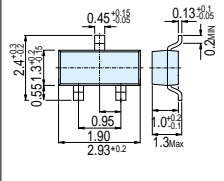
Note) ◆ : Min, ◇ : Typ

■ Small Signal Darlington Transistors

Type No.	Complementary		Max. Ratings			hFE		VCE(sat) (V)			fr (MHz)		Package	Outline (Unit: mm)		
	Mark	Mark	VCEO (V)	IC (mA)	PC (mW)	Min.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.			VCE (V)	IC (mA)
MMBTA63	AGX	-	-30 △	-500	350	5000	-5	-10	-1.5	-100	-0.1	125	-5	-10	SOT-23	
MMBTA64	AFX	-	-30 △	-500	350	10000	-5	-10	-1.5	-100	-0.1	125	-5	-10		
MMBTA517	UA	-	30	400	350	30000	2	100	1	100	1	220	2	100		
MMBTA13	AIX	-	30 △	500	350	5000	5	10	1.5	100	0.1	125	5	10		
MMBTA14	AHX	-	30 △	500	350	5000	5	10	1.5	100	0.1	125	5	10		

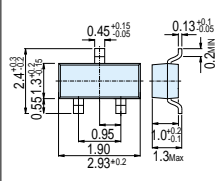
Note) △ : VCES

■ Small Signal High Voltage Transistors

Type No.	Complementary		Max. Ratings			hFE		VCE(sat) (V)			fr (MHz)				Package	Outline (Unit: mm)				
	Mark	Mark	VCEO (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	Typ.			Max.	VCE (V)	IC (mA)	
2N5400S	ZN	-	-120	-600	※350	40	180	-5	-10	-0.2	-10	-1	100	-	400	-10	-10	SOT-23		
2N5401S	ZE	-	-150	-600	※350	60	240	-5	-10	-0.2	-10	-1	100	-	300	-10	-10			
2N5550S	ZP	-	140	600	※350	60	250	5	10	0.15	10	1	100	-	300	10	10			
2N5551S	ZF	-	160	600	※350	80	250	5	10	0.15	10	1	100	-	300	10	10			
MMBTA93	YW	MMBTA43	ABX	-200	-500	※350	40	-	-10	-10	-0.5	-20	-2	50	-	-	-20			-10
MMBTA92	YV	MMBTA42	AAX	-300	-500	※350	40	-	-10	-10	-0.5	-20	-2	50	-	-	-20			-10
MMBTA43	ABX	MMBTA93	YW	200	500	※350	40	-	10	10	0.5	20	2	50	-	-	20			10
MMBTA42	AAX	MMBTA92	YV	300	500	※350	40	-	10	10	0.5	20	2	50	-	-	20			10
MMBTA44	APX	-	400	300	※350	50	200	10	10	0.5	10	1	20	-	-	10	10			
PZTA44	-	-	400	300	2W	50	200	10	10	0.5	10	1	20	-	-	10	10			SOT-223

Note) ※ : Package Mounted on 99.5% Alumina 10×8×0.6mm @ : Mounted on Ceramic Substrate (250mm²×0.8)

■ Small Signal RF/ VHF/ UHF Transistors

Type No.	Max. Ratings			hFE		VCE(sat) (V)			fr (MHz)			Cob (pF)		NF (dB)		Gpe (dB)	Package	Outline (Unit: mm)					
	Mark	VCEO (V)	IC (mA)	PC (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	Typ.	Max.	VCE (V)				IC (mA)	Max.	f (MHz)	Min.	
BFQ31	S2	15	100	200	20	-	1	3	0.4	10	1	600	-	-	10	4	1.7	10	6	60	-	SOT-23	
BF599	G2	25	25	200	40	-	10	7	-	-	-	550	-	10	7	0.35 ◇	10	-	-	-	-		
BFS20	G1	25	25	200	40	-	10	7	-	-	-	275	550	-	10	7	0.35 ◇	10	-	-	-		
KTC9011S	BA □	30	50	※350	54	198	5	1	0.4	10	1	100	-	400	10	1	2.0 ◇	10	-	-	-		
KTC9016S	BF □	30	20	※350	54	198	5	1	-	-	-	260	-	-	6	1	-	-	4.0	100	15		
KTC9018S	BG □	30	20	※350	54	198	5	1	-	-	-	500	800	-	10	8	-	-	4.0	100	15		

Note) ◇ : Typ. ※ : Package Mounted on 99.5% Alumina 10×8×0.6mm

Small Signal Switching Transistors

Type No.	Complementary		Max. Ratings			hFE		VCE(sat) (V)			ft	t <sub>on</sub>	t <sub>off</sub>	t <sub>d</sub>	t <sub>r</sub>	t <sub>stg</sub>	t <sub>f</sub>	Package	Outline (Unit: mm)		
	Mark	Mark	V <sub>CEO</sub> (V)	I <sub>C</sub> (mA)	P <sub>C</sub> (mW)	Max.	V <sub>CE</sub> (V)	I <sub>C</sub> (mA)	Max.	I <sub>C</sub> (mA)	I <sub>B</sub> (mA)	Min.	Max.	Max.	Max.	Max.	Max.				
2N3906U	ZA	2N3904U	ZC	-40	-200	100	300	-1	-10	-0.25	-10	-1	250	-	-	35	35	225	75	USM	
2N3904U	ZC	2N3906U	ZA	40	200	100	300	1	10	0.2	10	1	300	-	-	35	35	200	50		
KTN2907U	ZD	KTN2222U	ZB	-40	-600	100	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30		
KTN2907AU	ZH	KTN2222AU	ZG	-60	-600	100	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30		
KTN2369AU	ZK	-	-	15	500	100	120	1	10	0.25	10	1	500	12	15	-	-	13	-		
KTN2369U	ZI	-	-	15	500	100	120	1	10	0.25	10	1	500	12	-	-	-	-	-		
KTN2222U	ZB	KTN2907U	ZD	30	600	100	300	10	150	0.3	150	15	300	-	-	10	25	225	60		
KTN2222AU	ZG	KTN2907AU	ZH	40	600	100	300	10	150	0.4	150	15	250	-	-	10	25	225	60		
2N3906V	ZA	2N3904V	ZC	-40	-200	100	300	-1	-0.1	-0.25	-10	-1	250	-	-	35	35	225	75	VSM	
2N3904V	ZC	2N3906V	ZA	40	200	100	300	1	10	0.2	10	1	300	-	-	35	35	200	50		
2N3906E	ZA	2N3904E	ZC	-40	-200	100	300	-1	-0.1	-0.25	-10	-1	250	-	-	35	35	225	75	ESM	
2N3904E	ZC	2N3906E	ZA	40	200	100	300	1	10	0.2	10	1	300	-	-	35	35	200	50		
KTN2222AE	ZG	KTN2907AE	ZH	40	600	100	300	10	150	0.4	150	15	250	-	-	10	25	225	60		
KTN2907AE	ZH	KTN2222AE	ZG	-60	-600	100	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30		
2N3906S	ZA	2N3904S	ZC	-40	-200	※350	300	-1	-0.1	-0.25	-10	-1	250	-	-	35	35	225	75	SOT-23	
2N3904S	ZC	2N3906S	ZA	40	200	※350	300	1	10	0.2	10	1	300	-	-	35	35	200	50		
KTN2907S	ZD	KTN2222S	ZB	-40	-600	※350	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30		
KTN2907AS	ZH	KTN2222AS	ZG	-60	-600	※350	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30		
KTN2369S	ZI	-	-	15	500	※350	120	1	10	0.25	10	1	-	12	-	-	-	-	-		
KTN2369AS	ZK	-	-	15	500	※350	120	1	10	0.25	10	1	-	12	15	-	-	13	-		
KTN2222S	ZB	KN2907S	ZDA	30	600	※350	300	10	150	0.4	150	15	250	-	-	10	25	225	60		
KTN2222AS	ZG	KTN2907AS	ZH	40	600	※350	300	10	150	0.3	150	15	300	-	-	10	25	225	60		

Note) ※ : Package Mounted on 99.5% Alumina 10×8×0.6mm

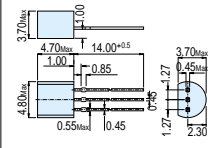
Darlington Power Transistors

Type No.	Complementary	Max. Ratings			hFE			VCE(sat) (V)			fr (MHz)			Package	Outline (Unit: mm)
		V <sub>CEO</sub> (V)	I <sub>C</sub> (mA)	P <sub>C</sub> (mW)	Min.	V <sub>CE</sub> (V)	I <sub>C</sub> (mA)	Max.	I <sub>C</sub> (mA)	I <sub>B</sub> (mA)	Min.	V <sub>CE</sub> (V)	I <sub>C</sub> (mA)		
MJD117	MJD112	-100	-2A	20W	1000	-3	-2A	-2	-2A	-8	25	-10	-750	DPAK	
MJD112	MJD117	100	2A	20W	1000	3	2A	2	2A	8	25	10	750		

Small Signal General Purpose Transistors

Type No.	Complementary	Max. Ratings			hFE				VCE(sat) (V)			fr (MHz)		Package	Outline (Unit: mm)		
		VCE0 (V)	IC (mA)	Pc (mW)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	Typ.			VCE (V)	IC (mA)
BC309	BC239	-20	-50	625	180	800	-5	-2	-0.2	-10	-0.5	-	200	-5	-10		
BC308	BC238	-25	-100	625	120	800	-5	-2	-0.6	-100	-5	-	200	-5	-10		
BC328	BC338	-25	-800	625	100	630	-1	-100	-0.7	-500	-50	-	100	-5	-10		
BC558	BC548	-30	-100	625	110	800	-5	-2	-0.65	-100	-5	-	150	-5	-10		
BC559	BC549	-30	-100	625	110	800	-5	-2	-0.6	-100	-5	-	300	-5	-10		
BC307	BC237	-45	-100	625	120	460	-5	-2	-0.6	-100	-5	-	200	-5	-10		
BC557	BC547	-45	-100	625	110	800	-5	-2	-0.65	-100	-5	-	150	-5	-10		
BC560	BC550	-45	-100	625	110	800	-5	-2	-0.6	-100	-5	-	300	-5	-10		
BC327	BC337	-45	-800	625	100	630	-1	-100	-0.7	-500	-50	-	100	-5	-10		
BC638	BC637	-60	-500	625	40	160	-2	-150	-0.5	-500	-50	-	200	-2	-50		
BC556	BC546	-65	-100	625	110	450	-5	-2	-0.65	-100	-5	-	150	-5	-10		
BC239	BC309	20	50	625	180	800	5	2	0.2	10	0.5	150	250	5	10		
BC238	BC308	20	100	625	120	800	5	2	0.6	100	5	150	250	5	10		
BC338	BC328	25	800	625	100	630	1	100	0.7	500	50	-	100	5	10		
BC548	BC558	30	100	625	110	800	5	2	0.6	100	5	-	150	5	10		
BC549	BC559	30	100	625	110	800	5	2	0.6	100	5	-	300	5	10		
BC237	BC307	45	100	625	120	460	5	2	0.6	100	5	150	250	5	10		
BC547	BC557	45	100	625	110	800	5	2	0.6	100	5	-	150	5	10		
BC550	BC560	45	100	625	110	800	5	2	0.6	100	5	-	300	5	10		
BC337	BC327	45	800	625	100	630	1	100	0.7	500	50	-	100	5	10		
BC637	BC638	60	500	625	40	160	2	150	0.5	500	50	-	200	2	50		
BC546	BC556	65	100	625	110	450	5	2	0.6	100	5	-	150	5	10		
MPS8550	MPS8050	-25	-1.5A	625	85	300	-1	-100	-0.5	-800	-80	100	200	-10	-50		
MPSA55	MPSA05	-60	-500	625	100	-	-1	-10	-0.25	-100	-10	50	-	-1	-100		
MPS751	MPS651	-60	-1A	625	60	200	-2	-50	-0.7	-500	-50	-	150	-10	-50		
MPSA56	MPSA06	-80	-500	625	100	-	-1	-10	-0.25	-100	-10	50	-	-1	-100		
MPS8050	MPS8550	25	1.5A	625	85	300	1	100	0.5	800	80	100	190	10	50		
MPS651	MPS751	60	1A	625	100	320	2	50	0.5	500	50	-	150	10	50		
MPSA06	MPSA56	80	500	625	100	-	1	10	0.25	100	10	100	-	2	10		
MPSA05	MPSA55	60	500	625	100	-	1	10	0.25	100	10	80	-	1	10		
KN3906	KN3904	-40	-200	625	60	-	-1	-0.1	-0.25	-10	-1	-	250	-20	-10		
KN2907	KN2222	-40	-600	625	35	-	-10	-0.1	-0.4	-150	-15	200	-	-20	-50		
KN4403	KN4401	-40	-600	625	30	-	-1	-0.1	-0.4	-150	-15	200	-	-10	-20		
KN2907A	KN2222A	-60	-600	625	75	-	-10	-0.1	-0.4	-150	-15	200	-	-20	-50		
KN2222	KN2907	30	600	625	35	-	10	0.1	0.4	150	15	250	-	20	20		
KN3904	KN3906	40	200	625	40	-	1	0.1	0.2	10	1	-	300	20	10		
KN2222A	KN2907A	40	600	625	35	-	10	0.1	0.3	150	15	300	-	20	20		
KN4401	KN4403	40	600	625	20	-	1	0.1	0.4	150	15	250	-	10	20		
KTC9012	KTC9013	-30	-500	625	64	246	-1	-50	-0.25	-100	-10	150	-	-6	-20		
KTC8550	KTC8050	-30	-800	625	100	300	-1	-50	-0.5	-500	-50	-	120	-5	-10		
KTC9015	KTC9014	-50	-150	625	60	600	-5	-1	-0.3	-100	-10	60	-	-10	-1		
KTC9013	KTC9012	30	500	625	64	246	1	50	0.25	100	10	140	-	6	20		
KTC8050	KTC8550	30	800	625	100	300	1	50	0.5	500	20	-	120	5	10		
KTC9014	KTC9015	50	150	625	60	1000	5	1	0.25	100	10	60	-	10	1		

TO-92



BJTs

■ Small Signal RF/ VHF/ UHF Transistors

Type No.	Max. Ratings			hFE			VCE(sat) (V)			fr (MHz)			Cob (pF)		NF (dB)		Gpe (dB)	Package	Outline (Unit: mm)			
	VCE0 (V)	Ic (mA)	Pc (mW)	Min.	Max.	VCE (V)	Ic (mA)	Max.	Ic (mA)	Ib (mA)	Min.	Typ.	Max.	VCE (V)	Ic (mA)	Max.				VCB (V)	Max.	f (MHz)
KTC9016	30	20	625	40	198	5	1	-	-	-	260	-	-	6	1	-	-	4	100k	15		
KTC9018	30	20	625	40	198	5	1	-	-	-	500	800	-	10	8	-	-	4	100k	15		
KTC9011	30	50	625	40	198	5	1	0.4	10	1	100	-	400	10	1	2.0 ◊	10	-	-	-		

Note) ◊ : Typ.

■ Small Signal Darlington Transistors

Type No.	Complementary	Max. Ratings			hFE			VCE(sat) (V)			fr (MHz)			Package	Outline (Unit: mm)
		VCE0 (V)	Ic (mA)	Pc (mW)	Min.	VCE (V)	Ic (mA)	Max.	Ic (mA)	Ib (mA)	Min.	VCE (V)	Ic (mA)		
MPSA62	-	-20 △	-500	625	20,000	-5	-10	-1	-10	-0.01	125	-5	-10		
MPSA63	MPSA13	-30 △	-500	625	5,000	-5	-10	-1.5	-100	-0.1	125	-5	-10		
MPSA64	MPSA14	-30 △	-500	625	10,000	-5	-10	-1.5	-100	-0.1	125	-5	-10		
MPSA77	MPSA27	-60 △	-500	625	10,000	-5	-100	-1.5	-100	-0.1	-	-	-		
MPSA13	MPSA63	30	500	625	5,000	5	10	1.5	100	0.1	125	5	10		
BC516	-	-30	-500	625	30,000	-2	-100	-1.0	-100	-0.1	220 ◊	-2	-100		
BC517	-	30 △	500	625	30,000	2	100	1	100	1	220 ◊	2	100		
MPSA14	MPSA64	30 △	500	625	10,000	5	10	1.5	100	0.1	125	5	10		
MPSA27	MPSA77	60 △	500	625	10,000	5	100	1.5	100	0.1	-	-	-		

Note) △ : VCES, ◊ : Typ.

■ Small Signal High Voltage Transistors

Type No.	Complementary	Max. Ratings			hFE			VCE(sat) (V)			fr (MHz)			Package	Outline (Unit: mm)			
		VCE0 (V)	Ic (mA)	Pc (mW)	Min.	Max.	VCE (V)	Ic (mA)	Max.	Ic (mA)	Ib (mA)	Min.	Typ.			Max.	VCE (V)	Ic (mA)
BF423	BF422	-250	-50	625	50	-	-20	-25	-0.6	-30	-5	60	-	-	-10	-10		
BF421	BF420	-300	-50	625	50	-	-20	-25	-0.6	-30	-5	60	-	-	-10	-10		
BF422	BF423	250	50	625	50	-	20	25	0.6	30	5	60	-	-	10	10		
BF420	BF421	300	50	625	50	-	20	25	0.6	30	5	60	-	-	10	10		
MPSA93	MPSA43	-200	-500	625	40	-	-10	-10	-0.5	-20	-2	50	-	-	-20	-10		
MPSA92	MPSA42	-300	-500	625	40	-	-10	-10	-0.5	-20	-2	50	-	-	-20	-10		
MPSA94	MPSA44	-400	-300	625	50	300	-10	-10	-0.5	-10	-1	-	-	-	-	-		
MPSA94A	-	-480	-300	625	50	300	-10	-10	-0.5	-20	-2	-	-	-	-	-		
MPSA43	MPSA93	200	500	625	40	-	10	10	0.5	20	2	50	-	-	20	10		
MPSA42	MPSA92	300	500	625	40	-	10	10	0.5	20	2	50	-	-	20	10		
MPSA45	-	350	300	625	50	200	10	10	0.5	10	1	-	-	-	-	-		
MPSA44	MPSA94	400	300	625	50	200	10	10	0.5	10	1	-	-	-	-	-		
2N5400	-	-120	-600	625	40	180	-5	-10	-0.2	-10	-1	100	-	400	-10	-10		
2N5401	-	-150	-600	625	60	240	-5	-10	-0.2	-10	-1	100	-	300	-10	-10		
2N5401C	-	-150	-600	625	60	240	-5	-10	-0.2	-10	-1	100	-	300	-10	-10		
2N5550	-	140	600	625	60	250	5	10	0.15	10	1	100	-	300	10	10		
2N5551	-	160	600	625	80	250	5	10	0.15	10	1	100	-	300	10	10		
2N5551C	-	160	600	625	80	250	5	10	0.15	10	1	100	-	300	10	10		

■ Small Signal Switching Transistors

Type No.	Complementary	Max. Ratings			hFE			VCE(sat) (V)			fr (MHz)	ton (ns)	toff (ns)	td (ns)	tr (ns)	tstg (ns)	tf (ns)	Package	Outline (Unit: mm)						
		VCE0 (V)	IC (mA)	PC (mW)	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)										Min.	Max.	Max.	Max.	Max.	Max.
2N3906	2N3904	-40	-200	625	300	-1	-10	-0.25	-10	-1	250	-	-	35	35	225	75								
2N3906C	2N3904C	-40	-200	625	300	-1	-10	-0.25	-10	-1	250	-	-	35	35	225	75								
2N3904	2N3906	40	200	625	300	1	10	0.2	10	1	300	-	-	35	35	200	50								
2N3904C	2N3906C	40	200	625	300	1	10	0.2	10	1	300	-	-	35	35	200	50								
KTH2369	-	15	500	625	120	1	10	0.25	10	1	500	12	-	-	-	-	-								
KTH2369A	-	15	500	625	120	1	10	0.25	10	1	500	12	15	-	-	13	-								
KTN2907	KTN2222	-40	-600	625	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30								
KTN2907A	KTN2222A	-60	-600	625	300	-10	-150	-0.4	-150	-15	200	45	100	10	40	80	30								
KTN2369	-	15	500	625	120	1	10	0.25	10	1	500	12	-	-	-	-	-								
KTN2369A	-	15	500	625	120	1	10	0.25	10	1	500	12	15	-	-	13	-								
KTN2222	KTN2907	30	600	625	300	10	150	0.4	150	15	250	-	-	10	25	225	60								
KTN2222A	KTN2907A	40	600	625	300	10	150	0.3	150	15	300	-	-	10	25	225	60								

■ General Purpose Power Transistors

Type No.	Complementary	Max. Ratings				hFE				VCE(sat) (V)				fr (MHz)				Package	Outline (Unit: mm)
		VCE0 (V)	IC (A)	PC★ (W)	PC☆ (W)	Min.	Max.	VCE (V)	IC (mA)	Max.	IC (mA)	IB (mA)	Min.	Typ.	VCE (V)	IC (mA)			
																	Min.		
TIP34C	TIP33C	-100	-10	-	80	55	160	-4	-2A	-1	-4A	-400	-	20	-12	-500			
TIP36C	TIP35C	-100	-25	-	125	55	160	-5	-1.5A	-1.8	-15A	-1.5A	3	-	-5	-1A			
TIP33C	TIP34C	100	10	-	80	55	160	4	2A	1	4A	400	-	20	12	500			
TIP35C	TIP36C	100	25	-	125	55	160	5	1.5A	1.8	15A	1.5A	3	-	5	1A			
BD135	BD136	45	1.5	1.25	10	40	250	2	150	0.5	500	50	-	190	5	50			
BD136	BD135	-45	-1.5	1.25	10	40	250	-2	-150	-0.5	-500	-50	-	160	-5	-50			
BD139	BD140	80	1.5	1.25	10	40	250	2	150	0.5	500	50	-	190	5	50			
BD140	BD139	-80	-1.5	1.25	10	40	250	-2	-150	-0.5	-500	-50	-	160	-5	-50			

Note) ★: Ta=25℃, ☆: Tc=25℃

■ Switching Power Transistors

Type No.	Complementary	Max. Ratings			hFE				VCE(sat) (V)			fr (MHz)	ton (μs)	tstg (μs)	tf (μs)	Package	Outline (Unit: mm)							
		VCE0 (V)	IC (A)	PC (W)	Min.	Max.	VCE (V)	IC (A)	Max.	IC (A)	IB (mA)							Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.
KTC3003	-	400	1.5	1.1	9	21	2	0.5	0.5	0.5	100	4	-	1.1	-	4	-	0.7						
MJE13003	-	400	1.5	20	9	21	2	0.5	0.5	0.5	100	4	-	1.1	-	4	-	0.7						
MJE13005F	-	400	4	30	18	39	5	1	0.5	1	200	4	-	0.8	-	4	-	0.9						
MJE13007F	-	400	8	40	15	50	5	2	1	2	400	4	-	1.6	-	3	-	0.7						
MJE13009F	-	400	12	50	8	28	5	5	1	5	1A	4	-	1.1	-	3	-	0.7						

■ Darlington Power Transistors

Type No.	Complementary	Max. Ratings			hFE			VCE(sat) (V)			Package	Outline (Unit: mm)		
		VCE0 (V)	IC (A)	PC☆ (W)	Min.	Typ.	Max.	VCE (V)	IC (A)	Max.			IC (A)	IB (mA)
MJD117L	MJD112L	-100	-2	20	1000	12000	-	-3	-2	-2	-2	-8		
MJD112L	MJD117L	100	2	20	1000	12000	-	3	2	2	2	8		

Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
2N2222/A	Motorola	KTN2222/A	2SA1150	Toshiba	KTA1272	2SA1510	Sanyo	KRA110S	2SB546A	NEC	KTB1369
2N2369/A	Motorola	KTN2369/A	2SA1151	NEC	KTA1266	2SA1511	Sanyo	KRA110M	2SB560	Sanyo	KTA1023
2N2906	Motorola	2N2906	2SA1156	NEC	KTA1277	2SA1518	Sanyo	KRA224S	2SB561	Hitachi	KTA1270
2N2907/A	Motorola	KTN2907/A	2SA1156	NEC	KTA1703	2SA1519	Sanyo	KRA223S	2SB562	Hitachi	KTA1273
2N3904	Motorola	2N3904	2SA1162	Toshiba	KTA1504S	2SA1520	Sanyo	KRA226S	2SB566	Hitachi	KTB1368
2N3906	Motorola	2N3906	2SA1173	NEC	KTA1660	2SA1521	Sanyo	KRA222S	2SB568	Hitachi	KTB1369
2N5400	Motorola	2N5400	2SA1175	NEC	KTA1267	2SA1522	Sanyo	KRA224M	2SB595	Toshiba	KTA1049
2N5401	Motorola	2N5401	2SA1179	Sanyo	KTA1504S	2SA1523	Sanyo	KRA223M	2SB596	Toshiba	KTB1368
2N5550	Motorola	2N5550	2SA1182	Toshiba	KTA1505S	2SA1524	Sanyo	KRA226M	2SB604	Matsushita	KTB1368
2N5551	Motorola	2N5551	2SA1184	Toshiba	KTA1659A	2SA1525	Sanyo	KRA222M	2SB624	NEC	KTA1298
2SA473	Toshiba	KTA1658	2SA1191	Hitachi	KTA1268	2SA1552	Sanyo	KTA1225D	2SB628	NEC	KTA1659A
2SA539	NEC	KTA1266	2SA1200	Toshiba	KTA1660	2SA1552	Sanyo	KTA1225L	2SB631K	Sanyo	KTB631K
2SA555	Fujitsu	KTA1266	2SA1201	Toshiba	KTA1661	2SA1559	Rohm	KTA1270	2SB646A	Hitachi	KTA1024
2SA562TM	Toshiba	KTA1270	2SA1202	Toshiba	KTA1662	2SA1563	Sanyo	KRA107S	2SB647/A	Hitachi	KTA1023
2SA564A	Matsushita	KTA1266	2SA1203	Toshiba	KTA1663	2SA1564	Sanyo	KRA107M	2SB649/A	Hitachi	KTA1700
2SA574	JRC	KTA1266	2SA1204	Toshiba	KTA1001	2SA1576	Rohm	KTA2014	2SB649A	Hitachi	KTA1700
2SA608	Sanyo	KTA1266	2SA1208	Sanyo	KTA1024	2SA1577	Rohm	KTA2015	2SB686	Toshiba	KTB688
2SA671	Hitachi	KTA1046	2SA1213	Toshiba	KTA1666	2SA1579	Rohm	KTA2017	2SB688	Toshiba	KTB688
2SA673	Hitachi	KTA1270	2SA1214	Toshiba	KTB1366	2SA1584	Rohm	KTA2017	2SB698	Sanyo	KTA1271
2SA683	Matsushita	KTA1273	2SA1220	NEC	KTA1704	2SA1586	Toshiba	KTA2014	2SB703	NEC	KTB1368
2SA684	Matsushita	KTA1281	2SA1222	NEC	KTA1275	2SA1587	Toshiba	KTA2017	2SB708	NEC	KTB1370
2SA715	Hitachi	KTA1658	2SA1225	Toshiba	KTA1225D	2SA1588	Toshiba	KTA2015	2SB709A	Matsushita	KTA1504S
2SA719	Matsushita	KTA1270	2SA1225	Toshiba	KTA1225L	2SA1589	Sanyo	KRA113S	2SB710	Matsushita	KTA1505S
2SA733	NEC	KTA1266	2SA1235	Mitsubishi	KTA1504S	2SA1590	Sanyo	KRA113M	2SB719	Hitachi	KTB1369
2SA738	Hitachi	KTA1658	2SA1241	Toshiba	KTA1718D	2SA1591	Sanyo	KRA106M	2SB720	Hitachi	KTB1369
2SA740	Toshiba	KTB1369	2SA1241	Toshiba	KTA1718L	2SA1597	Sanyo	KRA106S	2SB725	Matsushita	KTA1266
2SA769	Sanken	KTB1368	2SA1242	Toshiba	KTA1242L	2SA1603	Mitsubishi	KTA2014	2SB739	Hitachi	KTA1273
2SA771	Sanken	KTA1049	2SA1242	Toshiba	KTA1242D	2SA1606	Sanyo	KTA1659A	2SB746	Hitachi	KTA1270
2SA777	Matsushita	KTA1274	2SA1244	Toshiba	KTA1385D	2SA1608	NEC	KTA2015	2SB761/A	Matsushita	KTA1046
2SA812	NEC	KTA1504S	2SA1244	Toshiba	KTA1385L	2SA1611	NEC	KTA2014	2SB762	Matsushita	KTA1368
2SA813	NEC	KTA1504S	2SA1246	Sanyo	KTC3198	2SA1612	NEC	KTA2017	2SB764	Sanyo	KTA1281
2SA817A	Toshiba	KTA1274	2SA1252	Sanyo	KTA1504S	2SA1622	Sanyo	KTA2014	2SB766	Matsushita	KTA1663
2SA839	Toshiba	KTB1369	2SA1264N	Toshiba	KTB688	2SA1625	NEC	KTA1277	2SB767	Matsushita	KTA1662
2SA843	Matsushita	KTB1369	2SA1282A	Mitsubishi	KTA1273	2SA1647	NEC	KTA1042L	2SB772	Sanyo	KTB772
2SA844	Hitachi	KTA1266	2SA1284	Mitsubishi	KTA1274	2SA1653	Sanyo	KRA119S	2SB776	Sanyo	KTB688
2SA854	Rohm	KTA1270	2SA1285	Mitsubishi	KTA1024	2SA1654	Sanyo	KRA119M	2SB783	Hitachi	KTB1368
2SA896	Sony	KTA1024	2SA1286	Mitsubishi	KTA1273	2SA1655	Sanyo	KRA101S	2SB789A	Matsushita	KTA1661
2SA916	Hitachi	KTA1024	2SA1296	Toshiba	KTA1273	2SA1656	Sanyo	KRA101M	2SB798	NEC	KTA1663
2SA917	Sony	KTA1024	2SA1304	Toshiba	KTB1369	2SA1676	Sanyo	KRA304	2SB805	NEC	KTA1661
2SA928	Sony	KTA1273	2SA1306	Toshiba	KTA1659A	2SA1677	Sanyo	KRA303	2SB807	Matsushita	KTA1660
2SA933	Rohm	KTA1266	2SA1309A	Matsushita	KTA1267	2SA1678	Sanyo	KRA302	2SB808	Sanyo	KTA1021
2SA933S	Rohm	KTA1267	2SA1312	Toshiba	KTA1517	2SA1689	Sanyo	BF421	2SB810	NEC	KTA1271
2SA934	Rohm	KTA1273	2SA1314	Toshiba	KTA1001	2SA1694	Sanken	KTB688	2SB814	Matsushita	KTA1517
2SA935	Rohm	KTA1023	2SA1317	Sanyo	KTA1267	2SA1694	Sanken	KTA1940	2SB815	Sanyo	KTA1298
2SA940	Toshiba	KTA1369	2SA1318	Sanyo	KTA1266	2SA1695	Sanken	KTA1695	2SB816	Sanyo	KTB688
2SA949	Toshiba	KTA1024	2SA1335	Rohm	KTA1268	2SA1706	Sanyo	KTA1281	2SB817	Sanyo	KTB817
2SA950	Toshiba	KTA1271	2SA1338	Sanyo	KTA1505S	2SA1721	Toshiba	KTA1073T	2SB834	Toshiba	KTA1046
2SA952	NEC	KTA1271	2SA1341	Sanyo	KRA104S	2SA1722	Sanyo	KRA318	2SB849	NEC	KTB688
2SA957	Sanken	KTB1369	2SA1342	Sanyo	KRA103S	2SA1727	Rohm	KTA1703	2SB856	Hitachi	KTA1046
2SA958	Sanken	KTB1369	2SA1343	Sanyo	KRA109S	2SA1742	NEC	KTB1370	2SB858	Hitachi	KTB1368
2SA965	Toshiba	KTA1023	2SA1344	Sanyo	KRA102S	2SA1745	Sanyo	KTA2015	2SB861	Hitachi	KTB1369
2SA966	Toshiba	KTA1273	2SA1345	Sanyo	KRA104M	2SA1767	Matsushita	BF421	2SB864	Hitachi	KTA1266
2SA968	Toshiba	KTA1659	2SA1346	Sanyo	KRA103M	2SA1774	Rohm	KTA2014E	2SB874	Hitachi	KTA1715
2SA968A	Toshiba	KTA1659A	2SA1347	Sanyo	KRA109M	2SA1774H	Rohm	KTA2014E	2SB887	Sanyo	KTB2510
2SA970	Toshiba	KTA1268	2SA1348	Sanyo	KRA102M	2SA1775	Rohm	KTA1703	2SB890	Rohm	KTA200
2SA973	Matsushita	KTA1266	2SA1358	Toshiba	KTB631K	2SA1788	Rohm	KTB778	2SB892	Sanyo	KTA1281
2SA984	Sanyo	MPSA06	2SA1360	Toshiba	KTA1360	2SA1797	Rohm	KTA1666	2SB899	Hitachi	KTA1046
2SA985A	NEC	KTA1659A	2SA1362	Toshiba	KTA1298	2SA1832	Toshiba	KTA2014E	2SB901	Hitachi	KTB1368
2SA989	NEC	KTA1266	2SA1363	Mitsubishi	KTA1001	2SA1832F	Toshiba	KTA2014E	2SB920/L	Sanyo	KTA1049
2SA990	NEC	KTA1266L	2SA1366	Rohm	KTA1505S	2SA1832FT	Toshiba	KTA2014V	2SB940A	Matsushita	KTB1369
2SA992	NEC	KTA1268	2SA1368	Mitsubishi	KTA1662	2SA1834	Rohm	KTA1834D	2SB941	Matsushita	KTA1046
2SA1011	Sanyo	KTA1659A	2SA1370L	Sanyo	KTA1070	2SA1859A	Sanken	KTB1369	2SB942/A	Matsushita	KTB1368
2SA1013	Toshiba	KTA1275	2SA1381	Sanyo	KTA1381	2SA1862	Rohm	KTA1862D	2SB946	Matsushita	KTB1370
2SA1015	Toshiba	KTA1266	2SA1384	Rohm	KTA1384D	2SA1868	Matsushita	KTA1277	2SB956	Matsushita	KTA1663
2SA1016K	Sanyo	KTA1268	2SA1385	NEC	KTA1385D	2SA1873	Toshiba	KTA501U	2SB965	Hitachi	KTB688
2SA1019	Sanyo	KTA1024	2SA1400	NEC	KTA1277	2SA1900	Rohm	KTA1666	2SB966	Hitachi	KTB688
2SA1020	Toshiba	KTA1281	2SA1408	Toshiba	KTA1700	2SA1924	Toshiba	KTA1703	2SB984	NEC	KTA1275
2SA1030	Hitachi	KTA1266	2SA1412-Z	NEC	KTA1862D	2SA1940	Toshiba	KTA1940	2SB1010	Rohm	KTA1273
2SA1032	Hitachi	KTA1266L	2SA1416	Sanyo	KTA1661	2SA1952	Rohm	KTA1385D	2SB1015	Toshiba	KTA1046
2SA1036K	Rohm	KTA1505S	2SA1470	Sanyo	KTB1370	2SA1962	Toshiba	KTA1962	2SB1016	Toshiba	KTA1049
2SA1037K	Rohm	KTA1504S	2SA1490	Sanken	KTB688	2SA1993E	Mitsubishi	KTA1266	2SB1017	Toshiba	KTB1368
2SA1037AK	Rohm	KTA1504S	2SA1492	Sanken	KTA1962	2SA2029	Rohm	KTA2014V	2SB1018	Toshiba	KTB1370
2SA1038	Rohm	KTA1268	2SA1496	Sanyo	KRA111S	2SA2030	Rohm	KTA2012V	2SB1025	Hitachi	KTA1661
2SA1048	Toshiba	KTA1267	2SA1497	Sanyo	KRA111M	2SB434	Toshiba	KTA1046	2SB1030	Matsushita	KTA1271
2SA1049	Toshiba	KTA1268	2SA1498	Matsushita	KTA1703	2SB507	Sanyo	KTA1046	2SB1032K	Hitachi	KTB2510
2SA1069	NEC	KTA1049	2SA1502	Sanyo	KRA118S	2SB512	Matsushita	KTA1046	2SB1033	Rohm	KTA1046
2SA1111	Matsushita	KTA1659A	2SA1503	Sanyo	KRA118M	2SB521	Sony	KTA1049	2SB1053	Matsushita	KTA1504S
2SA1121	Hitachi	KTA1505S	2SA1507	Sanyo	KTA1700	2SB528	Mitsubishi	KTB1369	2SB1063	Matsushita	KTA1049
2SA1127	Matsushita	KTA1266L	2SA1508	Sanyo	KRA114S	2SB544	Sanyo	KTA1273	2SB1069	Matsushita	KTA1658
2SA1145	Toshiba	KTA1024	2SA1509	Sanyo	KRA114M	2SB546	NEC	KTB1369	2SB1085A	Rohm	KTA1659A

Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
2SB1095	NEC	KTA1049	2SC1173	Toshiba	KTC4369	2SC2613	Hitachi	KTC4419	2SC3396	Sanyo	KRC103S
2SB1096	NEC	KTB1369	2SC1213	Hitachi	KTC3202	2SC2618	Hitachi	KTC3876S	2SC3397	Sanyo	KRC109S
2SB1111	NEC	KTA1715	2SC1213A	Hitachi	KTC200	2SC2620	Hitachi	KTC3880S	2SC3398	Sanyo	KRC102S
2SB1114	NEC	KTA1001	2SC1342	Hitachi	KTC3194	2SC2621	Sanyo	KTC2801	2SC3399	Sanyo	KRC104M
2SB1119	Sanyo	KTA1664	2SC1371	Matsushita	KTC3202	2SC2655	Toshiba	KTC3209	2SC3400	Sanyo	KRC103M
2SB1120	Sanyo	KTA1001	2SC1384	Mitsubishi	KTC3209	2SC2668	Toshiba	KTC3195	2SC3401	Sanyo	KRC109M
2SB1123	Sanyo	KTA1666	2SC1398	Matsushita	KTC4369	2SC2670	Toshiba	KTC3191	2SC3402	Sanyo	KRC102M
2SB1123	Sanyo	KTA1666	2SC1419	Hitachi	KTC2026	2SC2688	NEC	KTC4217	2SC3421	Toshiba	KTD600K
2SB1132	Rohm	KTA1664	2SC1505	NEC	KTC3208	2SC2703	Toshiba	KTD863	2SC3423	Toshiba	KTC3423
2SB1132	Rohm	KTA1664	2SC1569	Toshiba	KTC3208	2SC2705	Toshiba	KTC3206	2SC3440	Mitsubishi	KTC3265
2SB1142	Sanyo	KTA1715	2SC1573	Matsushita	KTC3207	2SC2712	Toshiba	KTC3875S	2SC3444	Mitsubishi	KTC4378
2SB1151	NEC	KTB1151	2SC1623	NEC	KTC3875S	2SC2713	Toshiba	KTC3911S	2SC3446	Sanyo	KTC4520F
2SB1181	Rohm	KTA1045D	2SC1674	NEC	KTC3194	2SC2714	Toshiba	KTC3880S	2SC3447	Sanyo	KTC4521F
2SB1182	Rohm	KTA1718D	2SC1675	NEC	KTC3192	2SC2715	Toshiba	KTC4079	2SC3468	Sanyo	KTC3207
2SB1184	Rohm	KTA1040D	2SC1684	Matsushita	KTC3190	2SC2724	Mitsubishi	KTC3121	2SC3503	Sanyo	KTC3503
2SB1186A	Rohm	KTA1659A	2SC1685	Matsushita	KTC3198	2SC2732	Hitachi	KTC3882	2SC3518	NEC	KTC5103D
2SB1187	Rohm	KTA1046	2SC1730	NEC	KTC2347	2SC2736	Hitachi	KTC3121	2SC3518-Z	NEC	KTC5103D
2SB1188	Rohm	KTA1663	2SC1740	Rohm	KTC3198	2SC2755	NEC	KTC3880S	2SC3545K	NEC	KTC3121
2SB1189	Rohm	KTA1661	2SC1740S	Rohm	KTC3199	2SC2776	Hitachi	KTC3879S	2SC3570	NEC	KTC4419
2SB1197K	Rohm	KTA1298	2SC1741	Rohm	KTC3202	2SC2784P	NEC	KTC3200	2SC3620	Toshiba	KTC2801
2SB1201	Sanyo	KTA1718L	2SC1741S	Rohm	KTC1020	2SC2785	NEC	KTC3199	2SC3621	Toshiba	KTC2800
2SB1201	Sanken	KTA1718D	2SC1809	Rohm	KTC3194	2SC2786	NEC	KTC3195	2SC3623	NEC	KTC3113
2SB1202	Sanyo	KTA1040D	2SC1815	Toshiba	KTC3198	2SC2812	Sanyo	KTC3875S	2SC3624	Toshiba	KTC3295
2SB1202	Sanyo	KTA1040L	2SC1826	Sanken	KTD2026	2SC2814	Sanyo	KTC3881S	2SC3631	NEC	KTC3631D
2SB1203	Sanyo	KTA1385D	2SC1841	NEC	KTC3200	2SC2839	Sanyo	KTC3194	2SC3691	NEC	KTC2028
2SB1203	Sanyo	KTA1385L	2SC1845	NEC	KTC3200	2SC2856	Hitachi	KTC3200	2SC3830	Sanken	KTC4521F
2SB1205	Sanyo	KTA1242D	2SC1881	Hitachi	KTD2424	2SC2859	Toshiba	KTC3876S	2SC3856	Sanken	KTC5242
2SB1205	Sanyo	KTA1242L	2SC1905	Matsushita	KTC3208	2SC2873	Toshiba	KTC4379	2SC3859	Sanyo	KRC111S
2SB1212	Rohm	KTA1275	2SC1913	Matsushita	KTD2061	2SC2873	Toshiba	KTC4379	2SC3860	Sanyo	KRC111M
2SB1216	Sanyo	KTA1042D	2SC1921	Hitachi	KTC3229	2SC2878	Toshiba	KTC2874	2SC3863	Sanyo	KRC118S
2SB1216	Sanyo	KTA1042L	2SC1923	Toshiba	KTC3194	2SC2880	Toshiba	KTC4372	2SC3864	Sanyo	KRC118M
2SB1218	Matsushita	KTA1504S	2SC1959	Toshiba	KTC3202	2SC2881	Toshiba	KTC4373	2SC388A	Toshiba	KTC3197
2SB1218A	Matsushita	KTA2014	2SC1983	Sanken	KTD2092	2SC2882	Toshiba	KTC4374	2SC3898	Sanyo	KRC114S
2SB1219	Matsushita	KTA2015	2SC2001	NEC	KTC3203	2SC2883	Toshiba	KTC4375	2SC3899	Sanyo	KRC114M
2SB1220	Matsushita	KTA2017	2SC2060	Rohm	KTD863	2SC2884	Toshiba	KTC4376	2SC3900	Sanyo	KRC110S
2SB1234	Sanyo	KTB1234T	2SC2061	Rohm	KTC1006	2SC2982	Toshiba	KTC4377	2SC3901	Sanyo	KRC110M
2SB1237	Rohm	KTA1273	2SC2073	Toshiba	KTD2061	2SC2983	Toshiba	KTC2983D	2SC3906K	Rohm	KTC3911S
2SB1240	Rohm	KTA1281	2SC2075	Toshiba	보수배지	2SC2983	Toshiba	KTC2983L	2SC3912	Sanyo	KRC244S
2SB1261	NEC	KTA1040L	2SC2078	Sanyo	보수배지	2SC3068	Sanyo	KTC3112	2SC3913	Sanyo	KRC243S
2SB1261-Z	NEC	KTA1040D	2SC2120	Toshiba	KTC3203	2SC3072	Toshiba	KTC3072D	2SC3914	Sanyo	KRC246S
2SB1274	Sanyo	KTA1046	2SC2167	Sanken	KTD2061	2SC3072	Toshiba	KTC3072L	2SC3915	Sanyo	KRC242S
2SB1275	Rohm	KTA1225D	2SC2168	Sanken	KTD2061	2SC3074	Toshiba	KTC5103L	2SC3916	Sanyo	KRC244M
2SB1290	Rohm	KTB1370	2SC2210	Sanyo	KTC3193	2SC3074	Toshiba	KTC5103D	2SC3917	Sanyo	KRC243M
2SB1293	Rohm	KTA1049	2SC2228	Sanyo	KTC1026	2SC3076	Toshiba	KTC2815L	2SC3918	Sanyo	KRC246M
2SB1294	Rohm	KTA1049	2SC2229	Toshiba	KTC3206	2SC3112	Toshiba	KTC3112	2SC3919	Sanyo	KRC242M
2SB1315	NEC	KTB688	2SC2230	Toshiba	KTC1026	2SC3113	Toshiba	KTC3113	2SC3920	Sanyo	KTC2800
2SB1316	Rohm	MJD117	2SC2233	Toshiba	KTC1003	2SC3121	Toshiba	KTC3121	2SC3930	Matsushita	KTC4079
2SB1328	Rohm	KTA1700	2SC2235	Toshiba	KTC1027	2SC3124	Toshiba	KTC3882	2SC3931	Matsushita	KTC4081
2SB1364	Hitachi	KTA1663	2SC2236	Toshiba	KTC3205	2SC3125	Toshiba	KTC3881S	2SC3932	Matsushita	KTC4021
2SB1371	Matsushita	KTB688	2SC2238	Toshiba	KTC4370A	2SC3134	Sanyo	KTC3875S	2SC3938	Matsushita	KTC4076
2SB1374	Rohm	KTA1281	2SC2239	Toshiba	KTD2061	2SC3142	Sanyo	KTC3880S	2SC3969	Rohm	KTC4520F
2SB1375	Toshiba	KTA1046	2SC2240	Toshiba	KTC3200	2SC3142A	Mitsubishi	KTC3205	2SC4002	Sanyo	MPSA44
2SB1385	NEC	KTA1385L	2SC2274	Sanyo	KTC200	2SC3181N	Toshiba	KTD718	2SC4008	Rohm	KTD2060
2SB1409L	Hitachi	KTA1225L	2SC2275A	NEC	KTC4370A	2SC3187	Matsushita	KTC3207	2SC4047	Sanyo	KRC107S
2SB1409S	Hitachi	KTA1225D	2SC2295	Matsushita	KTC3879S	2SC3225	Toshiba	KTC3209	2SC4048	Sanyo	KRC107M
2SB1412	Rohm	KTA1242D	2SC2320/L	Mitsubishi	KTC3198/L	2SC3243	Mitsubishi	KTD863	2SC4051	Shindengen	KTC4520F
2SB1417	Matsushita	KTA1046	2SC2344	Sanyo	KTD2061	2SC3246	Mitsubishi	KTC3209	2SC4053	Shindengen	KTC4521F
2SB1421	Matsushita	KTB688	2SC2347	Toshiba	KTC2347	2SC3247	Mitsubishi	KTD863	2SC4061K	Rohm	MMBTA42
2SB1455	Sanyo	KTA1049	2SC2349	Toshiba	KTC2347	2SC3248	Mitsubishi	KTC1026	2SC4062	NEC	KTD1937
2SB1475	NEC	KTA2015	2SC2362	Sanyo	KTC3200	2SC3249	Mitsubishi	KTC3207	2SC4068	Matsushita	KTC4080
2SB1530	Hitachi	KTB1369	2SC2371	NEC	KTC2801	2SC3252	Sanyo	KTC4369	2SC4081	Rohm	KTC4075
2SB1560	Sanken	KTB2510	2SC2383	Toshiba	KTC3228	2SC3258	Toshiba	KTC2028	2SC4082	Rohm	KTC4082
2SB1561	Rohm	KTA1666	2SC2389	Rohm	KTC3200	2SC3266	Toshiba	KTC3205	2SC4097	Rohm	KTC4076
2SB1565	Rohm	KTA1046	2SC2404	Matsushita	KTC3880S	2SC3269	Rohm	KTC3207	2SC4099	Rohm	KTC4080
2SB1650	Rohm	KTA1700	2SC2410	Rohm	KTC3192	2SC3271F	Rohm	KTC2801	2SC4100	Rohm	KTC4021
2SB1725	Sanken	KTB1370	2SC2411K	Rohm	KTC3876S	2SC3295	Toshiba	KTC3295	2SC4102	Rohm	KTC4077
2SB1859A	Sanken	KTB1369	2SC2412K	Rohm	KTC3875S	2SC3296	Toshiba	KTD2061	2SC4116	Toshiba	KTC4075
2SB1891	Toshiba	KTA1715	2SC2413K	Rohm	KTC3879S	2SC3297	Toshiba	KTC4369	2SC4117	Toshiba	KTC4077
2SC380TM	Toshiba	KTC3192	2SC2458	Toshiba	KTC3199	2SC3298	Toshiba	KTC4370A	2SC4118	Toshiba	KTC4076
2SC382TM	Toshiba	KTC3197	2SC2459	Toshiba	KTC3200	2SC3303	Toshiba	KTC2022D	2SC4120	Sanyo	KRC113S
2SC458	Hitachi	KTC3190	2SC2462	Hitachi	KTC3875S	2SC3303	Toshiba	KTC2022L	2SC4121	Sanyo	KRC113M
2SC460	Hitachi	KTC3192	2SC2480	Matsushita	KTC3882	2SC3311	Matsushita	KTC3191	2SC4129	Rohm	MJE13007F
2SC535	Hitachi	KTC3194	2SC2482	Toshiba	KTC3207	2SC3313	Matsushita	KTC3193	2SC4129	Rohm	KTC4419
2SC536	Sanyo	KTC3198	2SC2500	Toshiba	KTC3226	2SC3315	Matsushita	KTC3195	2SC4133	Sanyo	KRC106M
2SC789	Toshiba	KTD2060	2SC2501	Shindengen	KTC4419	2SC3326	Toshiba	KTD1304	2SC4137	Rohm	KTC3114
2SC790	Toshiba	KTC2026	2SC2517	NEC	KTC2028	2SC3327	Toshiba	KTD1303	2SC4146	Sanyo	KRC106S
2SC829	Matsushita	KTC3192	2SC2535	Toshiba	KTC4419	2SC3330	Sanyo	KTC3199/L	2SC4154	Mitsubishi	KTC4075
2SC945	NEC	KTC3198	2SC2542	Fuji	KTC4419	2SC3331	Sanyo	KTC3198	2SC4155	Mitsubishi	KTC4075
2SC1047	Matsushita	KTC3194	2SC2553	Toshiba	KTC4419	2SC3382	Sanyo	KTC3198L	2SC4177	NEC	KTC4075
2SC1061	Hitachi	KTC2026	2SC2610	Hitachi	KTC3207	2SC3395	Sanyo	KRC104S	2SC4178	NEC	KTC4080

Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
2SC4179	NEC	KTC4079	2SC5248	Rohm	KTD2061	2SD722	Sanken	KTD1415	2SD1423	Matsushita	KTC1020
2SC4180	NEC	KTC4077	2SC5658	Rohm	KTC4075V	2SD723	Hitachi	KTD2060	2SD1424	Matsushita	KTC3199
2SC4181	NEC	KTC4075	2SC5663	Rohm	KTC4072V	2SD731	Matsushita	KTD718	2SD1436K	Hitachi	KTD1510
2SC4182	NEC	KTC4082	2SC5738	Toshiba	KTC3536T	2SD734	Sanyo	KTC3208	2SD1491	NEC	KTC2814
2SC4184	NEC	KTC4021	2SD57	Mitsubishi	KTC2028	2SD743/A	NEC	KTC2028	2SD1504	Hitachi	KTC3204
2SC4207	Sanyo	KTC2983D	2SD58	Mitsubishi	KTC2028	2SD759	Hitachi	KTC4370A	2SD1505	Rohm	KTC2026
2SC4207	Sanyo	KTC2983L	2SD78	NEC	KTC2028	2SD760	Hitachi	KTC4370A	2SD1562A	Rohm	KTC4370A
2SC4211	Sanyo	KTC3875S	2SD122	Hitachi	KTD2060	2SD761	Sanyo	KTC4370A	2SD1582	NEC	KTD1028
2SC4215	Toshiba	KTC4080	2SD141	NEC	KTC2028	2SD768	Hitachi	KTD1415	2SD1585	NEC	KTC2026
2SC4216	Sanyo	KRC110M	2SD142	NEC	KTC2028	2SD795	NEC	KTC2026	2SD1586	NEC	KTC2028
2SC4217	Sanyo	KTC4217	2SD143	NEC	KTC2028	2SD837	Matsushita	KTD1414	2SD1587	NEC	KTD2061
2SC4239	Matsushita	KTC3121	2SD144	NEC	KTC2028	2SD856/A	Matsushita	KTC2026	2SD1614	NEC	KTC4377
2SC4246	Toshiba	KTC4021	2SD146	Fuji	KTC2028	2SD857/A	Matsushita	KTD2020	2SD1615	NEC	KTC4378
2SC4250	Toshiba	KTC4021	2SD147	Fuji	KTC2028	2SD863	Sanyo	KTD863	2SD1619	Sanyo	KTC4377
2SC4251	Toshiba	KTC4082	2SD148	Fuji	KTC2028	2SD874	Matsushita	KTC4375	2SD1622	Sanyo	KTC4378
2SC4253	Toshiba	KTC4081	2SD150	NEC	KTC2028	2SD874A	Matsushita	KTC4378	2SD1623	Sanyo	KTC4379
2SC4258	Mitsubishi	KTC4080	2SD152	NEC	KTD2060	2SD879	Sanyo	KTD1146	2SD1664	Rohm	KTC4375
2SC4259	Hitachi	KTC4080	2SD154	NEC	KTD2060	2SD880	Toshiba	KTC2026	2SD1682	Rohm	KTC2814
2SC4262	Hitachi	KTC4021	2SD155	NEC	KTD2060	2SD882	Sanyo	KTD882	2SD1691	NEC	KTD1691
2SC4265	Hitachi	KTC4081	2SD234	Toshiba	KTC2028	2SD887	Matsushita	KTC2026	2SD1733	Rohm	KTC2025D
2SC4269	Sanyo	KTC3121	2SD235	Toshiba	KTC2028	2SD896	Sanyo	KTD718	2SD1758	Rohm	KTC3205
2SC4270	Sanyo	KTC3882	2SD254	NEC	KTC2028	2SD921	Fuji	KTD921	2SD1758	Rohm	KTC2815D
2SC4331	NEC	KTC2022L	2SD255	NEC	KTC2028	2SD965	Matsushita	KTD1146	2SD1760	Rohm	KTC2020L
2SC4338	NEC	MJD112L	2SD256	Sanken	KTC2028	2SD966	Matsushita	KTD1145	2SD1760	Rohm	KTC2020D
2SC4362	Sanyo	KRC101S	2SD288	NEC	KTC2028	2SD968	Matsushita	KTC4373	2SD1763A	Rohm	KTC4370A
2SC4363	Sanyo	KRC101M	2SD289	NEC	KTC2028	2SD972	Sanken	KTD1413	2SD1767	Rohm	KTC4373
2SC4397	Sanyo	KRC403	2SD291	Sony	KTC2028	2SD999	NEC	KTC4375	2SD1770	Matsushita	KTD2061
2SC4398	Sanyo	KRC402	2SD292	Sony	KTC2028	2SD1000	NEC	KTC4378	2SD1772	Matsushita	KTD2061
2SC4400	Sanyo	KTC4080	2SD313	Sanyo	KTC2028	2SD1001	NEC	KTC4374	2SD1778	Rohm	KTD2060
2SC4406	Sanyo	KTC4021	2SD314	Sanyo	KTC2028	2SD1007	NEC	KTC4374	2SD1781	Rohm	KTC3265
2SC4413	Sanyo	KTC4075	2SD315	Sanyo	KTD2060	2SD1010	Matsushita	KTC3112	2SD1801	Sanyo	KTC2815D
2SC4418	Sanken	KTC4419	2SD317/A	Matsushita	KTD2060	2SD1020	NEC	KTC3204	2SD1801	Sanyo	KTC2815L
2SC4448	Toshiba	KTC1001	2SD318/A	Matsushita	KTD2060	2SD1029	Sanyo	KTD2060	2SD1802	Sanyo	KTC2020D
2SC4467	Sanken	KTD718	2SD325	Sanyo	KTC4369	2SD1047	Sanyo	KTD1047	2SD1802	Sanyo	KTC2020D
2SC4467	Sanken	KTC5197	2SD342	Sony	KTC2028	2SD1048	Sanyo	KTC3265	2SD1802	Sanyo	KTC2020L
2SC4468	Sanken	KTC4468	2SD343	Sony	KTC2028	2SD1052	Toshiba	KTC2026	2SD1803	Sanyo	KTC5103D
2SC4497	Toshiba	KTC3207T	2SD344	Sony	KTC2028	2SD1060	Sanyo	KTC2028	2SD1803	Sanyo	KTC5103D
2SC4506	Rohm	KTC3229	2SD345	Sony	KTC2028	2SD1110	NEC	KTD718	2SD1803	Sanyo	KTC5103L
2SC4507	Fuji	KTC4419	2SD346	Sony	KTD2060	2SD1119	Matsushita	KTC4377	2SD1805	Sanyo	KTC3072D
2SC4511	Sanken	KTC2028	2SD347	Sony	KTD2060	2SD1128	Fuji	KTD2066	2SD1805	Sanyo	KTC3072L
2SC4512	Sanken	KTC2028	2SD359	Mitsubishi	KTC2028	2SD1131	Hitachi	KTD2060	2SD1816	Sanyo	KTC2022D
2SC4533	Matsushita	KTC4520F	2SD360	Mitsubishi	KTC2028	2SD1132	Hitachi	KTD2060	2SD1816	Sanyo	KTC2022L
2SC4544	Toshiba	KTC3229	2SD361	Mitsubishi	KTC2028	2SD1133	Hitachi	KTD2060	2SD1819A	Matsushita	KTC4075
2SC4546	Sanken	MJE13007F	2SD365	Matsushita	KTC2028	2SD1134	Hitachi	KTD2060	2SD1820	Matsushita	KTC4076
2SC4549	NEC	KTC2028	2SD389	Matsushita	KTC2028	2SD1135	Hitachi	KTD2060	2SD1824	Matsushita	KTC4077
2SC4553	NEC	KTD1937	2SD390	Matsushita	KTD2060	2SD1136	Hitachi	KTD2060	2SD1851	Sanyo	KTD1854T
2SC4555	Sanyo	KTC4076	2SD401A	NEC	KTD2061	2SD1138	Hitachi	KTD2061	2SD1858	Rohm	KTD863
2SC4558	Sanken	KTD2066	2SD415	NEC	KTD600K	2SD1145	Sanyo	KTD1145	2SD1859	Rohm	KTD1863
2SC4573	Rohm	KTD1414	2SD418	Matsushita	KTD2499	2SD1147	Fuji	KTD1413	2SD1863	Rohm	KTD1863
2SC4574	Rohm	KTD1414	2SD438	Sanyo	KTC1027	2SD1157	Fuji	KTD2060	2SD1896	Rohm	KTC2028
2SC4596	Rohm	KTC2028	2SD468	Hitachi	KTC3205	2SD1177	Hitachi	KTC2814	2SD1897	Rohm	KTC2028
2SC4617	Rohm	KTC4075E	2SD471	NEC	KTC3205	2SD1190	Sanyo	KTD1414	2SD1898	Rohm	KTD1898
2SC4617H	Rohm	KTC4075E	2SD475	Hitachi	KTD2060	2SD1195	Sanyo	KTD1413	2SD1898	Rohm	KTD1898
2SC4620	Rohm	MPSA44	2SD476	Hitachi	KTD2060	2SD1197	Sanyo	KTD1510	2SD1899	NEC	KTC2020L
2SC4628	Hitachi	KTC3195	2SD477	Hitachi	KTD2061	2SD1207	Sanyo	KTC3209	2SD1899-Z	NEC	KTC2020D
2SC4662	Sanken	KTC4419	2SD478	Hitachi	KTD2061	2SD1207S	Sanyo	KTC3209	2SD1913	Sanyo	KTC2026
2SC4667	Toshiba	2N3904S	2SD488	Motorola	KTD2060	2SD1218	Matsushita	KTD1414	2SD1918	Rohm	KTC2983D
2SC4672	Rohm	KTC4379	2SD489	Motorola	KTD2060	2SD1236	Sanyo	KTC2028	2SD1932	Rohm	KTD1414
2SC4680	Hitachi	KTC3121	2SD490	Motorola	KTD2060	2SD1247	Sanyo	KTD1145	2SD1933	Rohm	KTD1414
2SC4688	Toshiba	KTD718	2SD525	Toshiba	KTC2028	2SD1264/A	Matsushita	KTD2061	2SD1944	Rohm	KTD2092
2SC4689	Toshiba	KTD718	2SD526	Toshiba	KTD2060	2SD1268	Matsushita	KTD2060	2SD1960	Rohm	KTD1146
2SC4738	Toshiba	KTC4075E	2SD560	NEC	TIP112F	2SD1270	Matsushita	KTC2028	2SD1972	Matsushita	KTC2026
2SC4738F	Toshiba	KTC4075E	2SD570	Matsushita	KTD2060	2SD1273	Matsushita	KTD2092	2SD1977	NEC	KTD718
2SC4738FT	Toshiba	KTC4075V	2SD580	Toshiba	KTC2026	2SD1276	Matsushita	KTD1414	2SD1980	Rohm	MJD112
2SC4772	Rohm	KTC4081	2SD600K	Sanyo	KTD600K	2SD1280	Matsushita	KTC4375	2SD1990	Matsushita	KTD2060
2SC4828	Hitachi	KTC2801	2SD601	Matsushita	KTC3875S	2SD1288	NEC	KTD718	2SD2004	Rohm	KTC2800
2SC4833	Shindengen	KTC4419	2SD602	Matsushita	KTC3876S	2SD1289	NEC	KTD718	2SD2012	Toshiba	KTC2026
2SC4848	Rohm	KTC4511	2SD633	Toshiba	KTD1415	2SD1302	Matsushita	KTC3202	2SD2014	Sanken	KTD1414
2SC4849	Rohm	KTC4511	2SD634	Toshiba	KTD1415	2SD1328	Matsushita	KTC2875	2SD2022	Rohm	KTD2424
2SC4883/A	Sanken	KTD2061	2SD635	Toshiba	KTD1415	2SD1353	Toshiba	KTC2026	2SD2023	Rohm	KTC2026
2SC4915	Toshiba	KTC4080E	2SD667	Hitachi	KTD1863	2SD1354	Toshiba	KTC2026	2SD2027	Sanyo	KTC2026
2SC4917	Toshiba	MJE13003	2SD667	Hitachi	KTD1863	2SD1369	Toshiba	KTD2424	2SD2032	Rohm	KTD1414
2SC4944	Toshiba	KTC601U	2SD669A	Hitachi	KTC2800	2SD1370	Toshiba	KTD1414	2SD2035	Rohm	KTD2060
2SC5001	Rohm	KTC5001D	2SD678A	Matsushita	KTD1415	2SD1383K	Rohm	MMBTA63	2SD2051	Matsushita	KTD2424
2SC5028	Toshiba	KTC2814	2SD679A	Matsushita	KTD1415	2SD1384	Rohm	KTC3205	2SD2061	Rohm	KTC2026
2SC5101	Sanken	KTD718	2SD686	Toshiba	KTD1414	2SD1406	Toshiba	KTC2026	2SD2064	Matsushita	KTD718
2SC5103F5	Rohm	KTC5103D	2SD687	Toshiba	KTD2424	2SD1407	Toshiba	KTC2028	2SD2092	Toshiba	KTD2092
2SC5113	Rohm	KTC4521F	2SD691	Matsushita	KTD1415	2SD1408	Toshiba	KTD2060	2SD2102	Hitachi	KTD1414
2SC5197	Toshiba	KTC5197	2SD718	Toshiba	KTD718	2SD1414	Toshiba	KTD1414	2SD2107	Hitachi	KTD2060
2SC5242	Toshiba	KTC5242	2SD721	Sanken	KTD1415	2SD1415	Toshiba	KTD1415	2SD2110	Hitachi	KTD1414











Small Signal Switching Diodes

Type No.	Mark	Max. Ratings							V <sub>F</sub> (V)		V <sub>F2</sub> (V)		V <sub>F3</sub> (V)		I <sub>R</sub> (μA)		C <sub>T</sub> (pF)			trr (ns)		Package	Outline (Unit: mm)	
		V <sub>RM</sub> (V)	V <sub>R</sub> (V)	I <sub>FM</sub> (mA)	I <sub>O</sub> (mA)	I <sub>FSM</sub> (A)	P <sub>D</sub> (mW)	Typ.	IF (mA)	Typ.	IF (mA)	Typ.	Max.	IF (mA)	Max.	V <sub>R</sub> (V)	f (MHz)	Max.	V <sub>R</sub> (V)	f (MHz)	Max.			IF (mA)
		KDS160E	UF	85	80	200	100	2	-	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1			4
KDS135	JA	300	250	300	100	2	150	-	-	-	-	1	1.2	100	0.2	250	3	0	1	100	30	USC		
KDS160	UF	85	80	300	100	2	-	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10	USC		
KDS4148U	UH	100	75	450	150	2	-	0.6	1	0.72	10	0.9	1.2	100	0.5	75	2	0	1	4	10	USC		
KDS120V	A3	85	80	300	100	2	100	0.61	1	0.74	10	0.92	1.2	100	0.5	80	4	0	1	4	10	VSM		
KDS121V	B3	85	80	300	100	2	100	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10	VSM		
KDS221V	DS	20	20	200	100	0.3	100	-	-	-	-	-	1.0	10	0.1	15	-	-	-	-	-	VSM		
KDS120E	A3	85	80	300	100	2	100	0.61	1	0.74	10	0.92	1.2	100	0.5	80	4	0	1	4	10	ESM		
KDS121E	B3	85	80	300	100	2	100	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10	ESM		
KDS221E	DS	20	20	200	100	0.3	100	-	-	-	-	-	1.0	10	0.1	15	-	-	-	-	-	ESM		
KDS120	A3	85	80	300	100	2	100	0.61	1	0.74	10	0.92	1.2	100	0.5	80	4	0	1	4	10	USM		
KDS121	B3	85	80	300	100	2	100	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10	USM		
KDS122	C3	85	80	300	100	2	100	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10	USM		
KDS135S	JA	300	250	300	100	2	150	-	-	-	-	1	1.2	100	0.2	250	3	0	1	100	30	SOT-23		
KDS181	A3	85	80	300	100	2	150	0.61	1	0.74	10	0.92	1.2	100	0.5	80	4	0	1	4	10	SOT-23		
KDS184	B3	85	80	300	100	2	150	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10	SOT-23		
KDS187	D3	85	80	300	100	2	150	0.61	1	0.74	10	0.92	1.2	100	0.5	80	4	0	1	4	10	SOT-23		
KDS190	E3	85	80	300	100	2	150	0.61	1	0.74	10	0.92	1.2	100	0.5	80	4	0	1	4	10	SOT-23		
KDS193	F3	85	80	300	100	2	150	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10	SOT-23		
KDS196	G3	85	80	300	100	2	150	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10	SOT-23		
KDS226	C3	85	80	300	100	2	150	0.6	1	0.72	10	0.9	1.2	100	0.5	80	3	0	1	4	10	SOT-23		

Note) ◇ : Typ.

Small Signal Band Switch Diodes

Type No.	Mark	Max Ratings		V <sub>F</sub> (V)		I <sub>R</sub> (μA)		V <sub>R</sub> (V)		C <sub>T</sub> (pF)			r <sub>s</sub> (Ω)			Package	Outline (Unit: mm)		
		V <sub>R</sub> (V)	I <sub>F</sub> (mA)	Max.	IF (mA)	Max.	V <sub>R</sub> (V)	Min.	I <sub>R</sub> (μA)	Typ.	Max.	V <sub>R</sub> (V)	f (MHz)	Typ.	Max.			IF (mA)	f (MHz)
		KDS114E	UD	30	100	0.85	2	0.1	15	30	1	0.7	1.2	6	1			0.5	0.9
KDS114	UD	30	100	0.85	2	0.1	15	30	1	0.7	1.2	6	1	0.5	0.9	2	100	USC	
KDS112V	BF	30	50	0.85	2	0.1	15	30	1	0.8	1.2	6	1	0.6	0.9	2	100	VSM	
KDS112E	BF	30	50	0.85	2	0.1	15	30	1	0.8	1.2	6	1	0.6	0.9	2	100	ESM	
KDS112	BF	30	50	0.85	2	0.1	15	30	1	0.8	1.2	6	1	0.6	0.9	2	100	USM	
KDS113	T3	30	50	0.85	2	0.1	15	30	1	0.8	1.2	6	1	0.6	0.9	2	100	USM	
KDS115	R3	30	50	0.85	2	0.1	15	30	1	0.8	1.2	6	1	0.6	0.9	2	100	USM	

■ PIN Diodes

Type No.	Mark	Max. Ratings		VF(V)		VR(V)		CT(pf)			rs(Ω)			Package	Outline (Unit: mm)
		VR (V)	IF (mA)	Typ.	IF (mA)	Min.	IR (μA)	Typ.	VR (V)	f (MHz)	Typ.	IF (mA)	f (MHz)		
KDV142EL	-	30	100	Max1.0	10	-	-	Max0.35	1	1	Max1.3	10	100	ELP-2	
KDV143EL	-	30	100	Max0.9	2	-	-	Max0.43	1	1	Max1.8	2	100		
KDV142UL	PA	30	100	Max1.0	10	-	-	Max0.35	1	1	Max1.3	10	100	ULP-2	
KDV143UL	PB	30	100	Max0.9	2	-	-	Max0.43	1	1	Max1.8	2	100		
KDV141F	N	30	100	Max1.0	10	-	-	Max0.82	1	1	Max0.8	10	100	TFSC	
KDV142F	P	30	100	Max1.0	10	-	-	Max0.35	1	1	Max1.3	10	100		
KDV143F	M	30	100	Max0.9	2	-	-	Max0.43	1	1	Max1.8	2	100		
KDV175E	UE	50	50	0.95	50	50	10	0.25	50	1	7	10	100	ESC	
KDV141E	EE	30	100	Max1.0	10	-	-	Max0.82	1	1	Max0.8	10	100		
KDV142E	EF	30	100	Max1.0	10	-	-	Max0.35	1	1	Max1.3	10	100		
KDV175	UE	50	50	0.95	50	50	10	0.25	50	1	7	10	100	USC	
KDV174	M3	50	50	0.95	50	50	10	0.25	50	1	7	10	100	USM	
KDV173	M3	50	50	0.95	50	50	10	0.25	50	1	7	10	100	SOT-23	

■ FM Tuning (Varactor Diodes)

Type No.	Mark	Max. Ratings		VR(V)		CA (pF)				CB (pF)				CA/CB		rs(Ω)			Package	Outline (Unit: mm : Max.)		
		VR (V)	IF (mA)	Min.	IR (μA)	Min.	Max.	VR (V)	f (MHz)	Min.	Max.	VR (V)	f (MHz)	Min.	Max.	Typ.	Max.	VR (V)			f (MHz)	C (pF)
KDV202E	FA	6	-	-	28.2	33.5	0.1	1	7.2	11.2	2.3	1	25	-	0.35	0.6	-	100	30	ESC		
KDV1472	UN	16	16	10	30.16	40.99	1	1	6.2	9.2	4.5	1	5	-	0.8	1	1.5	100	-	USC		
KDV804S	K3	15	15	10	42	47.5	2	1	24	28.8	8	1	1.65	1.8	0.3	0.4	-	100	38	SOT-23		
KDV804KS	T3	15	15	10	42	47.5	2	1	24	28.8	8	1	1.74	1.25	0.3	0.4	-	100	38			
KDV1430	L3	18	16	10	69.14	77.43	2	1	15.44	20.1	9	1	3.7	5	-	0.5	2	70	-			
KDV1470	S3	16	16	10	65.8	74.2	1	1	-	-	5	1	5	-	0.43	0.5	1.5	100	-			
KDV1471	W3	16	16	10	30.16	40.99	1	1	6.2	9.2	4.5	1	5	-	0.8	1	1.5	100	-			
KDV1480	CA	16	16	10	36.92	43.03	3	1	12.77	16.84	8	1	2.5	3.0	-	-	-	-	-			

■ AFC Application for FM (Varactor Diodes)

Type No.	Mark	Max. Ratings VR(V)	Ct (pF)				K★		Q				Package	Outline (Unit: mm)	
			Min.	Max.	VR (V)	f (MHz)	Min.	Max.	Min.	Typ.	VR (V)	f (MHz)			
KDS2236S		J3	15	7	14	4	1	0.21	0.5	70	120	4	50	SOT-23	

Note) ★:  $K = [Ct(VR=2V, f=1MHz) - Ct(VR=4V, f=1MHz)] / Ct(VR=4V, f=1MHz)$

■ TV Tuning (Varactor Diodes)

Type No.	Mark	Max. Ratings VR(V)	CA (pF)				CB (pF)				CA/CB		rs (Ω)			Package	Outline (Unit: mm)			
			Min.	Max.	VR (V)	f (MHz)	Min.	Max.	VR (V)	f (MHz)	Min.	Max.	Typ.	Max.	VR (V)			f (MHz)	C (pF)	
KDV214E		UO	32	14.15	15.75	2	1	2.06	2.35	25	1	6.3	-	-	0.57	5	470	-	ESC	
KDV215E		TA	30	14.16	16.25	2	1	2.11	2.43	25	1	5.9	7.15	-	0.55	5	470	-		
KDV269E		VR	34	29	34	2	1	2.5	2.9	25	1	11	-	-	0.75	5	470	-		
KDV300E		VC	32	39.5	47.4	2	1	2.6	3.03	25	1	14.5	-	-	1.1	5	470	-		
KDV310E		VD	34	47	53	2	1	2.65	3.0	25	1	17	-	-	1.1	5	470	-		

Note) \*: Under development

■ BS/CS Tuning (Varactor Diodes)

Type No.	Mark	Max. Ratings VR(V)	IR (uA)	CA (pF)				CB (pF)				CA/CB		rs (Ω)			Package	Outline (Unit: mm)			
				Min.	Max.	VR (V)	f (MHz)	Min.	Max.	VR (V)	f (MHz)	Min.	Max.	Typ.	Max.	VR (V)			f (MHz)	C (pF)	
KDV316E		BA	-	-	5.16	7.22	1	1	0.48	0.76	25	1	9.0	-	-	2.2	5	470	-	ESC	

■ BRDs for TV Tuner (Varactor Diodes with Built-in Resistors)

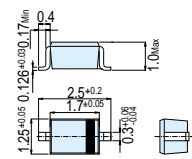
Type No.	Mark	Internal Circuit Diagram	Max. Ratings VR(V)	CA (pF)				CB (pF)				CA/CB		rs (Ω)			R (Ω)	Package	Outline (Unit: mm)		
				Min.	Max.	VR (V)	f (MHz)	Min.	Max.	VR (V)	f (MHz)	Min.	Max.	Typ.	Max.	VR (V)				f (MHz)	C (pF)
KDB2151E	R1		30	14.16	16.25	2	1	2.11	2.43	25	1	5.9	-	-	0.55	5	470	-	10kΩ	ESM	
KDB2691E	R2		34	29	34	2	1	2.5	2.9	25	1	11	-	-	0.75	5	470	-	22kΩ		
KDB2153E	R3		30	14.16	16.25	2	1	2.11	2.43	25	1	5.9	-	-	0.55	5	470	-	33kΩ		
KDB2693E	R4		34	29	34	2	1	2.5	2.9	25	1	11	-	-	0.75	5	470	-	10kΩ		
KDB2155E	SW		30	14.16	16.25	2	1	2.11	2.43	25	1	5.9	-	-	0.55	5	470	-	22kΩ		
KDB2695E	SK		34	29	34	2	1	2.5	2.9	25	1	11	-	-	0.75	5	470	-	33kΩ		
KDB2151V	R1		30	14.16	16.25	2	1	2.11	2.43	25	1	5.9	-	-	0.55	5	470	-	10kΩ	VSM	
KDB2691V	R2		34	29	34	2	1	2.5	2.9	25	1	11	-	-	0.75	5	470	-	22kΩ		
KDB2153V	R3		30	14.16	16.25	2	1	2.11	2.43	25	1	5.9	-	-	0.55	5	470	-	33kΩ		
KDB2693V	R4		34	29	34	2	1	2.5	2.9	25	1	11	-	-	0.75	5	470	-	10kΩ		
KDB2155V	SW		30	14.16	16.25	2	1	2.11	2.43	25	1	5.9	-	-	0.55	5	470	-	22kΩ		
KDB2695V	SK		34	29	34	2	1	2.5	2.9	25	1	11	-	-	0.75	5	470	-	33kΩ		
KDB2451E	R1		30	14.16	16.25	2	1	2.11	2.43	25	1	5.9	-	-	0.55	5	470	-	10kΩ	TESV	
KDB2491E	R2		34	29	34	2	1	2.5	2.9	25	1	11	-	-	0.75	5	470	-	22kΩ		
KDB2453E	R3		30	14.16	16.25	2	1	2.11	2.43	25	1	5.9	-	-	0.55	5	470	-	33kΩ		
KDB2493E	R4		34	29	34	2	1	2.5	2.9	25	1	11	-	-	0.75	5	470	-	10kΩ		
KDB2455E	SW		30	14.16	16.25	2	1	2.11	2.43	25	1	5.9	-	-	0.55	5	470	-	22kΩ		
KDB2495E	SK		34	29	34	2	1	2.5	2.9	25	1	11	-	-	0.75	5	470	-	33kΩ		
KDB2851E	R1		30	14.16	16.25	2	1	2.11	2.43	25	1	5.9	-	-	0.55	5	470	-	10kΩ	TES6	
KDB2891E	R2		34	29	34	2	1	2.5	2.9	25	1	11	-	-	0.75	5	470	-	22kΩ		
KDB2853E	R3		30	14.16	16.25	2	1	2.11	2.43	25	1	5.9	-	-	0.55	5	470	-	33kΩ		
KDB2893E	R4		34	29	34	2	1	2.5	2.9	25	1	11	-	-	0.75	5	470	-	10kΩ		
KDB2855E	SW		30	14.16	16.25	2	1	2.11	2.43	25	1	5.9	-	-	0.55	5	470	-	22kΩ		
KDB2895E	SK		34	29	34	2	1	2.5	2.9	25	1	11	-	-	0.75	5	470	-	33kΩ		

Type No.	Mark	Max. Ratings		V <sub>R</sub> (V)		C <sub>A</sub> (pF)				C <sub>B</sub> (pF)				C <sub>A</sub> /C <sub>B</sub>		r <sub>s</sub> (Ω)			Package	Outline (Unit: mm)
		V <sub>R</sub> (V)	I <sub>R</sub> (μA)	Min.	Max.	V <sub>R</sub> (V)	f (kHz)	Min.	Max.	V <sub>R</sub> (V)	f (kHz)	Min.	Max.	Typ.	Max.	V <sub>R</sub> (V)	f (kHz)	C (pF)		
KDV154E	UA	20	20	1	13.9	16.1	2	1	4.5	6	10	1	2.5	-	-	0.6	5	470	-	
KDV239E	UJ	15	15	1	3.8	4.7	2	1	1.5	2	10	1	2	-	-	0.6	1	470	-	
KDV257E	EA	10	10	1	19.5	23.5	1	1	14.3	17.6	2	1	1.3	-	-	0.5	1	470	-	
KDV258E	U6	15	15	1	19	21	1	1	8.5	10	4	1	2.0	-	-	-	-	-	-	
KDV273E	U5	10	10	1	15	17	1	1	7.3	8.7	4	1	1.8	-	-	0.5	1	470	-	
KDV350E	UK	15	15	1	15	17.5	1	1	5.3	6.3	4	1	2.8	-	-	0.5	1	470	-	
KDV355E	VA	15	-	-	6.4	7.2	1	1	2.55	2.95	4	1	2.2	-	-	0.6	1	470	-	
KDV368E	VB	10	-	-	15	16.5	1	1	5	6	3	1	2.2	-	-	1.1	2	470	-	
KDV154	UA	20	20	1	13.9	16.1	2	1	4.5	6	10	1	2.5	-	-	0.6	5	470	-	
KDV239	UJ	15	15	1	3.8	4.7	2	1	1.5	2	10	1	2	-	-	0.6	1	470	-	
KDV258	U6	15	15	1	19	21	1	1	8.5	10	4	1	2.0	-	-	0.45	1	470	-	
KDV273	U5	10	10	1	15	17	1	1	7.3	8.7	4	1	1.8	-	-	0.5	1	470	-	
KDV350	UK	15	15	1	15	17.5	1	1	5.3	6.3	4	1	2.8	-	-	0.5	1	470	-	
KDV152S	N3	15	15	10	42	47.5	2	1	24	28.8	8	1	1.6	1.8	-	0.4	-	100	38	
KDV153	H3	20	20	1	14.16	16.25	2	1	4.5	6	10	1	2.5	-	-	0.6	5	470	-	
KDV251S	Q3	12	12	10	23	38	1.6	1	11	19	5	1	1.7	2.2	-	0.6	1	50	-	
KDV350F	E	15	-	-	15.5	17.0	1	1	5.0	6.0	4	1	2.8	-	-	0.5	1	470	-	
KDV355F	1	15	-	-	6.4	7.2	1	1	2.55	2.95	4	1	2.2	-	-	0.6	1	470	-	
KDV358F	G	15	-	-	19.5	21.0	1	1	8.0	9.3	4	1	2.2	-	-	0.4	1	470	-	
KDV359F	J	15	-	-	24.8	29.8	1	1	6.0	8.3	4	1	3.0	-	-	1.5	4	100	-	
KDV365F	K	15	-	-	27.05	28.55	1	1	6.05	7.55	4	1	3.0	-	-	1.5	4	100	-	
KDV368F	2	10	-	-	15	16.5	1	1	5.0	6.0	3	1	2.2	-	-	1.1	2	470	-	
KDV369F	B	15	-	-	4.65	5.15	1	1	1.85	2.15	4	1	2.3	-	-	0.5	1	470	-	
KDV375F	F	10	-	-	15.0	16.5	1	1	3.3	4.0	4	1	4.0	-	-	1.1	2	470	-	
KDV381F	C	15	-	-	10.0	11.0	1	1	5.8	6.4	3	1	1.65	-	-	0.5	1	470	-	
KDV385F	A	15	-	-	7.2	7.7	0.5	1	2.7	3.2	2.5	1	2.43	2.57	-	0.75	1	470	-	
KDV386F	D	15	-	-	43.0	49.0	1	1	18.5	25.5	4	1	1.8	-	-	0.85	5	470	-	
KDV396F	L	10	-	-	14.5	17.5	1	1	5.2	6.5	4	1	2.3	-	-	0.4	1	470	-	
KDV397F	H	15	-	-	27.0	28.5	1	1	6.8	8.5	4	1	2.9	-	-	1.2	1	470	-	
KDV358E	VG	15	-	-	19.5	21.0	1	1	8.0	9.3	4	1	2.2	-	-	0.4	1	470	-	
KDV359E	VE	15	-	-	24.8	29.8	1	1	6.0	8.3	4	1	3.0	-	-	1.5	4	100	-	
KDV365E	VF	15	-	-	27.05	28.55	1	1	6.05	7.55	4	1	3.0	-	-	1.5	4	100	-	
KDV369E	VJ	15	-	-	4.65	5.15	1	1	1.85	2.15	4	1	2.3	-	-	0.5	1	470	-	
KDV375E	VH	10	-	-	15.0	16.5	1	1	3.3	4.0	4	1	4.0	-	-	1.1	2	470	-	
KDV381E	VK	15	-	-	10.0	11.0	1	1	5.8	6.4	3	1	1.65	-	-	0.5	1	470	-	
KDV385E	VL	15	-	-	7.2	7.7	1	1	2.7	3.2	2.5	1	2.43	2.57	-	0.75	1	470	-	
KDV386E	VM	15	-	-	43.0	49.0	1	1	18.5	25.5	4	1	1.8	-	-	0.85	5	470	-	
KDV396E	VN	10	-	-	14.5	17.5	1	1	5.2	6.5	4	1	2.3	-	-	0.4	1	470	-	
KDV397E	VP	15	-	-	27.0	28.5	1	1	6.8	8.5	4	1	2.9	-	-	1.2	1	470	-	
KDV345UL	VA	10	-	-	3.24	3.62	1	1	1.77	1.99	3	1	1.72	1.92	-	0.62	1	470	-	
KDV345EL	-	10	-	-	3.24	3.62	1	1	1.77	1.99	3	1	1.72	1.92	-	0.62	1	470	-	



Type No.	Grade	Mark	Max Ratings	Vz (V)			Zz (Ω)		Zzk (Ω)		IR (μA)		Package	Outline (Unit : mm)
				PD(mW)	Min.	Max.	Iz (mA)	Max.	Iz (mA)	Max.	Iz (mA)	Max.		
KDZ2.0EV	-	2A	150*	1.85	2.15	5	100	5	1000	0.5	120	1.0	ESC	
	Y	2A●		1.95	2.15									
KDZ2.2EV	-	2B		2.05	2.38	5	100	5	1000	0.5	120	1.0		
	Y	2B●		2.16	2.38									
KDZ2.4EV	-	2C		2.28	2.60	5	100	5	1000	0.5	120	1.0		
	Y	2C●		2.40	2.60									
KDZ2.7EV	-	2D		2.50	2.90	5	110	5	1000	0.5	120	1.0		
	Y	2D●		2.65	2.90									
KDZ3.0EV	-	30		2.80	3.20	5	120	5	1000	0.5	50	1.0		
	Y	30●		2.95	3.20									
KDZ3.3EV	-	33		3.10	3.50	5	130	5	1000	0.5	20	1.0		
	Y	33●		3.25	3.50									
KDZ3.6EV	-	36		3.40	3.80	5	130	5	1000	0.5	10	1.0		
	Y	36●		3.60	3.845									
KDZ3.9EV	-	39		3.70	4.10	5	130	5	1000	0.5	10	1.0		
	Y	39●		3.890	4.160									
KDZ4.3EV	-	43		4.00	4.50	5	130	5	1000	0.5	5	1.0		
	Y	43●		4.170	4.430									
KDZ4.7EV	-	47		4.40	4.90	5	120	5	1000	0.5	5	1.0		
	Y	47●		4.550	4.750									
KDZ5.1EV	-	51		4.80	5.40	5	70	5	1000	0.5	1	1.5		
	Y	51●		4.980	5.200									
KDZ5.6EV	-	56		5.30	6.00	5	40	5	900	0.5	1	2.5		
	Y	56●		5.490	5.730									
KDZ6.2EV	-	62		5.80	6.60	5	30	5	500	0.5	1	3.0		
	Y	62●		6.060	6.330									
KDZ6.8EV	-	68		6.40	7.20	5	25	5	150	0.5	0.5	5.0		
	Y	68●		6.650	6.930									
KDZ7.5EV	-	75		7.00	7.90	5	23	5	120	0.5	0.5	6.0		
	Y	75●		7.280	7.600									
KDZ8.2EV	-	82		7.70	8.70	5	20	5	120	0.5	0.5	6.5		
	Y	82●		8.020	8.360									
KDZ9.1EV	-	91		8.50	9.60	5	18	5	120	0.5	0.5	7.0		
	Y	91●		8.850	9.230									
KDZ10EV	-	10		9.40	10.60	5	15	5	120	0.5	0.5	8.0		
	Y	10●		9.770	10.210									
KDZ11EV	-	11		10.40	11.60	5	15	5	120	0.5	0.5	8.5		
	Y	11●		10.760	11.220									
KDZ12EV	-	12		11.40	12.60	5	15	5	110	0.5	0.5	9.0		
	Y	12●		11.740	12.240									
KDZ13EV	-	13	12.40	14.10	5	15	5	110	0.5	0.5	10			
	Y	13●	12.910	13.490										
KDZ15EV	-	15	13.80	15.60	5	15	5	110	0.5	0.5	11			
	Y	15●	14.340	14.980										
KDZ16EV	-	16	15.30	17.10	5	18	5	150	0.5	0.5	12			
	Y	16●	15.850	16.510										
KDZ18EV	-	18	16.80	19.10	5	20	5	150	0.5	0.5	14			
	Y	18●	17.560	18.350										
KDZ20EV	-	20	18.80	21.20	5	25	5	200	0.5	0.5	15			
	Y	20●	19.520	20.390										
KDZ22EV	-	22	20.80	23.30	5	30	5	200	0.5	0.5	17			
	Y	22●	21.540	22.470										
KDZ24EV	-	24	22.80	25.60	5	40	5	200	0.5	0.5	19			
	Y	24●	23.720	24.780										
KDZ27EV	-	27	26.190	27.530	5	150	5	150	0.5	0.1	21			
KDZ33EV	-	A3	32.150	33.790	5	250	5	250	0.5	0.1	25			

Note) \* : Mounted on a glass epoxy circuit board of 20 × 20mm, pad dimension of 4 × 4mm.

Type No.	Grade	Mark	Max Ratings P <sub>D</sub> (mW)	V <sub>Z</sub> (V)			Z <sub>Z</sub> (Ω)		Z <sub>ZK</sub> (Ω)		I <sub>R</sub> (μA)		Package	Outline (Unit : mm)
				Min.	Max.	I <sub>Z</sub> (mA)	Max.	I <sub>Z</sub> (mA)	Max.	I <sub>Z</sub> (mA)	Max.	V <sub>R</sub> (V)		
KDZ2.0V	-	2A	200*	1.85	2.15	5	100	5	1000	0.5	120	1.0	USC	
	Y	2A●		1.95	2.15									
KDZ2.2V	-	2B		2.05	2.38	5	100	5	1000	0.5	120	1.0		
	Y	2B●		2.16	2.38									
KDZ2.4V	-	2C		2.28	2.60	5	100	5	1000	0.5	120	1.0		
	Y	2C●		2.40	2.60									
KDZ2.7V	-	2D		2.50	2.90	5	110	5	1000	0.5	120	1.0		
	Y	2D●		2.65	2.90									
KDZ3.0V	-	30		2.80	3.20	5	120	5	1000	0.5	50	1.0		
	Y	30●		2.95	3.20									
KDZ3.3V	-	33		3.10	3.50	5	130	5	1000	0.5	20	1.0		
	Y	33●		3.25	3.50									
KDZ3.6V	-	36		3.40	3.80	5	130	5	1000	0.5	10	1.0		
	Y	36●		3.60	3.845									
KDZ3.9V	-	39		3.70	4.10	5	130	5	1000	0.5	10	1.0		
	Y	39●		3.890	4.160									
KDZ4.3V	-	43		4.00	4.50	5	130	5	1000	0.5	5	1.0		
	Y	43●		4.170	4.430									
KDZ4.7V	-	47		4.40	4.90	5	120	5	1000	0.5	5	1.0		
	Y	47●		4.550	4.750									
KDZ5.1V	-	51	4.80	5.40	5	70	5	1000	0.5	1	1.5			
	Y	51●	4.980	5.200										
KDZ5.6V	-	56	5.30	6.00	5	40	5	900	0.5	1	2.5			
	Y	56●	5.490	5.730										
KDZ6.2V	-	62	5.80	6.60	5	30	5	500	0.5	1	3.0			
	Y	62●	6.060	6.330										
KDZ6.8V	-	68	6.40	7.20	5	25	5	150	0.5	0.5	5.0			
	Y	68●	6.650	6.930										
KDZ7.5V	-	75	7.00	7.90	5	23	5	120	0.5	0.5	6.0			
	Y	75●	7.280	7.600										
KDZ8.2V	-	82	7.70	8.70	5	20	5	120	0.5	0.5	6.5			
	Y	82●	8.020	8.360										
KDZ9.1V	-	91	8.50	9.60	5	18	5	120	0.5	0.5	7.0			
	Y	91●	8.850	9.230										
KDZ10V	-	10	9.40	10.60	5	15	5	120	0.5	0.5	8.0			
	Y	10●	9.770	10.210										
KDZ11V	-	11	10.40	11.60	5	15	5	120	0.5	0.5	8.5			
	Y	11●	10.760	11.220										
KDZ12V	-	12	11.40	12.60	5	15	5	110	0.5	0.5	9.0			
	Y	12●	11.740	12.240										
KDZ13V	-	13	12.40	14.10	5	15	5	110	0.5	0.5	10			
	Y	13●	12.910	13.490										
KDZ15V	-	15	13.80	15.60	5	15	5	110	0.5	0.5	11			
	Y	15●	14.340	14.980										
KDZ16V	-	16	15.30	17.10	5	18	5	150	0.5	0.5	12			
	Y	16●	15.850	16.510										
KDZ18V	-	18	16.80	19.10	5	20	5	150	0.5	0.5	14			
	Y	18●	17.560	18.350										
KDZ20V	-	20	18.80	21.20	5	25	5	200	0.5	0.5	15			
	Y	20●	19.520	20.390										
KDZ22V	-	22	20.80	23.30	5	30	5	200	0.5	0.5	17			
	Y	22●	21.540	22.470										
KDZ24V	-	24	22.80	25.60	5	40	5	200	0.5	0.5	19			
	Y	24●	23.720	24.780										
KDZ27V	-	27	26.190	27.530	5	150	5	150	0.5	0.1	21			
KDZ33V	-	A3	32.150	33.790	5	250	5	250	0.5	0.1	25			
KDZ100V	-	AQ	95.0	105.0	1	700	1	-	-	0.2	76			
★ KDZ100VW	-	AW	95.0	105.0	1	700	1	-	-	0.2	76			

Note) \* : Mounted on a glass epoxy circuit board of 20 × 20<sub>min</sub> pad dimension of 4 × 4<sub>min</sub>.

Note) ★ : Bi-directional Zener Diode.

200mW Zener Diodes

Type No.	Max. Ratings		Vz (V)			Zz(Ω)		Zzk(Ω)		Ir(μA)		Package	Outline (Unit: mm)
	Grade	Mark	Min.	Max.	Iz (mA)	Max.	Iz (mA)	Max.	Iz (mA)	Max.	Vr (V)		
Z02W2.0V	-	2A	1.85	2.15	5	100	5	1000	0.5	120	1	SOT-23	
	X	2AX	1.85	2.05	5	100	5	1000	0.5	120	1		
	Z	2AZ	1.95	2.15	5	100	5	1000	0.5	120	1		
Z02W2.2V	-	2B	2.05	2.38	5	100	5	1000	0.5	120	1		
	X	2BX	2.05	2.26	5	100	5	1000	0.5	120	1		
	Z	2BZ	2.16	2.38	5	100	5	1000	0.5	120	1		
Z02W2.4V	-	2C	2.28	2.6	5	100	5	1000	0.5	120	1		
	X	2CX	2.28	2.5	5	100	5	1000	0.5	120	1		
	Z	2CZ	2.4	2.6	5	100	5	1000	0.5	120	1		
Z02W2.7V	-	2D	2.5	2.9	5	110	5	1000	0.5	120	1		
	X	2DX	2.5	2.75	5	110	5	1000	0.5	120	1		
	Z	2DZ	2.65	2.9	5	110	5	1000	0.5	120	1		
Z02W3.0V	-	30	2.8	3.2	5	120	5	1000	0.5	50	1		
	X	30X	2.8	3.05	5	120	5	1000	0.5	50	1		
	Z	30Z	2.95	3.2	5	120	5	1000	0.5	50	1		
Z02W3.3V	-	33	3.1	3.5	5	130	5	1000	0.5	20	1		
	X	33X	3.1	3.35	5	130	5	1000	0.5	20	1		
	Z	33Z	3.25	3.5	5	130	5	1000	0.5	20	1		
Z02W3.6V	-	36	3.4	3.8	5	130	5	1000	0.5	10	1		
	X	36X	3.4	3.65	5	130	5	1000	0.5	10	1		
	Z	36Z	3.55	3.8	5	130	5	1000	0.5	10	1		
Z02W3.9V	-	39	3.7	4.1	5	130	5	1000	0.5	10	1		
	X	39X	3.7	3.97	5	130	5	1000	0.5	10	1		
	Z	39Z	3.87	4.1	5	130	5	1000	0.5	10	1		
Z02W4.3V	-	43	4	4.5	5	130	5	1000	0.5	5	1		
	X	43X	4	4.23	5	130	5	1000	0.5	5	1		
	Y	43Y	4.13	4.35	5	130	5	1000	0.5	5	1		
	Z	43Z	4.25	4.5	5	130	5	1000	0.5	5	1		
Z02W4.7V	-	47	4.4	4.9	5	120	5	1000	0.5	5	1		
	X	47X	4.4	4.63	5	120	5	1000	0.5	5	1		
	Y	47Y	4.53	4.76	5	120	5	1000	0.5	5	1		
	Z	47Z	4.66	4.9	5	120	5	1000	0.5	5	1		
Z02W5.1V	-	5.1	4.8	5.4	5	70	5	1000	0.5	1	1.5		
	X	5.1X	4.8	5.07	5	70	5	1000	0.5	1	1.5		
	Y	5.1Y	4.97	5.24	5	70	5	1000	0.5	1	1.5		
	Z	5.1Z	5.14	5.4	5	70	5	1000	0.5	1	1.5		
Z02W5.6V	-	5.6	5.3	6	5	40	5	900	0.5	1	2.5		
	X	5.6X	5.3	5.63	5	40	5	900	0.5	1	2.5		
	Y	5.6Y	5.43	5.81	5	40	5	900	0.5	1	2.5		
	Z	5.6Z	5.61	6	5	40	5	900	0.5	1	2.5		
Z02W6.2V	-	6.2	5.8	6.6	5	30	5	500	0.5	1	3		
	X	6.2X	5.8	6.2	5	30	5	500	0.5	1	3		
	Y	6.2Y	6	6.39	5	30	5	500	0.5	1	3		
	Z	6.2Z	6.19	6.6	5	30	5	500	0.5	1	3		
Z02W6.8V	-	6.8	6.4	7.2	5	25	5	150	0.5	0.5	5		
	X	6.8X	6.4	6.8	5	25	5	150	0.5	0.5	5		
	Y	6.8Y	6.6	7.02	5	25	5	150	0.5	0.5	5		
	Z	6.8Z	6.82	7.2	15	25	5	150	0.5	0.5	5		
Z02W7.5V	-	7.5	7	7.9	5	23	5	120	0.5	0.5	6		
	X	7.5X	7	7.43	5	23	5	120	0.5	0.5	6		
	Y	7.5Y	7.23	7.66	5	23	5	120	0.5	0.5	6		
	Z	7.5Z	7.46	7.9	5	23	5	120	0.5	0.5	6		
Z02W8.2V	-	8.2	7.7	8.7	5	20	5	120	0.5	0.5	6.5		
	X	8.2X	7.7	8.16	5	20	5	120	0.5	0.5	6.5		
	Y	8.2Y	7.96	8.43	5	20	5	120	0.5	0.5	6.5		
	Z	8.2Z	8.23	8.7	5	20	5	120	0.5	0.5	6.5		

■ 200mW Zener Diodes

Type No.			Max. Ratings Pd (mW)	Vz (V)			Zz (Ω)		Zzk (Ω)		Ir (μA)		Package	Outline (Unit: mm)
Grade	Mark	Min.		Max.	Iz (mA)	Max.	Iz (mA)	Max.	Iz (mA)	Max.	Vr (V)			
Z02W9.1V	-	9.1	200	8.5	9.6	5	18	5	120	0.5	0.5	7	SOT-23	
	X	9.1X		8.5	9	5	18	5	120	0.5	0.5	7		
	Y	9.1Y		8.8	9.3	5	18	5	120	0.5	0.5	7		
	Z	9.1Z		9.1	9.6	5	18	5	120	0.5	0.5	7		
Z02W10V	-	10		9.4	10.6	5	15	5	120	0.5	0.5	8		
	X	10X		9.4	9.93	5	15	5	120	0.5	0.5	8		
	Y	10Y		9.73	10.26	5	15	5	120	0.5	0.5	8		
	Z	10Z		10.06	10.6	5	15	5	120	0.5	0.5	8		
Z02W11V	-	11		10.4	11.6	5	15	5	120	0.5	0.5	8.5		
	X	11X		10.4	10.98	5	15	5	120	0.5	0.5	8.5		
	Y	11Y		10.73	11.26	5	15	5	120	0.5	0.5	8.5		
	Z	11Z		11.06	11.6	5	15	5	120	0.5	0.5	8.5		
Z02W12V	-	12		11.4	12.6	5	15	5	110	0.5	0.5	9		
	X	12X		11.4	11.93	5	15	5	110	0.5	0.5	9		
	Y	12Y		11.73	12.26	5	15	5	110	0.5	0.5	9		
	Z	12Z		12.06	12.6	5	15	5	110	0.5	0.5	9		
Z02W13V	-	13		12.4	14.1	5	15	5	110	0.5	0.5	10		
	X	13X		12.4	13.08	5	15	5	110	0.5	0.5	10		
	Y	13Y		12.88	13.57	5	15	5	110	0.5	0.5	10		
	Z	13Z		13.37	14.1	5	15	5	110	0.5	0.5	10		
Z02W15V	-	15	13.8	15.6	5	15	5	110	0.5	0.5	11			
	X	15X	13.8	14.63	5	15	5	110	0.5	0.5	11			
	Y	15Y	14.33	15.11	5	15	5	110	0.5	0.5	11			
	Z	15Z	14.81	15.6	5	15	5	110	0.5	0.5	11			
Z02W16V	-	16	15.3	17.1	5	18	5	150	0.5	0.5	12			
	X	16X	15.3	16.1	5	18	5	150	0.5	0.5	12			
	Y	16Y	15.8	16.6	5	18	5	150	0.5	0.5	12			
	Z	16Z	16.3	17.1	5	18	5	150	0.5	0.5	12			
Z02W18V	-	18	16.8	19.1	5	20	5	150	0.5	0.5	14			
	X	18X	16.8	17.76	5	20	5	150	0.5	0.5	14			
	Y	18Y	17.46	18.43	5	20	5	150	0.5	0.5	14			
	Z	18Z	18.13	19.1	5	20	5	150	0.5	0.5	14			
Z02W20V	-	20	18.8	21.2	5	25	5	200	0.5	0.5	15			
	X	20X	18.8	19.78	5	25	5	200	0.5	0.5	15			
	Y	20Y	19.48	20.46	5	25	5	200	0.5	0.5	15			
	Z	20Z	20.16	21.2	5	25	5	200	0.5	0.5	15			
Z02W22V	-	22	20.8	23.3	5	30	5	200	0.5	0.5	17			
	X	22X	20.8	21.88	5	30	5	200	0.5	0.5	17			
	Y	22Y	21.48	22.56	5	30	5	200	0.5	0.5	17			
	Z	22Z	22.16	23.3	5	30	5	200	0.5	0.5	17			
Z02W24V	-	24	22.8	25.6	5	40	5	200	0.5	0.5	19			
	X	24X	22.8	24.11	5	40	5	200	0.5	0.5	19			
	Y	24Y	23.61	24.92	5	40	5	200	0.5	0.5	19			
	Z	24Z	24.42	25.6	5	40	5	200	0.5	0.5	19			

■ 300mW<sup>\*</sup> Zener Diodes

Type No.	Pd (Max.) (mW) <sup>*</sup>	Zener Voltage Vz (±5%)		Zz Iz=IzT Max (Ω)	Zzk Iz=0.25mA Max (Ω)	Max Ir (μA)	Max Vr (V)	Package	Outline (Unit: mm)
		Nominal <sup>*</sup>	Test Current IzT (mA)						
☆ MMBZ5221B	18A	2.4	20	30	1200	100	1	SOT-23	
☆ MMBZ5222B	18B	2.5	20	30	1250	100	1		
☆ MMBZ5223B	18C	2.7	20	30	1300	75	1		
☆ MMBZ5224B	18D	2.8	20	30	1400	75	1		
☆ MMBZ5225B	18E	3	20	29	1600	50	1		
☆ MMBZ5226B	8A	3.3	20	28	1600	25	1		
☆ MMBZ5227B	8B	3.6	20	24	1700	15	1		
☆ MMBZ5228B	8C	3.9	20	23	1900	10	1		
☆ MMBZ5229B	8D	4.3	20	22	2000	5	1		
MMBZ5230B	8E	4.7	20	19	1900	5	2		
MMBZ5231B	8F	5.1	20	17	1600	5	2		
MMBZ5232B	8G	5.6	20	11	1600	5	3		
MMBZ5233B	8H	6	20	7	1600	5	3.5		
MMBZ5234B	8J	6.2	20	7	1000	5	4		
MMBZ5235B	8K	6.8	20	5	750	3	5		
MMBZ5236B	8L	7.5	20	6	500	3	6		
MMBZ5237B	8M	8.2	20	8	500	3	6.5		
MMBZ5238B	8N	8.7	20	8	600	3	6.5		
MMBZ5239B	8P	9.1	20	10	600	3	7		
MMBZ5240B	8Q	10	20	17	600	3	8		
MMBZ5241B	8R	11	20	22	600	2	8.4		
MMBZ5242B	8S	12	20	30	600	1	9.1		
MMBZ5243B	8T	13	9.5	13	600	0.5	9.9		
MMBZ5244B	8U	14	9	15	600	0.1	10		
MMBZ5245B	8V	15	8.5	16	600	0.1	11		
MMBZ5246B	8W	16	7.8	17	600	0.1	12		
MMBZ5247B	8X	17	7.4	19	600	0.1	13		
MMBZ5248B	8Y	18	7	21	600	0.1	14		
MMBZ5249B	8Z	19	6.6	23	600	0.1	14		
MMBZ5250B	81A	20	6.2	25	600	0.1	15		
MMBZ5251B	81B	22	5.6	29	600	0.1	17		
MMBZ5252B	81C	24	5.2	33	600	0.1	18		

Note) \* : Zener Voltage is measured with a pulse test current (IzT) applied at an ambient temperature of 25℃, <sup>\*</sup> : Package mounted on 99.5% alumina 10×8×0.6mm, ☆ : Under development

■ 1000mW Zener Diodes

Type No.0	Pd (Max.) (mW)	V <sub>Z</sub> (V)			Z <sub>Z</sub> (Ω)		I <sub>R</sub> (μA)		Package	Outline (Unit: mm)
		Min.	Max.	I <sub>Z</sub> (mA)	Max.	I <sub>Z</sub> (mA)	Max.	V <sub>R</sub> (V)		
SMAZ3.6V	Z3.6	3.6	4.0	40	15	40	20	1.0	SMA	
SMAZ3.9V	Z3.9	3.9	4.4	40	15	40	20	1.0		
SMAZ4.3V	Z4.3	4.3	4.8	40	15	40	20	1.0		
SMAZ4.7V	Z4.7	4.7	5.2	40	10	40	20	1.0		
SMAZ5.1V	Z5.1	5.1	5.7	40	8	40	20	1.0		
SMAZ5.6V	Z5.6	5.6	6.3	40	8	40	20	1.5		
SMAZ6.2V	Z6.2	6.2	7.0	40	6	40	20	3.0		
SMAZ6.8V	Z6.8	6.8	7.7	40	6	40	20	3.5		
SMAZ7.5V	Z7.5	7.5	8.4	40	4	40	20	4.0		
SMAZ8.2V	Z8.2	8.2	9.3	40	4	40	20	5.0		
SMAZ9.1V	Z9.1	9.1	10.2	40	6	40	20	6.0		
SMAZ10V	Z10	10.0	11.2	40	6	40	10	7.0		
SMAZ11V	Z11	11.0	12.3	20	8	20	10	8.0		
SMAZ12V	Z12	12.0	13.5	20	8	20	10	9.0		
SMAZ13V	Z13	13.3	15.0	20	10	20	10	10.0		
SMAZ15V	Z15	14.7	16.5	20	10	20	10	11.0		
SMAZ16V	Z16	16.2	18.3	20	12	20	10	12.0		
SMAZ18V	Z18	18.0	20.3	20	12	20	10	13.0		
SMAZ20V	Z20	20.0	22.4	20	14	20	10	15.0		
SMAZ22V	Z22	22.0	24.5	10	14	10	10	17.0		
SMAZ24V	Z24	24.0	27.6	10	16	10	10	19.0		
SMAZ27V	Z27	27.0	30.8	10	16	10	10	21.0		
SMAZ30V	Z30	30.0	34.0	10	18	10	10	23.0		
SMAZ33V	Z33	33.0	37.0	10	18	10	10	25.0		
SMAZ36V	Z36	36.0	40.0	10	20	10	10	27.0		

Note) \* : Zener Voltage is measured with a pulse test current (I<sub>Z</sub>) applied at an ambient temperature of 25°C, ※ : Package mounted on 99.5% alumina 10×8×0.6mm, ☆ : Under development

■ 5W Zener Diodes(Surge Absorber)

Type No.	Max. Ratings Pd (W)	V <sub>Z</sub> (V)			Z <sub>Z</sub> (Ω)		I <sub>R</sub> (μA)		Package	Outline (Unit: mm)
		Min.	Max.	I <sub>Z</sub> (mA)	Max.	I <sub>Z</sub> (mA)	Max.	V <sub>R</sub> (V)		
Z5W27V	5	24	30	10	30	10	10	22	DO-218	
Z5W37V	5	34	40	10	30	10	10	32		
Z6W27V	6	24	30	10	30	10	10	22		

Small Signal Schottky Barrier Diodes

Type No.		Mark	Max. Ratings					V <sub>F</sub> (V)		I <sub>R</sub> (μA)		C <sub>T</sub> (pF)			Package	Outline (Unit: mm)	
			V <sub>RM</sub> (V)	V <sub>R</sub> (V)	I <sub>FM</sub> (mA)	I <sub>O</sub> (mA)	I <sub>FSM</sub> (A)	P <sub>d</sub> (mW)	Max.	I <sub>F</sub> (mA)	Max.	V <sub>R</sub> (V)	Typ.	V <sub>R</sub> (V)			f (MHz)
KDR720F		R	-	30	-	100	-	-	0.35	10	10	10	-	-	-	TFSC	
KDR730F		Q	-	30	-	100	-	-	0.45	10	0.5	10	-	-	-		
KDR720V		SB	-	30	-	100	-	-	0.35	10	10	10	-	-	-	VSC	
KDR730V		SA	-	30	-	100	-	-	0.45	10	0.5	10	-	-	-		
KDR357E		UM	45	40	300	100	1	150☆	0.6	50	5	10	25	0	1	ESC	
KDR367E		US	15	10	200	100	1	150☆	0.5	100	20	10	20	0	1		
KDR368E		U4	20	20	200	100	1	150☆	0.5	100	20	10	20	10	1		
KDR377E		UV	40	40	150	30	0.2	150☆	0.55	30	20	40	6	1	1		
KDR720E		UB	-	30	-	200	1	150☆	0.50	200	30	10	-	-	-		
KDR728E		UT	30	30	150	30	0.2	150☆	0.55	30	300	30	6.5	1	1		
KDR730E		EB	-	30	-	200	1	150☆	0.6	200	1	10	-	-	-		
KDR357		UL	45	40	200	100	1	200☆	0.55	100	5	40	30	0	1	USC	
KDR367		US	15	10	200	100	1	200☆	0.5	100	20	10	20	0	1		
KDR368		U4	20	20	200	100	1	150☆	0.5	100	20	10	20	10	1		
KDR377		UV	40	40	150	30	0.2	200☆	0.55	30	20	40	6	1	1		
KDR412		U3	40	20	-	500	3	-	0.5	500	30	10	20	10	1		
KDR728		UT	30	30	150	30	0.2	200☆	0.55	30	300	30	6.5	1	1		
KDR729		UM	30	30	300	200	1	200☆	0.55	200	50	30	50	0	1		
KDR784		UU	30	30	300	100	1	200☆	0.55	100	15	30	40	1	1		
KDR331V		UW	15	10	100	50	1	100	0.5	50	20	10	13	0	1	VSM	
KDR732V		UZ	-	30	-	70	2	-	0.55	70	5	15	3	10	1		
KDR331E		UW	15	10	100	50	1	100	0.5	50	20	10	13	0	1	ESM	
KDR378E		X3	-	10	-	100	1	100	0.5	100	20	10	14	0	1		
KDR732E		UZ	-	30	-	70	2	-	0.55	70	5	15	3	10	1		
KDR105		DL	-	50	-	100	2	-	0.55	100	10	25	7.7	10	1	USM	
KDR322		UL	45	40	300	100	-	100	0.6	100	5	40	18	0	1		
KDR331	UW	15	10	100	50	1	100	0.5	50	20	10	13	0	1			
KDR378	X3	-	10	-	100	1	100	0.5	100	20	10	14	0	1			
KDR393	R9	-	40	-	100	1	-	0.6	100	5	10	20	0	1			
KDR411	U3	40	20	-	500	3	-	0.5	500	30	10	20	10	1			
KDR731	UX	-	30	-	70	2	-	0.55	70	5	15	5	10	1			
KDR732	UZ	-	30	-	70	2	-	0.55	70	5	15	3	10	1			

Note) ☆: Mounted on a glass epoxy circuit board of 20×20mm.

Small Signal Schottky Barrier Diodes

Type No.		Mark	Max. Ratings					VF (V)		IR (μA)		CT (pF)		Package	Outline (Unit: mm)		
			V <sub>RM</sub> (V)	V <sub>R</sub> (V)	I <sub>FM</sub> (mA)	I <sub>O</sub> (mA)	I <sub>FSM</sub> (A)	P <sub>D</sub> (mW)	Max.	I <sub>F</sub> (mA)	Max.	V <sub>R</sub> (V)	Typ.			V <sub>R</sub> (V)	f (MHz)
KDR511T		T1	-	15	-	1A	10	-	0.4	1000	500	10	42	10	1	TSM	
KDR521T		T2	-	20	-	1A	3	-	0.45	1000	200	20	-	-			
KDR531T		T3	-	30	-	1A	10	-	0.47	1000	500	15	35	10	1		
KDR105S		DL	-	50	-	100	2	-	0.55	100	10	25	7.7	10	1	SOT-23	
KDR393S		R9	-	40	-	100	1	-	0.6	100	5	40	20	0	1		
KDR400S		DJ	-	40	-	500	3	-	0.55	500	50	25	25	10	1		
KDR411S		U3	40	20	-	500	3	-	0.5	500	30	10	20	10	1		
KDR505S		DM	-	50	-	500	5	-	0.55	500	20	25	22	10	1		
KDR701S		DK	-	30	-	700	5	-	0.55	700	80	30	190	0	1		
KDR720S		MG	-	30	-	200	-	-	0.55	200	50	30	30	0	1		
KDR721S		MF	-	30	-	200	1	-	0.55	200	50	30	13	10	1		
KDR731S		UX	-	30	-	70	2	-	0.55	70	5	15	5	10	1		

Note) ☆ : Mounted on a glass epoxy circuit board of 20 × 20 mm.

Power Schottky Barrier Diodes

Type No.		Mark	Max. Ratings			V <sub>FM</sub> (V)		I <sub>RRM</sub> (mA)		Package	Outline (Unit: mm)
			V <sub>R</sub> (V)	I <sub>O</sub> (A)	I <sub>FSM</sub> (A) (60Hz)	Max.	I <sub>F</sub> (A)	Max.	V <sub>R</sub> (V)		
SMAB13		B13	30	1	40	0.42	1	1.0	V <sub>R</sub> =V <sub>R</sub> RM	SMA	
SMAB33		B33	30	3	70	0.45	3	2.0	V <sub>R</sub> =V <sub>R</sub> RM		
SMAB33L		B33L	30	3	70	0.36	3	2.0	V <sub>R</sub> =Rated		
SMAB14		B14	40	1	40	0.5	1	1.0	V <sub>R</sub> =V <sub>R</sub> RM		
SMAB34		B34	40	3	70	0.52	3	2.0	V <sub>R</sub> =V <sub>R</sub> RM		
SMAB16		B16	60	1	30	0.58	1	1.0	V <sub>R</sub> =V <sub>R</sub> RM		
SMAB36		B36	60	3	70	0.6	1	2.0	V <sub>R</sub> =V <sub>R</sub> RM		
SMAB110		B110	100	1	30	0.8	1	1.0	V <sub>R</sub> =V <sub>R</sub> RM		
SMAB210		B210	100	2	50	0.8	2	1.0	V <sub>R</sub> =V <sub>R</sub> RM		
SMFB13		B13	30	1	22	0.42	1	1.0	V <sub>R</sub> =V <sub>R</sub> RM		
SMFB23L		23L	30	1.5	33	0.36	1.5	1.0	V <sub>R</sub> =Rated		
SMFB14		B14	40	1	22	0.50	1	1.0	V <sub>R</sub> =V <sub>R</sub> RM		
USFB13		A3	30	1	5	0.47	1	0.2	30	USF	
USFB13L		BB	30	1	22	0.39	1	1.0	30		
USFB053		53	30	0.5	5	0.39	0.5	0.2	30		
USFB073		73	30	0.7	5	0.42	0.7	0.2	30		

Note) \* : Under development

Ultra Fast Recovery Diodes

Type No.		Mark	Max. Ratings			V <sub>FM</sub> (V)		I <sub>RRM</sub> (μA)		trr (ns)			Package	Outline (Unit: mm)
			V <sub>R</sub> (V)	I <sub>O</sub> (A)	I <sub>FSM</sub> (A) (60Hz)	Max.	I <sub>F</sub> (A)	Max.	V <sub>R</sub> (V)	Max.	I <sub>F</sub> (mA)	I <sub>R</sub> (mA)		
* SMAU1D		U1D	200	1	33	0.98	1	10	V <sub>R</sub> =V <sub>R</sub> RM	50	100	200	SMA	
* SMAU2D		U2D	200	2	55	0.98	2	10	V <sub>R</sub> =V <sub>R</sub> RM	50	100	200		

Note) \* : Under development



TVS Diodes

Type No.	Mark	Max. Ratings		V <sub>RWM</sub>	V <sub>BR</sub> (V)		V <sub>C</sub> (V)			C <sub>j</sub> [pF]			Package	Outline (Unit: mm)	
		P <sub>pk</sub> [W]	I <sub>PP</sub> [A]		Max	Min	I <sub>t</sub> [mA]	Max	I <sub>PP</sub> [A]	t <sub>p</sub> [us]	Max	V <sub>R</sub> [V]			f [MHz]
*PG03DBTFC		T	50	-	3.3	4.2	1	-	-	-	25	0	1	TFSC	
*PG05DBTFC		6	50	-	5	5.8	1	-	-	-	15(Typ.)	0	1		
*PG03DBVSC		3B	-	-	3.3	4.2	1	-	-	-	25	0	1	VSC	
*PG05DBVSC		5B	50	-	5	5.8	1	-	-	-	60	0	1		
PG03FSESC		3S	50	5	3.3	4	1	10.9	5	8/20	100	0	1	ESC	
PG05FSESC		5S	50	5	5	6	1	14.5	5	8/20	80	0	1		
PG03FBESC		3B	50	5	3.3	4.2	1	10.9	5	8/20	80	0	1		
PG05FBESC		5B	50	5	5	6.3	1	14.5	5	8/20	60	0	1		
PG03JSUSC		3J	350	34	3.3	4	1	10.9	34	8/20	500	0	1	USC	
PG05HSUSC		5H	350	24	5	6	1	14.5	24	8/20	350	0	1		
PG08HSUSC		8H	350	21	8	8.5	1	16.9	21	8/20	250	0	1		
PG12GSUSC		2G	350	15	12	13.3	1	25	15	8/20	150	0	1		
PG24FSUSC		4F	350	8	24	26.7	1	45	8	8/20	88	0	1		
PG08GBUSC		8G	350	21	8	8.5	1	16.9	21	8/20	120	0	1		
PG05GBUSC		5G	350	24	5	6	1	14.5	24	8/20	200	0	1		
PG12FBUSC		2F	350	15	12	13.3	1	25	15	8/20	100	0	1		
PG24EBUSC	4E	350	8	24	26.7	1	45	8	8/20	50	0	1	SOT-23		
PG05HAS23	5HA	350	24	5	6	1	14.5	24	8/20	400	0	1			
PG12GAS23	12G	350	15	12	13.3	1	25	15	8/20	150	0	1			
PG24FAS23	24F	350	8	24	26.7	1	43.5	8	8/20	60	0	1			
PG12GCS23	12	350	15	12	13.3	1	25	15	8/20	120	0	1			
PG05BUS23	5BU	350	24	5	6	1	14.5	24	8/20	5	0	1			
PG12BUS23	12B	300	15	12	13.3	1	25	15	8/20	5	0	1			
PG24BUS23	24B	300	8	24	26.7	1	43.5	8	8/20	5	0	1			
PG2.8CUS23	2P8	400	24	2.8	3	-	3.9	2	8/20	10	0	1			
PG712FBS23	712	400	17	7, 12	7.5, 13.3	1	12, 26	17	8/20	75	0	1			
PG05FUUSV		F1	175	-	5	6	1	-	-	-	40(Typ.)	0	1	USV	
PG05GBUSV		5B	200	24	5	6	1	12.5	24	8/20	175	0	1		
PG12FBUSV		2F	200	8	12	13.3	1	25	8	8/20	75	0	1		
PG05HBTS6		5H	350	24	5	6.3	1	15	24	8/20	350	0	1	TS6	
PG12GBTS6		2G	350	15	12	14	1	23	15	8/20	75	0	1		
PG24FBTS6		4F	350	8	24	27	1	44	8	8/20	75	0	1		
PG05HXTS6		5HX	350	24	5	6	1	14.5	24	8/20	400	0	1		
PG12GXTS6		2GX	350	15	12	13.3	1	23	15	8/20	150	0	1		
PG24FXTS6		4FX	350	8	24	26.7	1	44	8	8/20	75	0	1		
PG22KSSMA		22S	1500	42.3	22	24.4	1	35.5	42.3	8/20	1000	0	1	SMA	
PG24JSSMA		24S	1500	38.6	24	26.7	1	38.9	38.6	8/20	800	0	1		
*PG03GXTEV		3X	150	15	3.3	4.2	1	10.9	15	8/20	120	0	1	TESV	
*PG05GXTEV		5X	150	10	5	6.3	1	14.5	10	8/20	100	0	1		
*PG12FXTEV		2X	150	6	12	13.3	1	25	6	8/20	60	0	1		
PG03GXTE6		3X	150	15	3.3	4.2	1	10.9	15	8/20	120	0	1	TES6	
PG05GXTE6		5X	150	10	5	6.3	1	14.5	10	8/20	100	0	1		
PG12FXTE6		2X	150	6	12	13.3	1	25	6	8/20	60	0	1		
PG03GXUS6		3X	100	14.5	3.3	4	1	10.9	14.5	8/20	200	0	1	US6	
PG05GXUS6		5X	100	8	5	6	1	12.5	8	8/20	130	0	1		
PG12FXUS6		2X	100	4.2	12	13.3	1	24	4.2	8/20	60	0	1		
PG24EXUS6		4X	100	1.8	24	26.7	1	55.5	1.8	8/20	40	0	1		

(Note) \* : Under development

■ AFC Application for FM (Varactor Diodes)

Type No.	Max. Ratings VR (V)	CT (pF)				K *		Q				Package	Outline (Unit: mm)
		Min.	Max.	VR (V)	f (MHz)	Min.	Max.	Min.	Typ.	VR (V)	f (MHz)		
KDS2236M	15	7	14	4	1	0.21	0.5	70	120	4	50	TO-92M	

Note) \* :K=[ CT(VR=2V,f=1 MHz)-CT(VR=4V,f=1 MHz) / CT(VR=4V,f=1 MHz) ]

■ AM Tuning (Varactor Diodes)

Type No.	Max. Ratings VR (V)	VR(V) Min.	IR (μA)	C1V (pF)		C8V (pF)		C1V/C8V			Q		Package	Outline (Unit: mm)						
				Min.	Max.	VR (V)	f (MHz)	Min.	Max.	Min.	Typ.	Max.			Min.	Typ.	VR (V)	f (MHz)		
KDV149	15	15	10	435	540	1	1	21	30	8	1	16	19.5	22	200	450	1	1	TO-92M	

■ FM Tuning (Varactor Diodes)

Type No.	Max. Ratings VR(V)	VR(V) Min.	IR (μA)	CA (pF)		CB (pF)		CA/CB		rs (Ω)			Package	Outline (Unit: mm)					
				Min.	Max.	VR (V)	f (MHz)	Min.	Max.	VR (V)	f (MHz)	Min.			Max.	Typ.	Max.	VR (V)	f (MHz)
KDV147	15	15	10	34	39.5	2	1	11.7	13.7	8	1	2.7	3.2	0.3	0.5	50	30	TO-92M	
KDV804M	15	15	10	42	47.5	2	1	24	28.8	8	1	1.65	1.8	0.3	0.4	100	38	TO-92M	

■ VCO for UHF Band Radio (Varactor Diodes)

Type No.	Max. Ratings VR(V)	VR(V) Min.	IR (μA)	CA (pF)		CB (pF)		CA/CB		rs (Ω)			Package	Outline (Unit: mm)				
				Min.	Max.	VR (V)	f (MHz)	Min.	Max.	VR (V)	f (MHz)	Min.			Max.	Max.	VR (V)	f (MHz)
KDV251M	12	12	10	23	38	1.6	1	11	19	5	1	1.7	2.2	0.6	1	50	TO-92M	

■ Fast Recovery Diodes

Type No.	Max. Ratings				VFM (V)		trr (ns)			Rth(j-c) (°C/W) Max.	Package	Outline (Unit: mm)
	VRRM (V)	IO (A)	IFSM (A) (50Hz)	IFSM (A) (60Hz)	Max.	IFM (A)	Max.	IF(A)	IR (A)			
F1B2CAI	200	10	60	70	1.4	5	400	0.1	0.1	3.5	TO-220IS	
F1B2CCI	200	10	60	70	1.4	5	400	0.1	0.1	3.5	TO-220IS	

■ Ultra Fast Recovery Rectifier Diodes

Type No.	Max. Ratings				VFM (V)		IRM (μA)		trr (ns)			Package	Outline (Unit: mm)
	VRRM (V)	IO (A)	IFSM (A) (50Hz)	IFSM (A) (60Hz)	Max.	IFM (A)	Max.	VR(V)	Max.	IF(mA)	IR (mA)		
U5A2CI	200	5	50	60	0.98	5	10	VR=VRRM	50	100	100	TO-220IS	
U5A2CIC	200	5	25	30	0.98	2.5	10	VR=VRRM	50	100	100		
U10A2CIC	200	10	50	60	0.98	5	10	VR=VRRM	50	100	100		
* U10A2CIA	200	10	50	60	0.98	5	10	VR=VRRM	50	100	100		
* U10A3CI	300	10	50	60	1.3	5	5	VR=VRRM	60	100	100		

Note) \* : Under development

Power Schottky Barrier Diodes

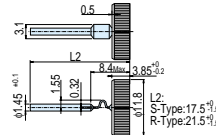
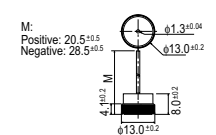
Type No.	Max. Ratings			V <sub>FM</sub> (V)		I <sub>RRM</sub> (mA) (V <sub>RRM</sub> =Rated)	trr (ns)			R <sub>th(c-f)</sub> (°C/W)	Package	Outline (Unit: mm)
	V <sub>RRM</sub> (V)	I <sub>O</sub> (A)	I <sub>FSM</sub> (A)	Max. (T <sub>c</sub> =25 °C)	I <sub>FM</sub> (A)		Max.	I <sub>F</sub> (A)	di/dt(A/μs)			
						Max.						
B5A45VI	45	5	100	0.55	5	0.5	35	1	-20	4.5	TO-220IS	
B5A60VI	60	5	100	0.55	5	0.5	35	1	-20	4.5		
B5A100VI	100	5	100	0.80	5	3	35	1	-20	4.5		
B10A45VI	45	10	150	0.58	10	0.5	35	1	-20	3		
B5A45VIC	45	5	70	0.55	2.5	0.5	35	1	-20	4	TO-220IS	
B5A60VIC	60	5	70	0.55	2.5	0.5	35	1	-20	4		
B10A45VIC	45	10	100	0.55	5	0.5	35	1	-30	4		
B10A60VIC	60	10	100	0.58	5	0.5	35	1	-30	4		
B10A100VIC	100	10	100	0.80	5	3	35	1	-30	3.5		
B15A45VIC	45	15	150	0.58	7.5	0.5	35	1	-50	4		
B15A60VIC	60	15	150	0.58	7.5	0.5	35	1	-30	4		
B20A45VIC	45	20	250	0.58	10	2	35	1	-50	3.5		
B20A60VIC	60	20	250	0.58	10	2	35	1	-30	3.5		
B20A100VIC	100	20	250	0.90	10	1	35	1	-30	3.5		
B30A45VIC	45	30	350	0.6	15	3	35	1	-50	2.5		

Diodes

Alternator Diodes

Type No.	Polarity	Max. Ratings				Package	Outline (Unit: mm : Max.)
		V <sub>R</sub> (V)	I <sub>O</sub> (A)	I <sub>FM</sub> (A)	R <sub>th</sub> (°C/W)		
E30A2CS	+	200	30	350	1	MR	
E30A2CR	-	200	30	350	1		
E30A23VS	+	23 ± 2	30	350	1		
E30A23VR	-	23 ± 2	30	350	1		
E35A2CS	+	200	35	450	0.9		
E35A2CR	-	200	35	450	0.9		
E35A21VS	+	21 ± 3	35	450	0.9		
E35A21VR	-	21 ± 3	35	450	0.9		
E35A23VS	+	23 ± 3	35	450	0.9		
E35A23VR	-	23 ± 3	35	450	0.9		

### ■ Alternator Diodes

Type No.	Polarity	Max. Ratings					Package	Outline (Unit: mm)		
		V <sub>R</sub> (V)	I <sub>O</sub> (A)	I <sub>FM</sub> (A)	R <sub>th</sub> (°C/W)	V <sub>FM</sub> (V)				
E25A2CPS	+	200	25	250	1.13	1.18	H-PF			
E25A2CPR	-	200	25	250	1.13	1.18				
E30A2CPS	+	200	30	350	0.86	1.17				
E30A2CPR	-	200	30	350	0.86	1.17				
E30A23VPS	+	23 ±2	30	350	0.86	1.17				
E30A23VPR	-	23 ±2	30	350	0.86	1.17				
E30A27VS	+	27 ±3	30	350	1	1.17				
E30A27VR	-	27 ±3	30	350	1	1.17				
E35A21VPS	+	21 ±3	35	360	0.83	1.15				
E35A21VPR	-	21 ±3	35	360	0.83	1.15				
E35A2CPS	+	200	35	360	0.83	1.15				
E35A2CPR	-	200	35	360	0.83	1.15				
E50A23VPS	+	23 ±3	50	500	0.8	1.05				
E50A23VPR	-	23 ±3	50	500	0.8	1.05				
E50A2CPS	+	200	50	500	0.8	1.05				
E50A2CPR	-	200	50	500	0.8	1.05				
E35A2CBS	+	200	35	300	0.8	1.1			B-PF	
E35A2CBR	-	200	35	300	0.8	1.1				
E35A21VBS	+	21 ±2	35	300	0.8	1.1				
E35A21VBR	-	21 ±2	35	300	0.8	1.1				
E35A27VBS	+	27 ±3	35	300	0.8	1.1				
E35A27VBR	-	27 ±3	35	300	0.8	1.1				
E35A37VBS	+	37 ±3	35	300	0.8	1.15				
E35A37VBR	-	37 ±3	35	300	0.8	1.15				
E50A2CBS	+	200	50	380	0.6	1.05				
E50A2CBR	-	200	50	380	0.6	1.05				
E50A21VBS	+	21 ±2	50	380	0.6	1.05				
E50A21VBR	-	21 ±2	50	380	0.6	1.05				
E50A27VBS	+	27 ±3	50	380	0.6	1.05				
E50A27VBR	-	27 ±3	50	380	0.6	1.05				
E50A37VBS	+	37 ±3	50	380	0.6	1.1				
E50A37VBR	-	37 ±3	50	380	0.6	1.1				
E65A27VBS	+	27 ±3	65	450	0.5	1.05				
E65A27VBR	-	27 ±3	65	450	0.5	1.05				

Note) \* : Under development

Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
02CZ2.0	Toshiba	Z02W2.0V	02DZ9.1	Toshiba	KDZ9.1V	DZD6.2	Sanyo	Z02W6.2V	MA3043	Matsushita	Z02W4.3V
02CZ2.2	Toshiba	Z02W2.2V	1S2836	NEC	KDS181	DZD6.8	Sanyo	Z02W6.8V	MA3047	Matsushita	Z02W4.7V
02CZ2.4	Toshiba	Z02W2.4V	1S2838	NEC	KDS184	DZD7.5	Sanyo	Z02W7.5V	MA3051	Matsushita	Z02W5.1V
02CZ2.7	Toshiba	Z02W2.7V	1SS123	NEC	KDS226	DZD8.2	Sanyo	Z02W8.2V	MA3056	Matsushita	Z02W5.6V
02CZ3.0	Toshiba	Z02W3.0V	1SS181	Toshiba	KDS181	DZD9.1	Sanyo	Z02W9.1V	MA3062	Matsushita	Z02W6.2V
02CZ3.3	Toshiba	Z02W3.3V	1SS184	Toshiba	KDS184	DZD10	Sanyo	Z02W10V	MA3068	Matsushita	Z02W6.8V
02CZ3.6	Toshiba	Z02W3.6V	1SS187	Toshiba	KDS187	DZD11	Sanyo	Z02W11V	MA3075	Matsushita	Z02W7.5V
02CZ3.9	Toshiba	Z02W3.9V	1SS190	Toshiba	KDS190	DZD12	Sanyo	Z02W12V	MA3082	Matsushita	Z02W8.2V
02CZ4.3	Toshiba	Z02W4.3V	1SS193	Toshiba	KDS193	DZD13	Sanyo	Z02W13V	MA3091	Matsushita	Z02W9.1V
02CZ4.7	Toshiba	Z02W4.7V	1SS196	Toshiba	KDS196	DZD15	Sanyo	Z02W15V	MA3100	Matsushita	Z02W10V
02CZ5.1	Toshiba	Z02W5.1V	1SS220	NEC	KDS193	DZD16	Sanyo	Z02W16V	MA3110	Matsushita	Z02W11V
02CZ5.6	Toshiba	Z02W5.6V	1SS222	NEC	KDS187	DZD18	Sanyo	Z02W18V	MA3120	Matsushita	Z02W12V
02CZ6.2	Toshiba	Z02W6.2V	1SS226	Toshiba	KDS226	DZD20	Sanyo	Z02W20V	MA3130	Matsushita	Z02W13V
02CZ6.8	Toshiba	Z02W6.8V	1SS300	Toshiba	KDS120	DZD22	Sanyo	Z02W22V	MA3150	Matsushita	Z02W15V
02CZ7.5	Toshiba	Z02W7.5V	1SS301	Toshiba	KDS121	DZD24	Sanyo	Z02W24V	MA3160	Matsushita	Z02W16V
02CZ8.2	Toshiba	Z02W8.2V	1SS312	Toshiba	KDS112	HSM123	Hitachi	KDS226	MA3180	Matsushita	Z02W18V
02CZ9.1	Toshiba	Z02W9.1V	1SS314	Toshiba	KDS114	HSM221	Hitachi	KDS193	MA3200	Matsushita	Z02W20V
02CZ10	Toshiba	Z02W10V	1SS318	Rohm	KDS114	HSM223	Hitachi	KDS187	MA3220	Matsushita	Z02W22V
02CZ11	Toshiba	Z02W11V	1SV147	Toshiba	KDV147	HSM2836	Hitachi	KDS181	MA3240	Matsushita	Z02W24V
02CZ12	Toshiba	Z02W12V	1SV149	Toshiba	KDV149	HSM2838	Hitachi	KDS184	MMBV432	Motorola	KDV804S
02CZ13	Toshiba	Z02W13V	1SV153	Toshiba	KDV153	HVM16	Hitachi	KDV804S	MMBZ5229B	Motorola	Z02W4.3V
02CZ15	Toshiba	Z02W15V	1SV160	Toshiba	KDS2236S	HZM5A	Hitachi	Z02W4.3V	MMBZ5230B	Motorola	Z02W4.7V
02CZ16	Toshiba	Z02W16V	1SV172	Rohm	KDV173	HZM5B	Hitachi	Z02W4.7V	MMBZ5231B	Motorola	Z02W5.1V
02CZ18	Toshiba	Z02W18V	BB804	SIMENS	KDV804S	HZM5C	Hitachi	Z02W5.1V	MMBZ5232B	Motorola	Z02W5.6V
02CZ20	Toshiba	Z02W20V	DA116	Rohm	KDS187	HZM6A	Hitachi	Z02W5.6V	MMBZ5234B	Motorola	Z02W6.2V
02CZ22	Toshiba	Z02W22V	DA119	Rohm	KDS196	HZM6C	Hitachi	Z02W6.2V	MMBZ5235B	Motorola	Z02W6.8V
02CZ24	Toshiba	Z02W24V	DA204K	Rohm	KDS226	HZM7A	Hitachi	Z02W6.8V	MMBZ5236B	Motorola	Z02W7.5V
02DZ2.0	Toshiba	KDZ2.0V	DAN202K	Rohm	KDS184	HZM7C	Hitachi	Z02W7.5V	MMBZ5237B	Motorola	Z02W8.2V
02DZ2.2	Toshiba	KDZ2.2V	DAN202U	Rohm	KDS121	HZM9A	Hitachi	Z02W8.2V	MMBZ5239B	Motorola	Z02W9.1V
02DZ2.4	Toshiba	KDZ2.4V	DAN209S	Rohm	KDS201	HZM9B	Hitachi	Z02W9.1V	MMBZ5240B	Motorola	Z02W10V
02DZ2.7	Toshiba	KDZ2.7V	DAP202K	Rohm	KDS181	HZM11A	Hitachi	Z02W10V	MMBZ5241B	Motorola	Z02W11V
02DZ3.0	Toshiba	KDZ3.0V	DAP202U	Rohm	KDS120	HZM11B	Hitachi	Z02W11V	MMBZ5242B	Motorola	Z02W12V
02DZ3.3	Toshiba	KDZ3.3V	DCA010	Sanyo	KDS181	HZM12A	Hitachi	Z02W12V	MMBZ5243B	Motorola	Z02W13V
02DZ3.6	Toshiba	KDZ3.6V	DCB010	Sanyo	KDS184	HZM12B	Hitachi	Z02W13V	MMBZ5245B	Motorola	Z02W15V
02DZ3.9	Toshiba	KDZ3.9V	DCC010	Sanyo	KDS226	HZM15	Hitachi	Z02W15V	MMBZ5246B	Motorola	Z02W16V
02DZ4.3	Toshiba	KDZ4.3V	DSA010	Sanyo	KDS187	HZM16	Hitachi	Z02W16V	MMBZ5248B	Motorola	Z02W18V
02DZ4.7	Toshiba	KDZ4.7V	DSB010	Sanyo	KDS193	HZM18	Hitachi	Z02W18V	MMBZ5250B	Motorola	Z02W20V
02DZ5.1	Toshiba	KDZ5.1V	DSC010	Sanyo	KDS190	HZM20	Hitachi	Z02W20V	MMBZ5251B	Motorola	Z02W22V
02DZ5.6	Toshiba	KDZ5.6V	DSD010	Sanyo	KDS196	HZM22	Hitachi	Z02W22V	MMBZ5252B	Motorola	Z02W24V
02DZ6.2	Toshiba	KDZ6.2V	DZD4.3	Sanyo	Z02W4.3V	HZM24	Hitachi	Z02W24V	SVC202SPA	Sanyo	KDV147
02DZ6.8	Toshiba	KDZ6.8V	DZD4.7	Sanyo	Z02W4.7V	MA151K	Matsushita	KDS193	SVC212	Sanyo	KDV804S
02DZ7.5	Toshiba	KDZ7.5V	DZD5.1	Sanyo	Z02W5.1V	MA151WA	Matsushita	KDS181	SVC251SPA	Sanyo	KDV251M
02DZ8.2	Toshiba	KDZ8.2V	DZD5.6	Sanyo	Z02W5.6V	MA151WK	Matsushita	KDS184	SVC321SPA	Sanyo	KDV149

### ■ SBDs

Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
1SS357	Toshiba	KDR357	D10SC6M	Shindengen	B10A60VIC	MBR1545CT	Motorola	B15A45VIC	SBL540	GI	B5A45VI
1SS367	Toshiba	KDR367	D15SCA4M	Shindengen	B15A45VIC	MBRA130LT3	Motorola	SMAB13	SFPA-53	Sanken	SMAB13
1SS378	Toshiba	KDR378	ERC62M-004	Fuji	B10A45VI	MBRA140LT3	Motorola	SMAB14	SFPA-73	Sanken	SMAB33
1SS385F	Toshiba	KDR378E	ESAD82-004	Fuji	B15A45VIC	MBRF1045	Motorola	B10A45VI	SFPB-54	Sanken	SMAB14
1SS392	Toshiba	KDR393	F10P048	IR	B10A45VIC	MBRF1545CT	Motorola	B15A45VIC	SFPJ-53	Sanken	SMAB13
1SS393	Toshiba	KDR322	FMB-24H	Sanken	B15A45VIC	PBYR1045	PHILIPS	B10A45VI	SFPJ-73	Sanken	SMAB33
1SS393	Toshiba	KDR393S	FMB-24L	Sanken	B10A45VIC	PBYR1545CT	PHILIPS	B15A45VIC	SPB-G34S	Sanken	SMAB34
10GWJ2CZ47C	Toshiba	B10A45VIC	FMB-36	Sanken	B15A60VIC	RB053L-30	Rohm	SMAB33	SS13	Fairchild	SMAB13
16GWJ2CZ47	Toshiba	B15A45VIC	FMB-G14L	Sanken	B5A45VI	RB060L-40	Rohm	SMAB34	SS13	GS	SMAB13
5GWJZ47	Toshiba	B5A45VI	FMB-G24H	Sanken	B10A45VI	RB160L-40	Rohm	SMAB14	SS14	Fairchild	SMAB14
B130	Liteon	SMAB13	KDR505S	Sanyo	KDR505S	RB160L-60	Rohm	SMAB16	SS14	GS	SMAB14
B130B	Liteon	SMAB13	MA2S728	Panasonic	KDR728E	RB400D	Rohm	KDR400S	SS16	Fairchild	SMAB16
B140	Liteon	SMAB14	MA721	Matsushita	KDR721S	RB411D	Rohm	KDR411	SS16	GS	SMAB16
B140B	Liteon	SMAB14	MA728	Matsushita	KDR728	RB751S-40	Rohm	KDR377E	STPS1045D	SGS-T	B10A45VI
B160	Liteon	SMAB16	MA729	Matsushita	KDR729	RB751V-40	Rohm	KDR377	STPS1045F	SGS-T	B10A45VI
B160B	Liteon	SMAB16	MB1545CT	Motorola	B15A45VIC	S15SCA4M	Sindengen	B15A45VIC	STPS16L40CF	SGS-T	B15A45VIC
B330A	Liteon	SMAB33	MBR1045	GI	B10A45VI	SAC82-004	Fuji	B10A45VIC	S1PS16L40CT	SGS-T	B15A45VIC
B340A	Liteon	SMAB34	MBR1045	IR	B10A45VI	SB007T03Q	Sanyo	KDR731	U1FWJ44L	Toshiba	SMAB13
D1FH3	Shindengen	SMAB33	MBR1045	Motorola	B10A45VI	SB007W03Q	Sanyo	KDR732	U1FWJ44M	Toshiba	SMAB13
D5S4M	Shindengen	B5A45VI	MBR1545CT	GI	B15A45VIC	SB01-05CP	Sanyo	KDR105S	U1FWJ44N	Toshiba	SMAB13
D10SC4M	Shindengen	B10A45VIC	MBR1545CT	IR	B15A45VIC	SB01-05Q	Sanyo	KDR105	U1GWJ44	Toshiba	SMAB14

### ■ FRDs

10DL2CZ47A	Toshiba	U10A2CIC	ESAC25-02C	Fuji	F1B2CC	FML-G14S	Sanken	U5A4CI	SF10LC40U	Shindengen	U10A4CIC
1SR159-200	Rohm	SMAU1D	ESAC25-02N	Fuji	F1B2CA	FMN-G12S	Sanken	U5A2CI	SF5LC40U	Shindengen	U5A4CIC
1SR56-400	Rohm	SMAU1G	ESAC25M-02C	Fuji	F1B2CCI	FMN-G14S	Sanken	U5A4CI	SFPL-62	Sanken	SMAU1D
5DL2CZ47A	Toshiba	U5A2CIC	ESAC25M-02N	Fuji	F1B2CAI	FMP-G12S	Sanken	U5A2CI	U1DL44A	Toshiba	SMAU1D
5DLZ47A	Toshiba	U5A2CI	FMG-12S	Sanken	U5A2CIC	FMU-22R	Sanken	F1B2CAI	U1GU44	Toshiba	SMAU1G
5GL2CZ47A	Toshiba	U5A4CIC	FMG-14S	Sanken	U5A4CIC	FMU-22S	Sanken	F1B2CCI	US1D	Liteon	SMAU1D
5GLZ47A	Toshiba	U5A4CI	FMG-22S	Sanken	U10A2CIC	FMX-12S	Sanken	U5A2CIC	US1D	GS	SMAU1D
D1FL20U	Shindengen	SMAU1D	FML-12S	Sanken	U5A2CIC	FMX-22S	Sanken	U10A2CIC	US1G	Liteon	SMAU1G
D1FL40	Shindengen	SMAU1G	FML-14S	Sanken	U5A4CIC	FMX-G12S	Sanken	U5A2CI	US1G	GS	SMAU1G
D2FL20U	Shindengen	SMAU2D	FML-22S	Sanken	U10A2CIC	FMX-G14S	Sanken	U5A4CI	US1J	Liteon	SMAU1J
D2FL40	Shindengen	SMAU2G	FML-24S	Sanken	U10A4CIC	RS2GA	Liteon	SMAU2G	US1J	GS	SMAU1J
ES2DA	Liteon	SMAU2D	FML-G12S	Sanken	U5A2CI	SF10LC20U	Shindengen	U10A2CIC	US2JA	Liteon	SMAU2J

### ■ TVS

Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
PSD03	SEMTECH	PG03JSUSC	MSQA6V1W5T2	ON Semi	PG05GBUSV	PSMF12	PROTEK	PG12FBUSV	SLVU2.8SK	Micro Semi	PG2.8CUS23
SD05	SEMTECH	PG05HSUSC	RSA6.1EN	ROHM		SM12	SEMTECH		SL24	SEMTECH	PG24BUS23
PSD05	PROTEK	PG08HSUSC	SM05	SEMTECH		MMBZ15VALTI	ON Semi	PG12GAS23	PSOT24LC	PROTEK	PG24EUSC
PSD08	PROTEK	PG08HSUSC	PSOT05C	PROTEK	PG05HAS23	MMBZ15VDA	GS		SD024C	SEMTECH	PG24EUSC
SL05	SEMTECH	PG05BUS23	MMBZ6V8ALT1	ON Semi		SDC15	SEMTECH		SM24	SEMTECH	PG24FAS23
PSOT05LC	PROTEK		SM05	Micro Semi		MMBZ15VDLTI	ON Semi	PG12GCS23	PSOT24C	PROTEK	
SD05C	SEMTECH	PG05GBUSC	SL12	SEMTECH	PG12BUS23	MMBZ15VDC	GS		SM24	Micro Semi	
PSD05C	PROTEK		PSOT12LC	PROTEK		SD12	SEMTECH	PG12GSUSC	MMBZ27VDA	GS	
SMF05	SEMTECH		SD12C	SEMTECH	PG12FBUSC	PSD12	PROTEK				
PSMF05	PROTEK	PG05GBUSV	PSD12C	PROTEK		SLVU2.8	SEMTECH	PG2.8CUS23			
GMF05	VISHAY		SMF12	SEMTECH	PG12FBUSV	SLVU2.8	PROTEK				
SMS05	SEMTECH	PG05HBTS6	SMS12	SEMTECH	PG12GBTS6	SMS24	SEMTECH	PG24FBTS6			
PSMS05	PROTEK		PSMS12	PROTEK		PSMS24	PROTEK				

High Voltage MOSFET (THD Type)

Type No.	Max. Ratings			R <sub>DS(ON)</sub> (Ω)				Q <sub>g</sub> (nC)		Package	Outline (Unit: mm)
	BV <sub>DSS</sub> (V)	I <sub>D</sub> (A)	P <sub>D</sub> (W)	Typ.	Max.	V <sub>GS</sub> (V)	I <sub>D</sub> (A)	Typ.	V <sub>GS</sub> (V)		
KHB9D5N20P	200	9.5	72	0.29	0.36	10	4.75	20	10	TO-220AB	
KHB019N20P	200	19	139	0.14	0.17	10	9.5	40.5	10		
KHB8D8N25P	250	8.8	74	0.35	0.45	10	4.4	29	10		
KHB6D0N40P	400	6	73	0.83	1	10	3	16	10		
KHB011N40P	400	10.5	135	0.5	0.53	10	5.25	28	10		
KHB5D0N50P	500	5	73	1.14	1.4	10	2.5	18	10		
KHB9D0N50P	500	9	135	0.65	0.8	10	4.5	28	10		
KHB2D0N60P	600	2	54	3.8	5	10	1	12.5	10		
KHB4D5N60P	600	4.5	100	2	2.5	10	2.25	22	10		
KHB7D5N60P	600	7.5	147	1	1.2	10	3.75	28	10		
* KHB7D0N65P	650	7	160	1.2	1.4	10	3.5	28	10		
KHB3D0N80P	800	3	107	3.8	5	10	1.5	15	10		
* KHB7D0N80P	800	7	178	1.29	1.55	10	3.5	35	10		
KHB3D0N90P	900	3	130	3.3	4.25	10	1.8	20	10		
KHB9D5N20F	200	9.5	38	0.29	0.36	10	4.75	20	10	TO-220IS	
KHB019N20F	200	19	43	0.14	0.17	10	9.5	40.5	10		
KHB8D8N25F	250	8.8	38	0.35	0.45	10	4.4	29	10		
KHB6D0N40F	400	6	38	0.83	1	10	3	16	10		
KHB011N40F	400	10.5	44	0.5	0.53	10	5.25	28	10		
KHB5D0N50F	500	5	38	1.14	1.4	10	2.5	18	10		
KHB9D0N50F	500	9	44	0.65	0.8	10	4.5	28	10		
KHB2D0N60F	600	2	23	3.8	5	10	1	12.5	10		
KHB4D5N60F	600	4.5	33	2	2.5	10	2.25	22	10		
KHB7D5N60F	600	7.5	48	1	1.2	10	3.75	28	10		
* KHB7D0N65F	650	7	52	1.2	1.4	10	3.5	28	10		
KHB3D0N80F	800	3	39	3.8	5	10	0.9	15	10		
* KHB7D0N80F	800	7	59	1.29	1.55	10	3.5	35	10		
KHB3D0N90F	900	3	43	3.3	4.25	10	1.05	20	10		
KHB1D0N60I	600	1	28	9.7	12	10	0.5	5.9	10	IPAK	
KHB1D9N60I	600	1.9	28	3.8	5	10	0.95	12.5	10		
* KHD0D3N60G	600	0.3	3	13	15	10	0.15	4.9	10	TO-92	
* KHB9D0N90N	900	9	280	1.12	1.4	10	4.5	45	10	TO-3P(N)	
* KHB011N90N	900	11	300	0.91	1.1	10	5.5	60	10		
* KHB9D0N90H	900	9	113	1.12	1.4	10	4.5	45	10	TO-3P(H)IS	
* KHB011N90H	900	11	120	0.91	1.1	10	5.5	60	10		

Note) \* : Under development.

MOSFETs

## High Voltage MOSFET (SMD Type)

Type No.	Max. Ratings			$R_{DS(ON)}$ ( $\Omega$ )				$Q_g$ (nC)		Package	Outline (Unit: mm)
	$BV_{DSS}$ (V)	$I_D$ (A)	$P_D$ (W)	Typ.	Max.	$V_{GS}$ (V)	$I_D$ (A)	Typ.	$V_{GS}$ (V)		
KHB1D0N60D	600	1	28	9.7	12	10	0.5	5.9	10	DPAK	
KHB1D9N60D	600	1.9	44	3.8	5	10	0.95	12.5	10		

## Low Voltage MOSFET (SMD Type)

Type No.	Internal Circuit	Max. Ratings			$V_{th}$ (V)				$R_{DS(ON)}$ (m $\Omega$ )				$Q_g$ (nC)		Package	Outline (Unit: mm)
		$BV_{DSS}$ (V)	$I_D$ (A)	$P_D$ (W)	Min.	Max.	$V_{DS}$ (V)	$I_D$ (A)	Typ.	Max.	$V_{GS}$ (V)	$I_D$ (A)	Typ.	$V_{GS}$ (V)		
KMA6D5P20Q		-20	-6.5	2.5	-0.6	-	$V_{GS}$	-250 $\mu$ A	27	35	-4.5	-6.5	13.6	-4.5	FLP-8	
KMA5D8DP20Q		-20	-5.8	2	-0.6	-	$V_{GS}$	-250 $\mu$ A	29	36	-4.5	-5.8	14	-4.5		
KMA7D0NP30Q		30/-30	7/-5.5	2	1/-1	2/-2	$V_{GS}$	$\pm$ 250 $\mu$ A	22/51	30/78	$\pm$ 4.5	5/-4	19/33	10		
KMA023N30Q		30	23	1.6	1	3	$V_{GS}$	250 $\mu$ A	7	8	4.5	16	41	4.5		
KMA6D0CN20C		20	6	1.25	0.5	1	$V_{GS}$	250 $\mu$ A	20	24	4.5	6	11.2	4.5	TSSOP-8	
*KMA010P20C		-20	-10	2.3	-0.6	-	$V_{GS}$	-250 $\mu$ A	11	14	-4.5	-10	36	-4.5		
KMA6D0P20X		-20	-6	2.1	-0.6	-	$V_{GS}$	-250 $\mu$ A	27	35	-4.5	-6	14	-4.5	TSOP-6	
*KMA4D5P20X		-20	-4.5	2	-0.6	-	$V_{GS}$	-250 $\mu$ A	49	60	-4.5	-4.5	8.5	-4.5		
*KMA2D7DP20X		-20	-2.7	1.2	-0.6	-	$V_{GS}$	-250 $\mu$ A	80	100	-4.5	-2.7	5.9	-4.5		
KMA010N20D		20	10	7.2	0.7	1.5	$V_{GS}$	250 $\mu$ A	35	40	10	10	6	4.5	DPAK	

Note) \* : Under development



■ SMOS FETs (SMD Type)

Type No.	Mark	Internal circuit (Top view)	Max. Ratings				I <sub>DSS</sub> (μA)			V <sub>th</sub> (V)				R <sub>DS(ON)</sub> (Ω)			Package	Outline (Unit: mm)
			V <sub>DS</sub> (V)	V <sub>GSS</sub> (mV)	I <sub>D</sub> (mA)	P <sub>D</sub> (mW)	Max.	V <sub>DS</sub> (V)	V <sub>GS</sub> (V)	Min.	Max.	V <sub>DS</sub> (V)	I <sub>D</sub> (mA)	Max.	V <sub>GS</sub> (V)	I <sub>D</sub> (mA)		
KTK5131V	KA	-	30	±20	50	100	1	30	0	0.5	1.5	3	0.1	40	2.5	10	VSM	
KTK5132V	KB	-	30	±20	100	100	1	30	0	0.5	1.5	3	0.1	7	2.5	10		
KTK5131E	KA	-	30	±20	50	100	1	30	0	0.5	1.5	3	0.1	40	2.5	10	ESM	
KTK5132E	KB	-	30	±20	100	100	1	30	0	0.5	1.5	3	0.1	7	2.5	10		
KTJ6131E	EB	-	-30	±20	-50	100	-1	-30	0	-0.5	-1.5	-3	-0.1	40	-2.5	-10		
KTK5131U	KA		30	±20	50	100	1	30	0	0.5	1.5	3	0.1	40	2.5	10	USM	
KTK5164U	KF		60	±20	200	100	1	60	0	0.5	1.5	10	1	2	2.5	50		
*KTK5266U	WA	-	60	±20	300	100	1	60	0	1.1	2.3	V <sub>GS</sub>	0.25	2.1	5	50		
*KTK5266UK (ESD Protected 2000V)	WC	-	60	±20	300	100	1	60	0	1.1	2.35	V <sub>GS</sub>	0.25	2.1	5	50		
KTK5131S	KA	-	30	±20	50	200	1	30	0	0.5	1.5	3	0.1	40	2.5	10	SOT-23	
KTK5132S	KB	-	30	±20	100	200	1	30	0	0.5	1.5	3	0.1	7	2.5	10		
KTK5133S	KC	-	30	±20	150	200	1	30	0	0.5	1.5	3	0.1	5.2	2.5	40		
KTK5134S	KD	-	30	±20	200	200	1	30	0	0.5	1.5	3	0.1	2	2.5	50		
KTK5162S	KF	-	60	±20	100	200	1	60	0	1	2.4	10	0.1	7.5	10	50		
KTK5164S	KM	-	60	±20	200	200	1	60	0	0.5	1.5	10	1	2	2.5	50		
KTJ6164S	EL	-	-60	±20	-200	200	-1	-60	0	-0.5	-1.5	-10	-1	2	-2.5	50		
2N7002	WA	-	60	±20	300	200	1	60	0	1.1	2.3	V <sub>GS</sub>	0.25	2.1	5	50		
2N7002A	WB	-	60	±20	115	200	1	60	0	1	2.5	V <sub>GS</sub>	0.25	7.5	5	50		
2N7002K (ESD Protected 2000V)	WC	-	60	±20	300	200	1	60	0	1.1	2.35	V <sub>GS</sub>	0.25	2.1	5	50		
KTX321U	BR		-12	-500	150	270	680	-2	-10	-0.25	-200	-10	-	260	-2	-10	US6	
KTX421U	BS		12	500	150	270	680	2	10	0.25	200	10	-	320	2	10		

MOSFETs

■ SMOS FETs (THD Type)

Type No.	Max. Ratings				I <sub>DSS</sub> (μA)			V <sub>th</sub> (V)				R <sub>DS(ON)</sub> (Ω)			Package	Outline (Unit: mm)
	V <sub>DS</sub> (V)	V <sub>GSS</sub> (mV)	I <sub>D</sub> (mA)	P <sub>D</sub> (mW)	Max.	V <sub>DS</sub> (V)	V <sub>GS</sub> (V)	Min.	Max.	V <sub>DS</sub> (V)	I <sub>D</sub> (mA)	Max.	V <sub>GS</sub> (V)	I <sub>D</sub> (mA)		
2N7000	60	±20	300	625	1	60	0	1.1	2.3	V <sub>GS</sub>	250	2.1	5	50	TO-92	
2N7000A	60	±20	200	400	1	48	0	0.8	3	V <sub>GS</sub>	500	5.3	4.5	75		
2N7000K (ESD Protected 2000V)	60	±20	300	625	1	60	0	1.1	2.35	V <sub>GS</sub>	250	2.1	5	50		

## ■ Keyless Entry System

Part No.	Package	fo (MHz)	Terminating Impedance	BW (MHz)	I/L(dBmax)	Ripple (dBmax)	Etc.
KF304V	SC-44	303.8	50 $\Omega$	fo $\pm$ 0.4	3	1.5	BPF
KF311BV	SC-44	311.06	150 $\Omega$	fo $\pm$ 1.0	3	1.5	BPF
KF311V	SC-44	311.06	50 $\Omega$	fo $\pm$ 1.0	3	1.5	BPF
KF315AU	SC-33	315	50 $\Omega$	fo $\pm$ 0.3	3	1.5	BPF
KF315V	SC-44	315	50 $\Omega$	fo $\pm$ 0.3	3	1.5	BPF
* KF315BU	SC-33	315	50 $\Omega$	fo $\pm$ 0.2	3	1.5	BPF
KF433V	SC-44	433.5	50 $\Omega$	fo $\pm$ 2.0	4	2	BPF
KF448AV	SC-44	448	50 $\Omega$	fo $\pm$ 2.0	4	2	BPF
KF448BU	SC-33	448	150 $\Omega$	fo $\pm$ 1.0	4	2	BPF

Note) \* : Under development

## ■ Transceiver

Part No.	Package	fo (MHz)	Terminating Impedance	BW (MHz)	I/L(dBmax)	Ripple (dBmax)	Etc.
KF410BV	SC-44	410	150 $\Omega$	fo $\pm$ 2.0	4	2	BPF
KF422BV	SC-44	422	150 $\Omega$	fo $\pm$ 2.0	4	2	BPF
KF426BV	SC-44	426	150 $\Omega$	fo $\pm$ 2.0	4	2	BPF
KF434BV	SC-44	434	150 $\Omega$	fo $\pm$ 2.0	4	2	BPF
KF446BV	SC-44	446	150 $\Omega$	fo $\pm$ 2.0	4	2	BPF
KF448BV	SC-44	448	150 $\Omega$	fo $\pm$ 2.0	4	2	BPF
KF465AU	SC-33	465	150 $\Omega$	fo $\pm$ 3.0	4	2	BPF
KF465AV	SC-44	465	150 $\Omega$	fo $\pm$ 3.0	4	2	BPF
KF410V	SC-44	410	50 $\Omega$	fo $\pm$ 5.0	4	2	BPF
KF422V	SC-44	422	50 $\Omega$	fo $\pm$ 2.0	4	2	BPF
KF446V	SC-44	446	50 $\Omega$	fo $\pm$ 5.0	4	2	BPF
KF446AU	SC-33	446	50 $\Omega$	fo $\pm$ 2.0	4	2	BPF
KF465V	SC-44	465	50 $\Omega$	fo $\pm$ 3.0	4	2	BPF
KF477V	SC-44	477	50 $\Omega$	fo $\pm$ 2.0	4	2	BPF

## ■ Cordless Phone

Part No.	Package	fo (MHz)	Terminating Impedance	BW (MHz)	I/L(dBmax)	Ripple (dBmax)	Etc.
KF823V	SC-44	823.5	50 $\Omega$ +10nH	fo $\pm$ 1.0	4	1.5	BPF
KF903AV	SC-44	903	50 $\Omega$	fo $\pm$ 1.2	4.5	1.5	BPF
KF914V	SC-44	914.5	50 $\Omega$ +10nH	fo $\pm$ 1.0	4	1.5	BPF
KF915FU	SC-33	915	50 $\Omega$	fo $\pm$ 1.3	3.5	2	BPF
KF920V	SC-44	920.5	50 $\Omega$ +10nH	fo $\pm$ 1.0	4	1.5	BPF
KF927AV	SC-44	927	50 $\Omega$	fo $\pm$ 1.2	5	1.5	BPF
KF959V	SC-44	959.5	50 $\Omega$ +10nH	fo $\pm$ 1.0	4	1.5	BPF
*KF90327W1	SL-44A	903	50 $\Omega$	fo $\pm$ 1.0	4.5	1.5	Duplexer
*KF92703W1	SL-44A	927	50 $\Omega$	fo $\pm$ 1.0	4.5	1.5	Duplexer

Note) \* : Under development

## ■ CDMA 450 Mobile Phone

Part No.	Package	fo (MHz)	Terminating Impedance	BW (MHz)	I/L (dBmax)	Ripple (dBmax)	Etc.
KF455FV	SC-44	455.0	50 $\Omega$	fo $\pm$ 2.5	2.8	2	BPF
KF455FU	SC-33	455.0	50 $\Omega$	fo $\pm$ 2.5	2.8	2	BPF
KF465CV	SC-44	465.0	50 $\Omega$	fo $\pm$ 2.5	3.8	2	BPF
KF465DU	SC-33	465.0	50 $\Omega$	fo $\pm$ 2.5	3.8	2	BPF
KF465LU1	SC-33A	465.0	50 $\Omega$ /100 $\Omega$	fo $\pm$ 2.5	3.8	2	BPF
KFX6555FR	SF-55	465	50 $\Omega$	fo $\pm$ 2.5	4.5	2	Duplexer
KF463LU1	SC-33A	463.0	50 $\Omega$ /100 $\Omega$	fo $\pm$ 2.5	3.8	2	BPF

■ CDMA 800 Mobile Phone

Part No.	Package	fo (MHz)	Terminating Impedance	BW (MHz)	I/L (dBmax)	Ripple (dBmax)	Etc.
KF836FU	SC-33	836.5	50 Ω	fo ±12.5	3.5	2	BPF
KF881FU	SC-33	881.5	50 Ω	fo ±12.5	3.5	2	BPF

■ Paging System

Part No.	Package	fo (MHz)	Terminating Impedance	BW (MHz)	I/L (dBmax)	Ripple (dBmax)	Etc.
KF930V	SC-44	930.5	50+10nH	fo ±2.0	4	2	BPF
KF930AV	SC-44	930.5	50 Ω	fo ±2.0	4	2	BPF

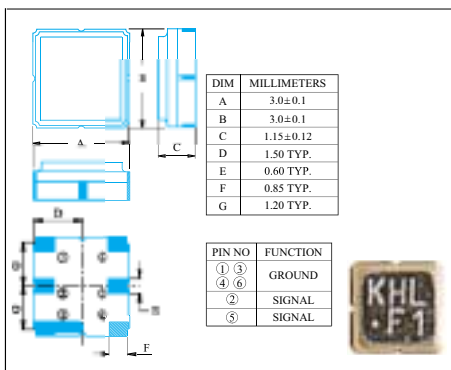
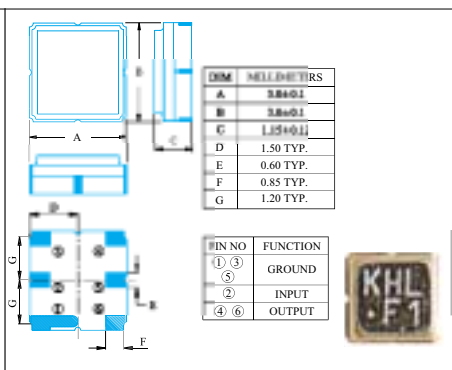
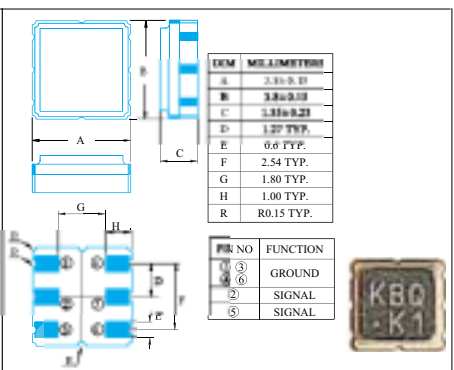
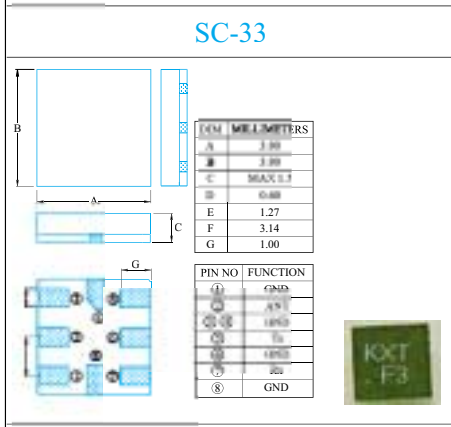
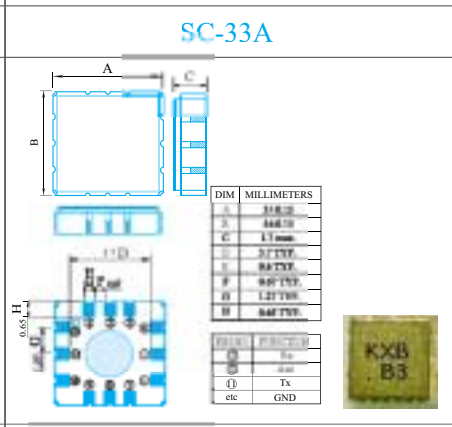
■ GPS

Part No.	Package	fo (MHz)	Terminating Impedance	BW (MHz)	I/L (dBmax)	Ripple (dBmax)	Etc.
KF1575FU	SC-33	1575.42	50 Ω	fo ±1.2	2.2	1	BPF

■ Wireless Data Communication System

Part No.	Package	fo (MHz)	Terminating Impedance	BW (MHz)	I/L (dBmax)	Ripple (dBmax)	Etc.
KF939U	SC-33	939	50+10nH	2	4	1.5	BPF
KF939V	SC-44	939	50+10nH	2	4	1.5	BPF

◆ Package Dimension (Unit : mm)

 <p><b>SC-33</b></p>	 <p><b>SC-33A</b></p>	 <p><b>SC-44</b></p>
 <p><b>SL-44A</b></p>	 <p><b>SF-55</b></p>	

SAW Devices

◆ Packaging Quantity

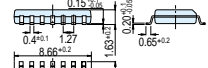
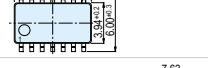
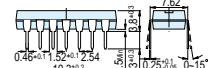
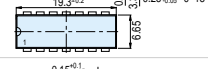
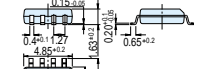
Package	Quantity	Unit	Reel Dimension
SC-33	2000	pcs	φ 180mm
SC-44	1000	pcs	φ 180mm

## Industrial & General Purpose ICs

### OP Amp.

Type No.	Function	Operating Voltage(V)	Package	Outline (Unit: mm)
KIA324F	Quad OP Amp.	$\pm 18$ or 36	FLP-14	
KIA324P	Quad OP Amp.	$\pm 18$ or 36	DIP-14	 [FLP-14]
KIA358F	Dual OP Amp.	$\pm 18$ or 36	FLP-8	
KIA358AFK	Dual OP Amp.	$\pm 6$ or 12	US8	 [DIP-14]
KIA75S358F	Single OP Amp.	$\pm 18$ or 36	TSV	
KIA358P	Dual OP Amp.	$\pm 18$ or 36	DIP-8	
KIA4558F	Dual Low Noise OP Amp.	$\pm 18$ or 36	FLP-8	 [US8]
KIA75S558F	Single Low Noise OP Amp.	$\pm 18$ or 36	TSV	
KIA4558P	Dual Low Noise OP Amp.	$\pm 18$ or 36	DIP-8	 [TSV]
KIA4559F	Dual Low Noise OP Amp.	$\pm 18$ or 36	FLP-8	
KIA4559P	Dual Low Noise OP Amp.	$\pm 18$ or 36	DIP-8	 [DIP-8]

### Comparator

Type No.	Function	Operating Voltage(V)	Package	Outline (Unit: mm)
KIA339F	Quad Voltage Comparator	$\pm 18$ or 36	FLP-14	
KIA339P	Quad Voltage Comparator	$\pm 18$ or 36	DIP-14	 [FLP-14]
KIA393F	Dual Voltage Comparator	$\pm 18$ or 36	FLP-8	
KIA75S393F	Single Voltage Comparator	$\pm 18$ or 36	TSV	
KIA393P	Dual Voltage Comparator	$\pm 18$ or 36	DIP-8	 [DIP-8]

■ Voltage Stabilizer

Type No.	Mark	Function	Voltage Reference Tolerance (%)	Operating Voltage(V)	Package	Outline (Unit: mm)
KIA431B	-	Shunt Regulator	0.5	2.5~36	TO-92	
* KIA2431BP	-	Shunt Regulator	0.5	1.24~16		
KIA431A	-	Shunt Regulator	1	2.5~36		
KIA2431AP	-	Shunt Regulator	1	1.24~16		
KIA2431P	-	Shunt Regulator	1.5	1.24~16		
KIA431	-	Shunt Regulator	2.2	2.5~36		
KIA431BF	3C	Shunt Regulator	0.5	2.5~36	SOT-89	
KIA431AF	3B	Shunt Regulator	1	2.5~36		
KIA431F	3A	Shunt Regulator	2.2	2.5~36		
* KIA2431BS	24C	Shunt Regulator	0.5	1.24~16	TSM	
KIA2431AS	24B	Shunt Regulator	1	1.24~16		
KIA2431S	24A	Shunt Regulator	1.5	1.24~16		
KIA431S	43A	Shunt Regulator	2.2	2.5~20		
KIA431AS	43B	Shunt Regulator	1	2.5~20		
KIA431BS	43C	Shunt Regulator	0.5	2.5~20		
* KIA2431BT	24C	Shunt Regulator	0.5	1.24~16	TSV	
KIA2431AT	24B	Shunt Regulator	1	1.24~16		
KIA2431T	24A	Shunt Regulator	1.5	1.24~16		

Note) \* : Under development

Integrated Circuits

## ■ Voltage Detector (Active Low)

Type No.	Mark	Max. Ratings		Detecting Volts. Vs (V)			Low-Level Output	Hysteresis Volts. ΔVs (mV)			Circuit Current at on. IccL (μA)		Circuit Current at off. IccH (μA)		Package	Outline (Unit: mm)
		Vcc (V)	Pd (mW)	(Rt=200 Ω, Vol ≤ 0.4V)			Rt=200 Ω	Rt=200 Ω			Vcc=Vsmín-0.05V		Vcc=5.25V			
		Min.	Typ.	Max.	Max.	Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.				
KIA7019AF	6A	-0.3 ~ +15.0	500	1.75	1.9	2.05	0.4	30	50	100	300	500	30	50	SOT-89	
KIA7021AF	6B	-0.3 ~ +15.0	500	1.95	2.1	2.25	0.4	30	50	100	300	500	30	50		
KIA7023AF	6C	-0.3 ~ +15.0	500	2.15	2.3	2.45	0.4	30	50	100	300	500	30	50		
KIA7025AF	6D	-0.3 ~ +15.0	500	2.35	2.5	2.65	0.4	30	50	100	300	500	30	50		
KIA7027AF	6E	-0.3 ~ +15.0	500	2.55	2.7	2.85	0.4	30	50	100	300	500	30	50		
KIA7029AF	6F	-0.3 ~ +15.0	500	2.75	2.9	3.05	0.4	30	50	100	300	500	30	50		
KIA7031AF	6G	-0.3 ~ +15.0	500	2.95	3.1	3.25	0.4	30	50	100	300	500	30	50		
KIA7032AF	6H	-0.3 ~ +15.0	500	3.05	3.2	3.35	0.4	30	50	100	300	500	30	50		
KIA7033AF	6J	-0.3 ~ +15.0	500	3.15	3.3	3.45	0.4	30	50	100	300	500	30	50		
KIA7034AF	6K	-0.3 ~ +15.0	500	3.25	3.4	3.55	0.4	30	50	100	300	500	30	50		
KIA7035AF	6L	-0.3 ~ +15.0	500	3.35	3.5	3.65	0.4	30	50	100	300	500	30	50		
KIA7036AF	6M	-0.3 ~ +15.0	500	3.45	3.6	3.75	0.4	30	50	100	300	500	30	50		
KIA7039AF	6N	-0.3 ~ +15.0	500	3.75	3.9	4.05	0.4	30	50	100	300	500	30	50		
KIA7042AF	6P	-0.3 ~ +15.0	500	4.05	4.2	4.35	0.4	30	50	100	300	500	30	50		
KIA7045AF	6R	-0.3 ~ +15.0	500	4.35	4.5	4.65	0.4	30	50	100	300	500	30	50		
KIA7019AP	-	-0.3 ~ +15.0	400	1.75	1.9	2.05	0.4	30	50	100	300	500	30	50	TO-92	
KIA7021AP	-	-0.3 ~ +15.0	400	1.95	2.1	2.25	0.4	30	50	100	300	500	30	50		
KIA7023AP	-	-0.3 ~ +15.0	400	2.15	2.3	2.45	0.4	30	50	100	300	500	30	50		
KIA7025AP	-	-0.3 ~ +15.0	400	2.35	2.5	2.65	0.4	30	50	100	300	500	30	50		
KIA7027AP	-	-0.3 ~ +15.0	400	2.55	2.7	2.85	0.4	30	50	100	300	500	30	50		
KIA7029AP	-	-0.3 ~ +15.0	400	2.75	2.9	3.05	0.4	30	50	100	300	500	30	50		
KIA7031AP	-	-0.3 ~ +15.0	400	2.95	3.1	3.25	0.4	30	50	100	300	500	30	50		
KIA7032AP	-	-0.3 ~ +15.0	400	3.05	3.2	3.35	0.4	30	50	100	300	500	30	50		
KIA7033AP	-	-0.3 ~ +15.0	400	3.15	3.3	3.45	0.4	30	50	100	300	500	30	50		
KIA7034AP	-	-0.3 ~ +15.0	400	3.25	3.4	3.55	0.4	30	50	100	300	500	30	50		
KIA7035AP	-	-0.3 ~ +15.0	400	3.35	3.5	3.65	0.4	30	50	100	300	500	30	50		
KIA7036AP	-	-0.3 ~ +15.0	400	3.45	3.6	3.75	0.4	30	50	100	300	500	30	50		
KIA7039AP	-	-0.3 ~ +15.0	400	3.75	3.9	4.05	0.4	30	50	100	300	500	30	50		
KIA7042AP	-	-0.3 ~ +15.0	400	4.05	4.2	4.35	0.4	30	50	100	300	500	30	50		
KIA7045AP	-	-0.3 ~ +15.0	400	4.35	4.5	4.65	0.4	30	50	100	300	500	30	50		
KIA7019AT	6A	-0.3 ~ +15.0	350	1.75	1.9	2.05	0.4	30	50	100	300	500	30	50	TSM	
* KIA7021AT	6B	-0.3 ~ +15.0	350	1.95	2.1	2.25	0.4	30	50	100	300	500	30	50		
* KIA7023AT	6C	-0.3 ~ +15.0	350	2.15	2.3	2.45	0.4	30	50	100	300	500	30	50		
KIA7025AT	6D	-0.3 ~ +15.0	350	2.35	2.5	2.65	0.4	30	50	100	300	500	30	50		
KIA7027AT	6E	-0.3 ~ +15.0	350	2.55	2.7	2.85	0.4	30	50	100	300	500	30	50		
KIA7029AT	6F	-0.3 ~ +15.0	350	2.75	2.9	3.05	0.4	30	50	100	300	500	30	50		
KIA7031AT	6G	-0.3 ~ +15.0	350	2.95	3.1	3.25	0.4	30	50	100	300	500	30	50		
KIA7032AT	6H	-0.3 ~ +15.0	350	3.05	3.2	3.35	0.4	30	50	100	300	500	30	50		
KIA7033AT	6J	-0.3 ~ +15.0	350	3.15	3.3	3.45	0.4	30	50	100	300	500	30	50		
KIA7034AT	6K	-0.3 ~ +15.0	350	3.25	3.4	3.55	0.4	30	50	100	300	500	30	50		
KIA7035AT	6L	-0.3 ~ +15.0	350	3.35	3.5	3.65	0.4	30	50	100	300	500	30	50		
KIA7036AT	6M	-0.3 ~ +15.0	350	3.45	3.6	3.75	0.4	30	50	100	300	500	30	50		
KIA7039AT	6N	-0.3 ~ +15.0	350	3.75	3.9	4.05	0.4	30	50	100	300	500	30	50		
KIA7042AT	6P	-0.3 ~ +15.0	350	4.05	4.2	4.35	0.4	30	50	100	300	500	30	50		
KIA7045AT	6R	-0.3 ~ +15.0	350	4.35	4.5	4.65	0.4	30	50	100	300	500	30	50		

Note) \*: Under development

■ CMOS Voltage Detector (with time delay)

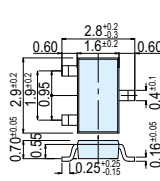
Type No.	Operating Voltage [V]	P <sub>D</sub> [mW]	Detecting Voltage. V <sub>DET</sub> [V]			Reset Active Timeout Period [ms]			Output Options	Package	Outline (Unit: mm)
			Min.	Typ.	Max.	Min.	Typ.	Max.			
KIC3520SB-232	1.2 ~ 5.5	350	2.29	2.32	2.35	150	250	400	Push-Pull Active High	TSM	
KIC3520SB-263	1.2 ~ 5.5	350	2.59	2.63	2.67	150	250	400	Push-Pull Active High		
KIC3520SB-293	1.2 ~ 5.5	350	2.89	2.93	2.97	150	250	400	Push-Pull Active High		
KIC3520SB-308A	1.2 ~ 5.5	350	3.03	3.08	3.13	30	50	100	Push-Pull Active High		
KIC3520SB-308	1.2 ~ 5.5	350	3.03	3.08	3.13	150	250	400	Push-Pull Active High		
KIC3520SB-438	1.2 ~ 5.5	350	4.31	4.38	4.45	150	250	400	Push-Pull Active High		
KIC3520SB-463	1.2 ~ 5.5	350	4.56	4.63	4.70	150	250	400	Push-Pull Active High		
KIC3522SB-22	1.2 ~ 5.5	350	2.17	2.20	2.23	150	250	400	Push-Pull Active Low		
KIC3522SB-232	1.2 ~ 5.5	350	2.29	2.32	2.35	150	250	400	Push-Pull Active Low		
KIC3522SB-245	1.2 ~ 5.5	350	2.41	2.45	2.49	150	250	400	Push-Pull Active Low		
KIC3522SB-263	1.2 ~ 5.5	350	2.59	2.63	2.67	150	250	400	Push-Pull Active Low		
KIC3522SB-293A	1.2 ~ 5.5	350	2.89	2.93	2.97	30	50	100	Push-Pull Active Low		
KIC3522SB-293	1.2 ~ 5.5	350	2.89	2.93	2.97	150	250	400	Push-Pull Active Low		
KIC3522SB-308A	1.2 ~ 5.5	350	3.03	3.08	3.13	30	50	100	Push-Pull Active Low		
KIC3522SB-308	1.2 ~ 5.5	350	3.03	3.08	3.13	150	250	400	Push-Pull Active Low		
KIC3522SB-438	1.2 ~ 5.5	350	4.31	4.38	4.45	150	250	400	Push-Pull Active Low		
KIC3522SB-463	1.2 ~ 5.5	350	4.56	4.63	4.70	150	250	400	Push-Pull Active Low		
KIC3524SB-232	1.2 ~ 5.5	350	2.29	2.32	2.35	150	250	400	Open Drain Active Low		
KIC3524SB-263	1.2 ~ 5.5	350	2.59	2.63	2.67	150	250	400	Open Drain Active Low		
KIC3524SB-293	1.2 ~ 5.5	350	2.89	2.93	2.97	150	250	400	Open Drain Active Low		
KIC3524SB-308	1.2 ~ 5.5	350	3.03	3.08	3.13	150	250	400	Open Drain Active Low		
KIC3524SB-438	1.2 ~ 5.5	350	4.31	4.38	4.45	150	250	400	Open Drain Active Low		
KIC3524SB-463	1.2 ~ 5.5	350	4.56	4.63	4.70	150	250	400	Open Drain Active Low		

■ CMOS Voltage Detector (with time delay, Manual Reset)

Type No.	Operating Voltage [V]	P <sub>D</sub> [mW]	Detecting Voltage. V <sub>DET</sub> [V]			Reset Active Timeout Period [ms]			Output Options	Package	Outline (Unit: mm)
			Min.	Typ.	Max.	Min.	Typ.	Max.			
KIC3526SB-232	1.2 ~ 5.5	320	2.29	2.32	2.35	150	250	400	Push-Pull Active Low	SOT-143	
KIC3526SB-263	1.2 ~ 5.5	320	2.59	2.63	2.67	150	250	400	Push-Pull Active Low		
KIC3526SB-293	1.2 ~ 5.5	320	2.89	2.93	2.97	150	250	400	Push-Pull Active Low		
KIC3526SB-308	1.2 ~ 5.5	320	3.03	3.08	3.13	150	250	400	Push-Pull Active Low		
KIC3526SB-438	1.2 ~ 5.5	320	4.31	4.38	4.45	150	250	400	Push-Pull Active Low		
KIC3526SB-463	1.2 ~ 5.5	320	4.56	4.63	4.70	150	250	400	Push-Pull Active Low		
KIC3527SB-232	1.2 ~ 5.5	320	2.29	2.32	2.35	150	250	400	Push-Pull Active High		
KIC3527SB-263	1.2 ~ 5.5	320	2.59	2.63	2.67	150	250	400	Push-Pull Active High		
KIC3527SB-293	1.2 ~ 5.5	320	2.89	2.93	2.97	150	250	400	Push-Pull Active High		
KIC3527SB-308	1.2 ~ 5.5	320	3.03	3.08	3.13	150	250	400	Push-Pull Active High		
KIC3527SB-438	1.2 ~ 5.5	320	4.31	4.38	4.45	150	250	400	Push-Pull Active High		
KIC3527SB-463	1.2 ~ 5.5	320	4.56	4.63	4.70	150	250	400	Push-Pull Active High		
KIC3528SB-232	1.2 ~ 5.5	320	2.29	2.32	2.35	150	250	400	Open Drain Active Low		
KIC3528SB-263	1.2 ~ 5.5	320	2.59	2.63	2.67	150	250	400	Open Drain Active Low		
KIC3528SB-293	1.2 ~ 5.5	320	2.89	2.93	2.97	150	250	400	Open Drain Active Low		
KIC3528SB-300	1.2 ~ 5.5	320	2.96	3.00	3.05	150	250	400	Open Drain Active Low		
KIC3528SB-308	1.2 ~ 5.5	320	3.03	3.08	3.13	150	250	400	Open Drain Active Low		
KIC3528SB-438	1.2 ~ 5.5	320	4.26	4.32	4.38	150	250	400	Open Drain Active Low		
KIC3528SB-463	1.2 ~ 5.5	320	4.56	4.63	4.70	150	250	400	Open Drain Active Low		

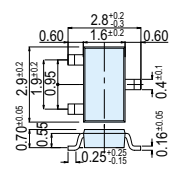
Integrated Circuits

## ■ CMOS Voltage Detector (Active Low, CMOS output)

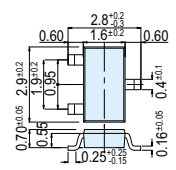
Type No.	Mark	Operating Voltage [V]	Pd [mW]	Detecting Voltage. VDET [V]			Hysteresis Voltage [V]			Supply Current		Package	Outline (Unit: mm)
				Min.	Typ.	Max.	Min.	Typ.	Max.	Typ.	Max.		
KIC31CC16T	-	0.7~12.0	350	1.568	1.6	1.632	0.032	0.08	0.128	0.8	3.6		
KIC31CC17T	-	0.7~12.0	350	1.666	1.7	1.734	0.034	0.085	0.136	0.8	3.6		
KIC31CC18T	-	0.7~12.0	350	1.764	1.8	1.836	0.036	0.09	0.144	0.8	3.6		
KIC31CC19T	-	0.7~12.0	350	1.862	1.9	1.938	0.038	0.095	0.152	0.8	3.6		
KIC31CC20T	-	0.7~12.0	350	1.96	2	2.04	0.04	0.1	0.16	0.8	3.6		
KIC31CC21T	-	0.7~12.0	350	2.058	2.1	2.142	0.042	0.105	0.168	0.8	3.6		
KIC31CC22T	-	0.7~12.0	350	2.156	2.2	2.244	0.044	0.11	0.176	0.8	3.6		
KIC31CC23T	-	0.7~12.0	350	2.254	2.3	2.346	0.046	0.115	0.184	0.8	3.6		
KIC31CC24T	-	0.7~12.0	350	2.352	2.4	2.448	0.048	0.12	0.192	0.8	3.6		
KIC31CC25T	-	0.7~12.0	350	2.45	2.5	2.55	0.05	0.125	0.2	0.8	3.6		
KIC31CC26T	-	0.7~12.0	350	2.548	2.6	2.652	0.052	0.13	0.208	0.8	3.6		
KIC31CC27T	-	0.7~12.0	350	2.646	2.7	2.754	0.054	0.135	0.216	0.8	3.6		
KIC31CC28T	-	0.7~12.0	350	2.744	2.8	2.856	0.056	0.14	0.224	0.8	3.6		
KIC31CC29T	-	0.7~12.0	350	2.842	2.9	2.958	0.058	0.145	0.232	0.8	3.6		
KIC31CC30T	-	0.7~12.0	350	2.94	3	3.06	0.06	0.15	0.24	0.8	3.6		
KIC31CC31T	-	0.7~12.0	350	3.038	3.1	3.162	0.062	0.155	0.248	0.8	3.6		
KIC31CC32T	-	0.7~12.0	350	3.136	3.2	3.264	0.064	0.16	0.256	0.8	3.6		
KIC31CC33T	-	0.7~12.0	350	3.234	3.3	3.366	0.066	0.165	0.264	0.8	3.6		
KIC31CC34T	-	0.7~12.0	350	3.332	3.4	3.468	0.068	0.17	0.272	0.8	3.6		
KIC31CC35T	-	0.7~12.0	350	3.43	3.5	3.57	0.07	0.175	0.28	0.8	3.6		
KIC31CC36T	-	0.7~12.0	350	3.528	3.6	3.672	0.072	0.18	0.288	0.8	3.6		
KIC31CC37T	-	0.7~12.0	350	3.626	3.7	3.774	0.074	0.185	0.296	0.8	3.6		
KIC31CC38T	-	0.7~12.0	350	3.724	3.8	3.876	0.076	0.19	0.304	0.8	3.6		
KIC31CC39T	-	0.7~12.0	350	3.822	3.9	3.978	0.078	0.195	0.312	0.8	3.6		
KIC31CC40T	-	0.7~12.0	350	3.92	4	4.08	0.08	0.2	0.32	0.8	3.6		
KIC31CC41T	-	0.7~12.0	350	4.018	4.1	4.182	0.082	0.205	0.328	0.8	3.6		
KIC31CC42T	-	0.7~12.0	350	4.116	4.2	4.284	0.084	0.21	0.336	0.8	3.6		
KIC31CC43T	-	0.7~12.0	350	4.214	4.3	4.386	0.086	0.215	0.344	0.8	3.6		
KIC31CC44T	-	0.7~12.0	350	4.312	4.4	4.488	0.088	0.22	0.352	0.8	3.6		
KIC31CC45T	-	0.7~12.0	350	4.41	4.5	4.59	0.09	0.225	0.36	0.8	3.6		
KIC31CC46T	-	0.7~12.0	350	4.508	4.6	4.692	0.092	0.23	0.368	0.8	3.6		
KIC31CC47T	-	0.7~12.0	350	4.606	4.7	4.794	0.094	0.235	0.376	0.8	3.6		
KIC31CC48T	-	0.7~12.0	350	4.704	4.8	4.896	0.096	0.24	0.384	0.8	3.6		
KIC31CC49T	-	0.7~12.0	350	4.802	4.9	4.998	0.098	0.245	0.392	0.8	3.6		
KIC31CC50T	-	0.7~12.0	350	4.9	5	5.1	0.1	0.25	0.4	0.8	3.6		
KIC31CC51T	-	0.7~12.0	350	4.998	5.1	5.202	0.102	0.255	0.408	0.8	3.6		
KIC31CC52T	-	0.7~12.0	350	5.096	5.2	5.304	0.104	0.26	0.416	0.8	3.6		
KIC31CC53T	-	0.7~12.0	350	5.194	5.3	5.406	0.106	0.265	0.424	0.8	3.6		
KIC31CC54T	-	0.7~12.0	350	5.292	5.4	5.508	0.108	0.27	0.432	0.8	3.6		
KIC31CC55T	-	0.7~12.0	350	5.39	5.5	5.61	0.11	0.275	0.44	0.8	3.6		
KIC31CC56T	-	0.7~12.0	350	5.488	5.6	5.712	0.112	0.28	0.448	0.8	3.6		
KIC31CC57T	-	0.7~12.0	350	5.586	5.7	5.814	0.114	0.285	0.456	0.8	3.6		
KIC31CC58T	-	0.7~12.0	350	5.684	5.8	5.916	0.116	0.29	0.464	0.8	3.6		
KIC31CC59T	-	0.7~12.0	350	5.782	5.9	6.018	0.118	0.295	0.472	0.8	3.6		
KIC31CC60T	-	0.7~12.0	350	5.88	6	6.12	0.12	0.3	0.48	0.8	3.6		



■ CMOS Voltage Detector (Active Low, Open-Drain output)

Type No.	Mark	Operating Voltage [V]	P <sub>D</sub> [mW]	Detecting Voltage. VDET [V]			Hysteresis Voltage [V]			Supply Current		Package	Outline (Unit: mm)
				Min.	Typ.	Max.	Min.	Typ.	Max.	Typ.	Max.		
KIC31CN16T	-	0.7~12.0	350	1.568	1.6	1.632	0.032	0.08	0.128	0.8	3.6		
KIC31CN17T	-	0.7~12.0	350	1.666	1.7	1.734	0.034	0.085	0.136	0.8	3.6		
KIC31CN18T	-	0.7~12.0	350	1.764	1.8	1.836	0.036	0.09	0.144	0.8	3.6		
KIC31CN19T	-	0.7~12.0	350	1.862	1.9	1.938	0.038	0.095	0.152	0.8	3.6		
KIC31CN20T	-	0.7~12.0	350	1.96	2	2.04	0.04	0.1	0.16	0.8	3.6		
KIC31CN21T	-	0.7~12.0	350	2.058	2.1	2.142	0.042	0.105	0.168	0.8	3.6		
KIC31CN22T	-	0.7~12.0	350	2.156	2.2	2.244	0.044	0.11	0.176	0.8	3.6		
KIC31CN23T	-	0.7~12.0	350	2.254	2.3	2.346	0.046	0.115	0.184	0.8	3.6		
KIC31CN24T	-	0.7~12.0	350	2.352	2.4	2.448	0.048	0.12	0.192	0.8	3.6		
KIC31CN25T	-	0.7~12.0	350	2.45	2.5	2.55	0.05	0.125	0.2	0.8	3.6		
KIC31CN26T	-	0.7~12.0	350	2.548	2.6	2.652	0.052	0.13	0.208	0.8	3.6		
KIC31CN27T	-	0.7~12.0	350	2.646	2.7	2.754	0.054	0.135	0.216	0.8	3.6		
KIC31CN28T	-	0.7~12.0	350	2.744	2.8	2.856	0.056	0.14	0.224	0.8	3.6		
KIC31CN29T	-	0.7~12.0	350	2.842	2.9	2.958	0.058	0.145	0.232	0.8	3.6		
KIC31CN30T	-	0.7~12.0	350	2.94	3	3.06	0.06	0.15	0.24	0.8	3.6		
KIC31CN31T	-	0.7~12.0	350	3.038	3.1	3.162	0.062	0.155	0.248	0.8	3.6		
KIC31CN32T	-	0.7~12.0	350	3.136	3.2	3.264	0.064	0.16	0.256	0.8	3.6		
KIC31CN33T	-	0.7~12.0	350	3.234	3.3	3.366	0.066	0.165	0.264	0.8	3.6		
KIC31CN34T	-	0.7~12.0	350	3.332	3.4	3.468	0.068	0.17	0.272	0.8	3.6		
KIC31CN35T	-	0.7~12.0	350	3.43	3.5	3.57	0.7	0.175	0.28	0.8	3.6		
KIC31CN36T	-	0.7~12.0	350	3.528	3.6	3.672	0.072	0.18	0.288	0.8	3.6		
KIC31CN37T	-	0.7~12.0	350	3.626	3.7	3.774	0.074	0.185	0.296	0.8	3.6		
KIC31CN38T	-	0.7~12.0	350	3.724	3.8	3.876	0.076	0.19	0.304	0.8	3.6		
KIC31CN39T	-	0.7~12.0	350	3.822	3.9	3.978	0.078	0.195	0.312	0.8	3.6		
KIC31CN40T	-	0.7~12.0	350	3.92	4	4.08	0.08	0.2	0.32	0.8	3.6		
KIC31CN41T	-	0.7~12.0	350	4.018	4.1	4.182	0.082	0.205	0.328	0.8	3.6		
KIC31CN42T	-	0.7~12.0	350	4.116	4.2	4.284	0.084	0.21	0.336	0.8	3.6		
KIC31CN43T	-	0.7~12.0	350	4.214	4.3	4.386	0.086	0.215	0.344	0.8	3.6		
KIC31CN44T	-	0.7~12.0	350	4.312	4.4	4.488	0.088	0.22	0.352	0.8	3.6		
KIC31CN45T	-	0.7~12.0	350	4.41	4.5	4.59	0.09	0.225	0.36	0.8	3.6		
KIC31CN46T	-	0.7~12.0	350	4.508	4.6	4.692	0.092	0.23	0.368	0.8	3.6		
KIC31CN47T	-	0.7~12.0	350	4.606	4.7	4.794	0.094	0.235	0.376	0.8	3.6		
KIC31CN48T	-	0.7~12.0	350	4.704	4.8	4.896	0.096	0.24	0.384	0.8	3.6		
KIC31CN49T	-	0.7~12.0	350	4.802	4.9	4.998	0.098	0.245	0.392	0.8	3.6		
KIC31CN50T	-	0.7~12.0	350	4.9	5	5.1	0.1	0.25	0.4	0.8	3.6		
KIC31CN51T	-	0.7~12.0	350	4.998	5.1	5.202	0.102	0.255	0.408	0.8	3.6		
KIC31CN52T	-	0.7~12.0	350	5.096	5.2	5.304	0.104	0.26	0.416	0.8	3.6		
KIC31CN53T	-	0.7~12.0	350	5.194	5.3	5.406	0.106	0.265	0.424	0.8	3.6		
KIC31CN54T	-	0.7~12.0	350	5.292	5.4	5.508	0.108	0.27	0.432	0.8	3.6		
KIC31CN55T	-	0.7~12.0	350	5.39	5.5	5.61	0.11	0.275	0.44	0.8	3.6		
KIC31CN56T	-	0.7~12.0	350	5.488	5.6	5.712	0.112	0.28	0.448	0.8	3.6		
KIC31CN57T	-	0.7~12.0	350	5.586	5.7	5.814	0.114	0.285	0.456	0.8	3.6		
KIC31CN58T	-	0.7~12.0	350	5.684	5.8	5.916	0.116	0.29	0.464	0.8	3.6		
KIC31CN59T	-	0.7~12.0	350	5.782	5.9	6.018	0.118	0.295	0.472	0.8	3.6		
KIC31CN60T	-	0.7~12.0	350	5.88	6	6.12	0.12	0.3	0.48	0.8	3.6		

TSM



## ■ Voltage Detector (Active High)

Type No.	Mark	Max. Ratings		Detecting Volts. Vs (V)			Low-Level Output Volts. VOL (V)		Hysteresis Volts. ΔVs (mV)			Circuit Current at on. IccH(μA)		Circuit Current at off. IccL(μA)		Package	Outline (Unit: mm)
		VCC (V)	Pd (mW)	RL=4.7 kΩ, VOH ≥ VOL-0.4V			RL=4.7 kΩ		RL=4.7 kΩ			VCC=Vsmín-0.05V		VCC=5.25V			
		Min.	Typ.	Max.	Min.	Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.					
KIA7419F	4A	-0.3 ~ +7.5	500	1.75	1.9	2.05	Vcc-0.4	20	50	100	300	500	30	70	SOT-89		
KIA7421F	4B	-0.3 ~ +7.5	500	1.95	2.1	2.25	Vcc-0.4	20	50	100	300	500	30	70			
KIA7423F	4C	-0.3 ~ +7.5	500	2.15	2.3	2.45	Vcc-0.4	20	50	100	300	500	30	70			
KIA7425F	4D	-0.3 ~ +7.5	500	2.35	2.5	2.65	Vcc-0.4	30	50	100	300	500	30	50			
KIA7427F	4E	-0.3 ~ +7.5	500	2.55	2.7	2.85	Vcc-0.4	30	50	100	300	500	30	50			
KIA7429F	4F	-0.3 ~ +7.5	500	2.75	2.9	3.05	Vcc-0.4	30	50	100	300	500	30	50			
KIA7431F	4G	-0.3 ~ +7.5	500	2.95	3.1	3.25	Vcc-0.4	30	50	100	300	500	30	50			
KIA7432F	4H	-0.3 ~ +7.5	500	3.05	3.2	3.35	Vcc-0.4	30	50	100	300	500	30	50			
KIA7433F	4J	-0.3 ~ +7.5	500	3.15	3.3	3.45	Vcc-0.4	30	50	100	300	500	30	50			
KIA7434F	4K	-0.3 ~ +7.5	500	3.25	3.4	3.55	Vcc-0.4	30	50	100	300	500	30	50			
KIA7435F	4L	-0.3 ~ +7.5	500	3.35	3.5	3.65	Vcc-0.4	30	50	100	300	500	30	50			
KIA7436F	4M	-0.3 ~ +7.5	500	3.45	3.6	3.75	Vcc-0.4	30	50	100	300	500	30	50			
KIA7439F	4N	-0.3 ~ +7.5	500	3.7	3.9	4.1	Vcc-0.4	30	50	100	300	500	30	50			
KIA7442F	4P	-0.3 ~ +7.5	500	4	4.2	4.4	Vcc-0.4	30	50	100	300	500	30	50			
KIA7445F	4R	-0.3 ~ +7.5	500	4.3	4.5	4.7	Vcc-0.4	30	50	100	300	500	30	50			
KIA7419P	-	-0.3 ~ +7.5	400	1.75	1.9	2.05	Vcc-0.4	20	50	100	300	500	30	70			TO-92
KIA7421P	-	-0.3 ~ +7.5	400	1.95	2.1	2.25	Vcc-0.4	20	50	100	300	500	30	70			
KIA7423P	-	-0.3 ~ +7.5	400	2.15	2.3	2.45	Vcc-0.4	20	50	100	300	500	30	70			
KIA7425P	-	-0.3 ~ +7.5	400	2.35	2.5	2.65	Vcc-0.4	30	50	100	300	500	30	50			
KIA7427P	-	-0.3 ~ +7.5	400	2.55	2.7	2.85	Vcc-0.4	30	50	100	300	500	30	50			
KIA7429P	-	-0.3 ~ +7.5	400	2.75	2.9	3.05	Vcc-0.4	30	50	100	300	500	30	50			
KIA7431P	-	-0.3 ~ +7.5	400	2.95	3.1	3.25	Vcc-0.4	30	50	100	300	500	30	50			
KIA7432P	-	-0.3 ~ +7.5	400	3.05	3.2	3.35	Vcc-0.4	30	50	100	300	500	30	50			
KIA7433P	-	-0.3 ~ +7.5	400	3.15	3.3	3.45	Vcc-0.4	30	50	100	300	500	30	50			
KIA7434P	-	-0.3 ~ +7.5	400	3.25	3.4	3.55	Vcc-0.4	30	50	100	300	500	30	50			
KIA7435P	-	-0.3 ~ +7.5	400	3.35	3.5	3.65	Vcc-0.4	30	50	100	300	500	30	50			
KIA7436P	-	-0.3 ~ +7.5	400	3.45	3.6	3.75	Vcc-0.4	30	50	100	300	500	30	50			
KIA7439P	-	-0.3 ~ +7.5	400	3.7	3.9	4.1	Vcc-0.4	30	50	100	300	500	30	50			
KIA7442P	-	-0.3 ~ +7.5	400	4	4.2	4.4	Vcc-0.4	30	50	100	300	500	30	50			
KIA7445P	-	-0.3 ~ +7.5	400	4.3	4.5	4.7	Vcc-0.4	30	50	100	300	500	30	50			

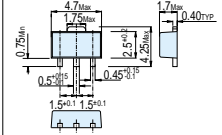
## ■ 1.25V Adjustable Voltage Detector (Active Low)

Type No.	Max. Ratings			Detecting Volts. Vs (V)			Supply Voltage Range VCC			Hysteresis Volts. ΔVs (mV)			Circuit Current at On. IccL(μA)		Circuit Current at Off. IccH(μA)		Package	Outline (Unit: mm)				
	VCC (V)	ISINK (mA)	PD (mW)	Ta=-40 ~ +85 °C			VCC=5V			VCC=5V, VIN=1.2V		VCC=5V, VIN=1.5V										
	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.									
KIA7125F	18	6	240	1.2	1.25	1.3	2	-	17	9	15	23	B	360	B	540	B	360	B	540	FLP-8	
KIA7125P	18	6	500	1.2	1.25	1.3	2	-	17	9	15	23	B	360	B	540	B	360	B	540	DIP-8	

Note) B Type: Open collector type.

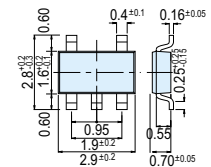
■ 150mA CMOS Low Dropout Voltage Regulator (Positive)

Type No.	Max. Ratings			V <sub>OUT</sub> (V)			Reg. Line (%/V)			Reg. Load (%)			V <sub>DROP</sub> (V)		Package	Outline (Unit: mm)
	V <sub>IN</sub>	I <sub>O</sub>	P <sub>D</sub> (W) (Ta=25 °C)	(Tj=25 °C)			V <sub>IN</sub> (V)	Ta=25 °C		I <sub>OUT</sub> (mA)	I <sub>OUT</sub> (mA)	I <sub>OUT</sub> (mA)				
				Min.	Typ.	Max.		Max.	Min.				Max.			
KIC3220SA-18	6	0.15	2	1.76	1.80	1.84	Vo+1	0.40	4	6	1.0	1	100	0.19	100	
KIC3220SA-20	6	0.15	2	1.96	2.00	2.04	Vo+1	0.40	4	6	0.9	1	100	0.19	100	
KIC3220SA-23	6	0.15	2	2.25	2.30	2.35	Vo+1	0.40	4	6	0.8	1	100	0.19	100	
KIC3220SA-24	6	0.15	2	2.35	2.40	2.45	Vo+1	0.40	4	6	0.8	1	100	0.19	100	
KIC3220SA-25	6	0.15	2	2.45	2.50	2.55	Vo+1	0.40	4	6	0.8	1	100	0.19	100	
KIC3220SA-27	6	0.15	2	2.65	2.70	2.75	Vo+1	0.40	4	6	0.7	1	100	0.19	100	
KIC3220SA-28	6	0.15	2	2.74	2.80	2.86	Vo+1	0.40	4	6	0.7	1	100	0.19	100	
KIC3220SA-285	6	0.15	2	2.79	2.85	2.91	Vo+1	0.40	4	6	0.7	1	100	0.19	100	
KIC3220SA-29	6	0.15	2	2.84	2.90	2.96	Vo+1	0.40	4	6	0.7	1	100	0.19	100	
KIC3220SA-30	6	0.15	2	2.94	3.00	3.06	Vo+1	0.40	4	6	0.6	1	100	0.19	100	
KIC3220SA-33	6	0.15	2	3.23	3.30	3.37	Vo+1	0.40	4	6	0.5	1	100	0.19	100	
KIC3220SA-35	6	0.15	2	3.43	3.50	3.57	Vo+1	0.40	4	6	0.5	1	100	0.19	100	



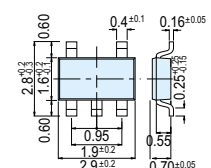
■ 150mA CMOS Low Dropout Voltage Regulator (On/Off Controllable) (Positive)

Type No.	Max. Ratings			V <sub>OUT</sub> (V)			Reg. Line (%/V)			Reg. Load (%)			V <sub>DROP</sub> (V)		Package	Outline (Unit: mm)
	V <sub>IN</sub>	I <sub>O</sub>	P <sub>D</sub> (W) (Ta=25 °C)	(Tj=25 °C)			V <sub>IN</sub> (V)	Ta=25 °C		I <sub>OUT</sub> (mA)	I <sub>OUT</sub> (mA)	I <sub>OUT</sub> (mA)				
				Min.	Typ.	Max.		Max.	Min.				Max.			
KIC3221T-16	7	0.15	0.55	1.57	1.60	1.63	Vo+1	0.4	4	5.5	1.2	1	100	0.19	100	
KIC3221T-17	7	0.15	0.55	1.67	1.70	1.73	Vo+1	0.4	4	5.5	1.1	1	100	0.19	100	
KIC3221T-18	7	0.15	0.55	1.76	1.80	1.84	Vo+1	0.4	4	5.5	1.0	1	100	0.19	100	
KIC3221T-19	7	0.15	0.55	1.86	1.90	1.94	Vo+1	0.4	4	5.5	1.0	1	100	0.19	100	
KIC3221T-20	7	0.15	0.55	1.96	2.00	2.04	Vo+1	0.4	4	5.5	0.9	1	100	0.19	100	
KIC3221T-23	7	0.15	0.55	2.25	2.30	2.35	Vo+1	0.4	4	5.5	0.8	1	100	0.19	100	
KIC3221T-24	7	0.15	0.55	2.35	2.40	2.45	Vo+1	0.4	4	5.5	0.8	1	100	0.19	100	
KIC3221T-25	7	0.15	0.55	2.45	2.50	2.55	Vo+1	0.4	4	5.5	0.8	1	100	0.19	100	
KIC3221T-26	7	0.15	0.55	2.55	2.60	2.65	Vo+1	0.4	4	5.5	0.8	1	100	0.19	100	
KIC3221T-27	7	0.15	0.55	2.65	2.70	2.75	Vo+1	0.4	4	5.5	0.7	1	100	0.19	100	
KIC3221T-28	7	0.15	0.55	2.74	2.80	2.86	Vo+1	0.4	4	5.5	0.7	1	100	0.19	100	
KIC3221T-285	7	0.15	0.55	2.79	2.85	2.91	Vo+1	0.4	4	5.5	0.7	1	100	0.19	100	
KIC3221T-29	7	0.15	0.55	2.84	2.90	2.96	Vo+1	0.4	4	5.5	0.7	1	100	0.19	100	
KIC3221T-30	7	0.15	0.55	2.94	3.00	3.06	Vo+1	0.4	4	5.5	0.6	1	100	0.19	100	
KIC3221T-31	7	0.15	0.55	3.04	3.10	3.16	Vo+1	0.4	4	5.5	0.6	1	100	0.19	100	
KIC3221T-33	7	0.15	0.55	3.23	3.30	3.37	Vo+1	0.4	4	5.5	0.5	1	100	0.19	100	
KIC3221T-35	7	0.15	0.55	3.43	3.50	3.57	Vo+1	0.4	4	5.5	0.5	1	100	0.19	100	
KIC3222T-18	7	0.15	0.55	1.76	1.80	1.84	Vo+1	0.4	4	5.5	1.0	1	100	0.19	100	
KIC3222T-25	7	0.15	0.55	2.45	2.50	2.55	Vo+1	0.4	4	5.5	0.8	1	100	0.19	100	
KIC3222T-27	7	0.15	0.55	2.65	2.70	2.75	Vo+1	0.4	4	5.5	0.7	1	100	0.19	100	
KIC3222T-28	7	0.15	0.55	2.74	2.80	2.86	Vo+1	0.4	4	5.5	0.7	1	100	0.19	100	
KIC3222T-285	7	0.15	0.55	2.79	2.85	2.91	Vo+1	0.4	4	5.5	0.7	1	100	0.19	100	
KIC3222T-30	7	0.15	0.55	2.94	3.00	3.06	Vo+1	0.4	4	5.5	0.6	1	100	0.19	100	
KIC3222T-33	7	0.15	0.55	3.23	3.30	3.37	Vo+1	0.4	4	5.5	0.5	1	100	0.19	100	
KIC3222T-35	7	0.15	0.55	3.43	3.50	3.57	Vo+1	0.4	4	5.5	0.5	1	100	0.19	100	

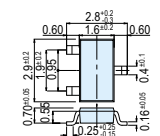


■ 150mA CMOS Low Dropout Voltage Regulator (On/Off Controllable) [High PSRR] (Positive)

Type No.	Max. Ratings			V <sub>OUT</sub> (V)			Reg. Line (%/V)			Reg. Load (%)			V <sub>DROP</sub> (V)		Package	Outline (Unit: mm)
	V <sub>IN</sub>	I <sub>O</sub>	P <sub>D</sub> (W) (Ta=25 °C)	(Tj=25 °C)			V <sub>IN</sub> (V)	Ta=25 °C		I <sub>OUT</sub> (mA)	I <sub>OUT</sub> (mA)	I <sub>OUT</sub> (mA)				
				Min.	Typ.	Max.		Max.	Min.				Max.			
KIC3210T-25	6	0.15	0.55	2.48	2.50	2.53	Vo+1	0.02	Vo+1	6	2.5	0.1	100	0.135	150	
KIC3210T-26	6	0.15	0.55	2.57	2.60	2.63	Vo+1	0.02	Vo+1	6	2.5	0.1	100	0.135	150	
KIC3210T-27	6	0.15	0.55	2.67	2.70	2.73	Vo+1	0.02	Vo+1	6	2.5	0.1	100	0.135	150	
KIC3210T-275	6	0.15	0.55	2.72	2.75	2.78	Vo+1	0.02	Vo+1	6	2.5	0.1	100	0.135	150	
KIC3210T-28	6	0.15	0.55	2.77	2.80	2.83	Vo+1	0.02	Vo+1	6	2.5	0.1	100	0.135	150	
KIC3210T-285	6	0.15	0.55	2.82	2.85	2.88	Vo+1	0.02	Vo+1	6	2.5	0.1	100	0.135	150	
KIC3210T-29	6	0.15	0.55	2.87	2.90	2.93	Vo+1	0.02	Vo+1	6	2.5	0.1	100	0.135	150	
KIC3210T-30	6	0.15	0.55	2.97	3.00	3.03	Vo+1	0.02	Vo+1	6	2.5	0.1	100	0.135	150	
KIC3210T-31	6	0.15	0.55	3.07	3.10	3.13	Vo+1	0.02	Vo+1	6	2.5	0.1	100	0.135	150	
KIC3210T-32	6	0.15	0.55	3.17	3.20	3.23	Vo+1	0.02	Vo+1	6	2.5	0.1	100	0.135	150	
KIC3210T-33	6	0.15	0.55	3.27	3.30	3.33	Vo+1	0.02	Vo+1	6	2.5	0.1	100	0.135	150	
KIC3210T-35	6	0.15	0.55	3.47	3.50	3.54	Vo+1	0.02	Vo+1	6	2.5	0.1	100	0.135	150	



## ■ 200mA CMOS Low Dropout Voltage Regulator (Positive)

Type No.	Max. Ratings			V <sub>OUT</sub> (V)				Reg. Line (%/V)			Reg. Load (%)			V <sub>DROP</sub> (V)		Package	Outline (Unit: mm )
	V <sub>IN</sub>	I <sub>O</sub>	PD(W) (Ta=25℃)	(Tj=25℃)			V <sub>IN</sub> (V)	Ta=25℃ Max.	V <sub>IN</sub> (V)		Ta=25℃ Typ.	I <sub>OUT</sub> (mA)		(Tj=25℃) Typ.	I <sub>OUT</sub> (mA)		
				Min.	Typ.	Max			Min.	Max.		Min.	Max				
KIC3202T-12	7	0.2	0.35	1.18	1.20	1.23	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100	TSM	
KIC3202T-13	7	0.2	0.35	1.27	1.30	1.33	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-14	7	0.2	0.35	1.37	1.40	1.43	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-15	7	0.2	0.35	1.47	1.50	1.53	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-16	7	0.2	0.35	1.57	1.60	1.63	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-17	7	0.2	0.35	1.67	1.70	1.73	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-18	7	0.2	0.35	1.76	1.80	1.84	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-19	7	0.2	0.35	1.86	1.90	1.94	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-20	7	0.2	0.35	1.96	2.00	2.04	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-21	7	0.2	0.35	2.06	2.10	2.14	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-22	7	0.2	0.35	2.16	2.20	2.24	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-23	7	0.2	0.35	2.25	2.30	2.35	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-24	7	0.2	0.35	2.35	2.40	2.45	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-25	7	0.2	0.35	2.45	2.50	2.55	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-26	7	0.2	0.35	2.55	2.60	2.65	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-27	7	0.2	0.35	2.65	2.70	2.75	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-28	7	0.2	0.35	2.74	2.80	2.86	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-29	7	0.2	0.35	2.84	2.90	2.96	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-30	7	0.2	0.35	2.94	3.00	3.06	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-31	7	0.2	0.35	3.04	3.10	3.16	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-32	7	0.2	0.35	3.14	3.20	3.26	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-33	7	0.2	0.35	3.23	3.30	3.37	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-34	7	0.2	0.35	3.33	3.40	3.47	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-35	7	0.2	0.35	3.43	3.50	3.57	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-36	7	0.2	0.35	3.53	3.60	3.67	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-37	7	0.2	0.35	3.63	3.70	3.77	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-38	7	0.2	0.35	3.72	3.80	3.88	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-39	7	0.2	0.35	3.82	3.90	3.98	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-40	7	0.2	0.35	3.92	4.00	4.08	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-41	7	0.2	0.35	4.02	4.10	4.18	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-42	7	0.2	0.35	4.12	4.20	4.28	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-43	7	0.2	0.35	4.21	4.30	4.39	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-44	7	0.2	0.35	4.31	4.40	4.49	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-45	7	0.2	0.35	4.41	4.50	4.59	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-46	7	0.2	0.35	4.51	4.60	4.69	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-47	7	0.2	0.35	4.61	4.70	4.79	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-48	7	0.2	0.35	4.70	4.80	4.90	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-49	7	0.2	0.35	4.80	4.90	5.00	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		
KIC3202T-50	7	0.2	0.35	4.90	5.00	5.10	Vo+1	0.25	Vo+1	7	2	1	100	0.25	100		

■ 400mA CMOS Low Dropout Voltage Regulator (Positive)

Type No.	Max. Ratings			V <sub>OUT</sub> (V)			V <sub>IN</sub> (V)	Reg. Line (%/V)			Reg. Load (%)			V <sub>DROP</sub> (V)		Package	Outline (Unit: mm)
	V <sub>IN</sub>	I <sub>O</sub>	Pd(W) (Ta=25 °C)	(Tj=25 °C)				Ta=25 °C Max.	V <sub>IN</sub> (V)		Ta=25 °C Typ.	I <sub>OUT</sub> (mA)		(Tj=25 °C) Typ.	I <sub>OUT</sub> (mA)		
				Min.	Typ.	Max.			Min.	Max.		Min.	Max.				
KIC3201T-30	8	0.4	0.5	2.94	3.00	3.06	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200	SOT-89	
KIC3201T-31	8	0.4	0.5	3.04	3.10	3.16	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-32	8	0.4	0.5	3.14	3.20	3.26	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-33	8	0.4	0.5	3.23	3.30	3.37	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-34	8	0.4	0.5	3.33	3.40	3.47	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-35	8	0.4	0.5	3.43	3.50	3.57	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-36	8	0.4	0.5	3.53	3.60	3.67	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-37	8	0.4	0.5	3.63	3.70	3.77	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-38	8	0.4	0.5	3.72	3.80	3.88	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-39	8	0.4	0.5	3.82	3.90	3.98	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-40	8	0.4	0.5	3.92	4.00	4.08	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-41	8	0.4	0.5	4.02	4.10	4.18	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-42	8	0.4	0.5	4.12	4.20	4.28	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-43	8	0.4	0.5	4.21	4.30	4.39	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-44	8	0.4	0.5	4.31	4.40	4.49	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-45	8	0.4	0.5	4.41	4.50	4.59	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-46	8	0.4	0.5	4.51	4.60	4.69	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-47	8	0.4	0.5	4.61	4.70	4.79	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-48	8	0.4	0.5	4.70	4.80	4.90	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-49	8	0.4	0.5	4.80	4.90	5.00	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-50	8	0.4	0.5	4.90	5.00	5.10	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-51	8	0.4	0.5	5.00	5.10	5.20	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-52	8	0.4	0.5	5.10	5.20	5.30	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-53	8	0.4	0.5	5.19	5.30	5.41	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-54	8	0.4	0.5	5.29	5.40	5.51	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-55	8	0.4	0.5	5.39	5.50	5.61	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-56	8	0.4	0.5	5.49	5.60	5.71	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-57	8	0.4	0.5	5.59	5.70	5.81	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-58	8	0.4	0.5	5.68	5.80	5.92	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-59	8	0.4	0.5	5.78	5.90	6.02	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		
KIC3201T-60	8	0.4	0.5	5.88	6.00	6.12	Vo+1	0.3	Vo+1	8	1.4	1	200	0.4	200		

■ 30mA 3-Terminal Low Drop Voltage Regulators (Positive)

Type No.	Mark	Max. Ratings			V <sub>OUT</sub> (V)			Reg. Line (mV)			Reg. Load (mV)			V <sub>DROP</sub> (V)		Package	Outline (Unit: mm)		
		V <sub>IN</sub> (V)	I <sub>O</sub> (mA)	Pd(mW) (Ta=25 °C)	(Tj=25 °C)			Ta=25 °C Max.	V <sub>IN</sub> (V)		Ta=25 °C Max.	I <sub>OUT</sub> (mA)		(Tj=25 °C) Typ.	I <sub>OUT</sub> (mA)				
					Min.	Typ.	Max.		Min.	Max.		Min.	Max.						
* KIA78DS05BF	8M	29	30	500	4.75	5	5.25	5.35	26	10	9	16	50	5	30	0.1	5	SOT-89	
KIA78DS05BP	-	29	30	600	4.75	5	5.25	5.35	26	10	9	16	50	5	30	0.1	5	TO-92	

Note) \* : Under development

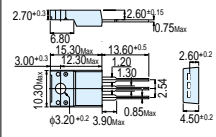
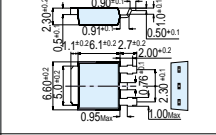
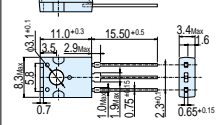
## 0.15A 3-Terminal Voltage Regulators (Positive)

Type No.	Max. Ratings			VOUT (V)			Reg. Line (mV)			Reg. Load (mV)			VDROP(V)		Package	Outline (Unit: mm)
	Mark	VIN (V)	IO (A)	(Tj=25°C)			VIN (V)	(Tj=25°C)		(Tj=25°C)		(Tj=25°C)	IOUT (mA)			
				Min.	Typ.	Max.		Max.	Min.	Max.	Max.			Min.		
KIA78L05F	8A	35	0.15	500	4.75	5	5.25	10	150	7	20	60	1	100	1.7	40
KIA78L06F	8B	35	0.15	500	5.7	6	6.3	11	150	8.1	21	70	1	100	1.7	40
KIA78L08F	8D	35	0.15	500	7.6	8	8.4	14	175	10.5	23	80	1	100	1.7	40
KIA78L09F	8E	35	0.15	500	8.55	9	9.45	15	200	11.4	24	90	1	100	1.7	40
KIA78L10F	8F	35	0.15	500	9.5	10	10.5	16	230	12.5	25	90	1	100	1.7	40
KIA78L12F	8G	35	0.15	500	11.4	12	12.6	19	250	14.5	27	100	1	100	1.7	40
KIA78L15F	8I	35	0.15	500	14.25	15	15.75	23	300	17.5	30	150	1	100	1.7	40
KIA78L18F	8J	40	0.15	500	7.1	18	18.9	27	325	21.4	33	170	1	100	1.7	40
KIA78L20F	8K	40	0.15	500	19	20	21	29	330	23.5	35	180	1	100	1.7	40
KIA78L24F	8L	40	0.15	500	22.8	24	25.2	33	350	27.5	38	200	1	100	1.7	40
KIA78S05P	-	35	0.15	600	4.8	5	5.2	10	150	7	20	60	1	100	1.7	40
KIA78S06P	-	35	0.15	600	5.76	6	6.24	11	150	8.1	21	70	1	100	1.7	40
KIA78S08P	-	35	0.15	600	7.7	8	8.3	14	175	10.5	23	80	1	100	1.7	40
KIA78S09P	-	35	0.15	600	8.64	9	9.36	15	200	11.4	24	90	1	100	1.7	40
KIA78S10P	-	35	0.15	600	9.6	10	10.4	16	230	12.5	25	90	1	100	1.7	40
KIA78S12P	-	35	0.15	600	11.5	12	12.5	19	250	14.5	27	100	1	100	1.7	40
KIA78S15P	-	35	0.15	600	14.4	15	15.6	23	300	17.5	30	150	1	100	1.7	40
KIA78S18P	-	40	0.15	600	17.3	18	18.7	27	325	21.4	33	170	1	100	1.7	40
KIA78S20P	-	40	0.15	600	19.2	20	20.8	29	330	23.5	35	180	1	100	1.7	40
KIA78S24P	-	40	0.15	600	23	24	25	33	350	27.5	38	200	1	100	1.7	40
KIA78L05BP	-	35	0.15	800	4.8	5	5.2	10	150	7	20	60	1	100	1.7	40
KIA78L06BP	-	35	0.15	800	5.76	6	6.24	11	150	8.1	21	70	1	100	1.7	40
KIA78L08BP	-	35	0.15	800	7.7	8	8.3	14	175	10.5	23	80	1	100	1.7	40
KIA78L09BP	-	35	0.15	800	8.64	9	9.36	15	200	11.4	24	90	1	100	1.7	40
KIA78L10BP	-	35	0.15	800	9.6	10	10.4	16	230	12.5	25	90	1	100	1.7	40
KIA78L12BP	-	35	0.15	800	11.5	12	12.5	19	250	14.5	27	100	1	100	1.7	40
KIA78L15BP	-	35	0.15	800	14.4	15	15.6	23	300	17.5	30	150	1	100	1.7	40
KIA78L18BP	-	40	0.15	800	17.3	18	18.7	27	325	21.4	33	170	1	100	1.7	40
KIA78L20BP	-	40	0.15	800	19.2	20	20.8	29	330	23.5	35	180	1	100	1.7	40
KIA78L24BP	-	40	0.15	800	23	24	25	33	350	27.5	38	200	1	100	1.7	40

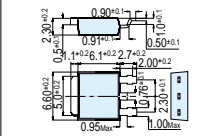
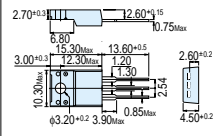
## 0.25A 3-Terminal Low Drop Voltage Regulators (Positive)

Type No.	Max. Ratings			VOUT (V)			Reg. Line (mV)			Reg. Load (mV)			VDROP(V)		Package	Outline (Unit: mm)	
	VIN (V)	IO (A)	Pb(W) (Ta=25°C)	(Ta=-40~85°C)			VIN(V)		VIN(V)	(Tj=25°C)		(Tj=25°C)	IOUT (mA)	(Tj=25°C)			IOUT (mA)
				Min.	Typ.	Max.	Max.	Min.		Max.	Max.						
KIA78DL05F	29	0.25	12	4.5	5	5.5	5.35	26	30	6	26	50	10	200	0.3	50	
KIA78DL06F	29	0.25	12	5.4	6	6.6	6.35	26	36	7	26	60	10	200	0.3	50	
KIA78DL08F	29	0.25	12	7.2	8	8.8	8.35	26	45	9	26	80	10	200	0.3	50	
KIA78DL09F	29	0.25	12	8.1	9	9.9	9.35	26	50	10	26	90	10	200	0.3	50	
KIA78DL10F	29	0.25	12	9	10	11	10.35	26	60	11	26	100	10	200	0.3	50	
KIA78DL12F	29	0.25	12	10.8	12	13.2	12.35	26	70	13	26	120	10	200	0.3	50	
KIA78DL15F	29	0.25	12	13.5	15	16.5	15.35	26	80	16	26	150	10	200	0.3	50	
KIA78DL05PI	29	0.25	20	4.5	5	5.5	5.35	26	30	6	26	50	10	200	0.3	50	
KIA78DL06PI	29	0.25	20	5.4	6	6.6	6.35	26	36	7	26	60	10	200	0.3	50	
KIA78DL08PI	29	0.25	20	7.2	8	8.8	8.35	26	45	9	26	80	10	200	0.3	50	
KIA78DL09PI	29	0.25	20	8.1	9	9.9	9.35	26	50	10	26	90	10	200	0.3	50	
KIA78DL10PI	29	0.25	20	9	10	11	10.35	26	60	11	26	100	10	200	0.3	50	
KIA78DL12PI	29	0.25	20	10.8	12	13.2	12.35	26	70	13	26	120	10	200	0.3	50	
KIA78DL15PI	29	0.25	20	13.5	15	16.5	15.35	26	80	16	26	150	10	200	0.3	50	

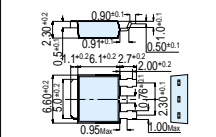
## ■ 0.5A 3-Terminal Voltage Regulators (Positive)

Type No.	Max. Ratings			VOUT (V)			Reg. Line (mV)			Reg. Load (mV)			VDROP(V)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd(W) (Ta=25 °C)	(Tj=25 °C)			VIN (V)	(Tj=25 °C)		VIN(V)	(Tj=25 °C)		IOUT(mA)	IOUT (mA)		
				Min.	Typ.	Max.		Max.	Min.		Max.	Typ.				
KIA78M05PI	35	0.5	20.8	4.8	5	5.2	10	100	7.2	25	100	5	500	2	500	
KIA78M08PI	35	0.5	20.8	7.7	8	8.3	14	100	10.5	25	100	5	500	2	500	
KIA78M12PI	35	0.5	20.8	11.5	12	12.5	19	100	14.5	30	240	5	500	2	500	
KIA78M15PI	35	0.5	20.8	14.4	15	15.6	23	100	17.5	30	300	5	500	2	500	
KIA78M05F	35	0.5	1.3	4.8	5	5.2	10	100	7.2	25	100	5	500	2	500	
KIA78M08F	35	0.5	1.3	7.7	8	8.3	14	100	10.5	25	100	5	500	2	500	
KIA78M12F	35	0.5	1.3	11.5	12	12.5	19	100	14.5	30	240	5	500	2	500	
KIA78M15F	35	0.5	1.3	14.4	15	15.6	23	100	17.5	30	300	5	500	2	500	
KIA78M05T	35	0.5	1.5	4.8	5	5.2	10	100	7.2	25	100	5	500	2	500	
KIA78M08T	35	0.5	1.5	7.7	8	8.3	14	100	10.5	25	100	5	500	2	500	
KIA78M12T	35	0.5	1.5	11.5	12	12.5	19	100	14.5	30	240	5	500	2	500	
KIA78M15T	35	0.5	1.5	14.4	15	15.6	23	100	17.5	30	300	5	500	2	500	

## ■ 1A 3-Terminal Voltage Regulators (Positive)

Type No.	Max. Ratings			VOUT (V)			Reg. Line (mV)			Reg. Load (mV)			VDROP(V)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd(W) (Ta=25 °C)	(Tj=25 °C)			VIN (V)	(Tj=25 °C)		VIN(V)	(Tj=25 °C)		IOUT (A)	IOUT (A)		
				Min.	Typ.	Max.		Max.	Min.		Max.	Max.				
KIA7805AF	35	1	12	4.8	5	5.2	10	100	7	25	100	5	1.4	2	1	
KIA7806AF	35	1	12	5.75	6	6.25	11	120	8	25	120	5	1.4	2	1	
KIA7808AF	35	1	12	7.7	8	8.3	14	160	10.5	25	160	5	1.4	2	1	
KIA7809AF	35	1	12	8.64	9	9.36	15	180	11.5	26	180	5	1.4	2	1	
KIA7810AF	35	1	12	9.6	10	10.4	16	200	12.5	27	200	5	1.4	2	1	
KIA7812AF	35	1	12	11.5	12	12.5	19	240	14.5	30	240	5	1.4	2	1	
KIA7815AF	35	1	12	14.4	15	15.6	23	300	17.5	30	300	5	1.4	2	1	
KIA7818AF	40	1	12	17.3	18	18.7	27	360	21	33	360	5	1.4	2	1	
KIA7820AF	40	1	12	19.2	20	20.8	29	400	23	35	400	5	1.4	2	1	
KIA7824AF	40	1	12	23	24	25	33	480	27	38	480	5	1.4	2	1	
KIA7805API	35	1	20.8	4.8	5	5.2	10	100	7	25	100	5	1.4	2	1	
KIA7806API	35	1	20.8	5.75	6	6.25	11	120	8	25	120	5	1.4	2	1	
KIA7808API	35	1	20.8	7.7	8	8.3	14	160	10.5	25	160	5	1.4	2	1	
KIA7809API	35	1	20.8	8.64	9	9.36	15	180	11.5	26	180	5	1.4	2	1	
KIA7810API	35	1	20.8	9.6	10	10.4	16	200	12.5	27	200	5	1.4	2	1	
KIA7812API	35	1	20.8	11.5	12	12.5	19	240	14.5	30	240	5	1.4	2	1	
KIA7815API	35	1	20.8	14.4	15	15.6	23	300	17.5	30	300	5	1.4	2	1	
KIA7818API	40	1	20.8	17.3	18	18.7	27	360	21	33	360	5	1.4	2	1	
KIA7820API	40	1	20.8	19.2	20	20.8	29	400	23	35	400	5	1.4	2	1	
KIA7824API	40	1	20.8	23	24	25	33	480	27	38	480	5	1.4	2	1	

## ■ 1A SMD Type Low Drop Voltage Regulators (Positive)

Type No.	Max. Ratings			VOUT (V)			Reg. Line (%)			Reg. Load (%)			VDROP(V)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd(W) (Ta=25 °C)	(Ta=25 °C)			VIN (V)	(Ta=25 °C)		VIN(V)	(Ta=25 °C)		IOUT (mA)	VIN (V)		
				Min.	Typ.	Max.		Max.	Min.		Max.	Max.				
KIA78D25F	35	1	1.3	2.438	2.5	2.562	4.2	2.5	3.2	10	2	5	1	0.5	0.95Vo	
KIA78D33F	35	1	1.3	3.22	3.3	3.38	5	2.5	4	10	2	5	1	0.5	0.95Vo	
KIA78D35F	35	1	1.3	3.413	3.5	3.587	5.2	2.5	4.2	10	2	5	1	0.5	0.95Vo	
KIA78D05F	35	1	1.3	4.88	5	5.12	7	2.5	6	12	2	5	1	0.5	0.95Vo	
KIA78D06F	35	1	1.3	5.85	6	6.15	8	2.5	7	15	2	5	1	0.5	0.95Vo	
KIA78D08F	35	1	1.3	7.8	8	8.2	10	2.5	9	25	2	5	1	0.5	0.95Vo	
KIA78D09F	35	1	1.3	8.78	9	9.22	15	2.5	10	25	2	5	1	0.5	0.95Vo	
KIA78D10F	35	1	1.3	9.75	10	10.25	16	2.5	11	26	2	5	1	0.5	0.95Vo	
KIA78D12F	35	1	1.3	11.7	12	12.3	18	2.5	13	29	2	5	1	0.5	0.95Vo	
KIA78D15F	35	1	1.3	14.7	15	15.3	21	2.5	16	32	2	5	1	0.5	0.95Vo	

## ■ 1A Low Drop Voltage Regulators (Positive)

Type No.	Max. Ratings			VOUT (V)			Reg. Line (%)			Reg. Load (%)			VDROP(V)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd(W) (Ta=25°C)	(Ta=25°C)			VIN (V)	(Ta=25°C)		VIN(V)	(Ta=25°C)		VIN (V)			
				Min.	Typ.	Max.		Max.	Min.		Max.	Max.		Min.(mA)		
KIA78D25PI	35	1	2.0	2.438	2.5	2.562	4.2	2.5	3.2	10	2	5	1	0.5	0.95Vo	
KIA78D33PI	35	1	2.0	3.22	3.3	3.38	5	2.5	4	10	2	5	1	0.5	0.95Vo	
KIA78D35PI	35	1	2.0	3.413	3.5	3.587	5.2	2.5	4.2	10	2	5	1	0.5	0.95Vo	
KIA78D05PI	35	1	2.0	4.88	5	5.12	7	2.5	6	12	2	5	1	0.5	0.95Vo	
KIA78D06PI	35	1	2.0	5.85	6	6.15	8	2.5	7	15	2	5	1	0.5	0.95Vo	
KIA78D08PI	35	1	2.0	7.8	8	8.2	10	2.5	9	25	2	5	1	0.5	0.95Vo	
KIA78D09PI	35	1	2.0	8.78	9	9.22	15	2.5	10	25	2	5	1	0.5	0.95Vo	
KIA78D10PI	35	1	2.0	9.75	10	10.25	16	2.5	11	26	2	5	1	0.5	0.95Vo	
KIA78D12PI	35	1	2.0	11.7	12	12.3	18	2.5	13	29	2	5	1	0.5	0.95Vo	
KIA78D15PI	35	1	2.0	14.7	15	15.3	21	2.5	16	32	2	5	1	0.5	0.95Vo	

## ■ 1A 3-Terminal Adjustable Voltage Regulator (Positive)

Type No.	Max. Ratings			Reg. Line (%/V)(Ta=25°C)			Reg. Load (%)			Adjustable Pin Current Iadj (μA)			Current Limit IO(MAX) (A)			Package	Outline (Unit: mm)
	VIN-VOUT (V)	IO (A)	Pd (W)	IO=10(mA)			VIN-VOUT(V)			(Ta=25°C)			(VIN-VOUT) ≤15V, P ≤P <sub>MAX</sub>				
				Max.	Min.	Max.	Max.	Min.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.		
KIA317PI	40	1.5	2.0	0.04	3	40	0.5	10	I <sub>MAX</sub>	-	50	100	1.5	2.2	3.4	TO-220IS	
KIA317F	40	1.5	1.0	0.04	3	40	0.5	10	I <sub>MAX</sub>	-	50	100	1.5	2.2	3.4	DPAK	
KIA317S	40	1.5	0.8	0.04	3	40	0.5	10	I <sub>MAX</sub>	-	50	100	1.5	2.2	3.4	SOT-223	

## ■ 1A 4-Terminal Low Drop Voltage Regulators(On/Off Controllable) (Positive)

Type No.	Max. Ratings			VOUT (V)			Reg. Line (%)			Reg. Load (%)			VDROP(V)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd(W) (Ta=25°C)	(Ta=25°C)			VIN (V)	(Ta=25°C)		VIN(V)	(Ta=25°C)		VIN (V)			
				Min.	Typ.	Max.		Max.	Min.		Max.	Max.		Min.(mA)		
KIA78R00PI	35	1	15	1.26	1.29	1.32	15	2.5	11	28	2	5	1	0.5	0.95Vo	
KIA78R25PI	35	1	15	2.438	2.5	2.562	4.2	2.5	3.2	10	2	5	1	0.5	0.95Vo	
KIA78R33PI	35	1	15	3.22	3.3	3.38	5	2.5	4	10	2	5	1	0.5	0.95Vo	
KIA78R35PI	35	1	15	3.413	3.5	3.587	5.2	2.5	4.2	10	2	5	1	0.5	0.95Vo	
KIA78R05PI	35	1	15	4.88	5	5.12	7	2.5	6	12	2	5	1	0.5	0.95Vo	
KIA78R06PI	35	1	15	5.85	6	6.15	8	2.5	7	15	2	5	1	0.5	0.95Vo	
KIA78R08PI	35	1	15	7.8	8	8.2	10	2.5	9	25	2	5	1	0.5	0.95Vo	
KIA78R09PI	35	1	15	8.78	9	9.22	15	2.5	10	25	2	5	1	0.5	0.95Vo	
KIA78R10PI	35	1	15	9.75	10	10.25	16	2.5	11	26	2	5	1	0.5	0.95Vo	
KIA78R12PI	35	1	15	11.7	12	12.3	18	2.5	13	29	2	5	1	0.5	0.95Vo	
KIA78R15PI	35	1	15	14.7	15	15.3	21	2.5	16	32	2	5	1	0.5	0.95Vo	



## ■ 1A 5-Terminal Low Drop Voltage Regulators(On/Off Controllable) (Positive)

Type No.	Max. Ratings			VOUT (V)			Reg. Line (%)			Reg. Load (%)			VDROP(V)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd(W) (Ta=25 °C)	(Ta=25 °C)			VIN (V)	(Ta=25 °C)		VIN(V)	(Ta=25 °C)		Typ.	VIN (V)		
				Min.	Typ.	Max.		Max.	Min.		Max.	Max.				
KIA78R00F	35	1	8	1.26	1.29	1.32	15	2.5	11	28	2	5	1	0.5	0.95Vo	
KIA78R25F	35	1	8	2.438	2.5	2.562	4.2	2.5	3.2	10	2	5	1	0.5	0.95Vo	
KIA78R33F	35	1	8	3.22	3.3	3.38	5	2.5	4	10	2	5	1	0.5	0.95Vo	
KIA78R35F	35	1	8	3.413	3.5	3.587	5.2	2.5	4.2	10	2	5	1	0.5	0.95Vo	
KIA78R05F	35	1	8	4.88	5	5.12	7	2.5	6	12	2	5	1	0.5	0.95Vo	
KIA78R06F	35	1	8	5.85	6	6.15	8	2.5	7	15	2	5	1	0.5	0.95Vo	
KIA78R08F	35	1	8	7.8	8	8.2	10	2.5	9	25	2	5	1	0.5	0.95Vo	
KIA78R09F	35	1	8	8.78	9	9.22	15	2.5	10	25	2	5	1	0.5	0.95Vo	
KIA78R10F	35	1	8	9.75	10	10.25	16	2.5	11	26	2	5	1	0.5	0.95Vo	
KIA78R12F	35	1	8	11.7	12	12.3	18	2.5	13	29	2	5	1	0.5	0.95Vo	
KIA78R15F	35	1	8	14.7	15	15.3	21	2.5	16	32	2	5	1	0.5	0.95Vo	

## ■ 2A 4-Terminal Low Drop Voltage Regulators(On/Off Controllable) (Positive)

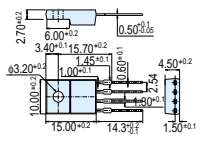
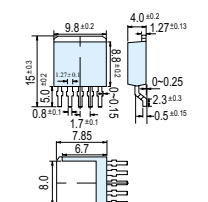
Type No.	Max. Ratings			VOUT (V)			Reg. Line (%)			Reg. Load (%)			VDROP(V)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd(W) (Ta=25 °C)	(Ta=25 °C)			VIN (V)	(Ta=25 °C)		VIN(V)	(Ta=25 °C)		Typ.	VIN (V)		
				Min.	Typ.	Max.		Max.	Min.		Max.	Max.				
KIA278R00PI	35	2	15	1.26	1.29	1.32	15	2.5	11	28	2	5	1	0.5	0.95Vo	
KIA278R25PI	35	2	15	2.438	2.5	2.562	4.2	2.5	3.2	10	2	5	2	0.5	0.95Vo	
KIA278R33PI	35	2	15	3.22	3.3	3.38	5	2.5	4	10	2	5	2	0.5	0.95Vo	
KIA278R35PI	35	2	15	3.143	3.5	3.587	5.2	2.5	4.2	10	2	5	2	0.5	0.95Vo	
KIA278R05PI	35	2	15	4.88	5	5.12	7	2.5	6	12	2	5	2	0.5	0.95Vo	
KIA278R06PI	35	2	15	5.85	6	6.15	8	2.5	7	15	2	5	2	0.5	0.95Vo	
KIA278R08PI	35	2	15	7.8	8	8.2	10	2.5	9	25	2	5	2	0.5	0.95Vo	
KIA278R09PI	35	2	15	8.78	9	9.22	15	2.5	10	25	2	5	2	0.5	0.95Vo	
KIA278R10PI	35	2	15	9.75	10	10.25	16	2.5	11	26	2	5	2	0.5	0.95Vo	
KIA278R12PI	35	2	15	11.7	12	12.3	18	2.5	13	29	2	5	2	0.5	0.95Vo	
KIA278R15PI	35	2	15	14.7	15	15.3	21	2.5	16	32	2	5	2	0.5	0.95Vo	

## ■ 3A Terminal Low Drop Voltage Regulators(On/Off Controllable) (Positive)

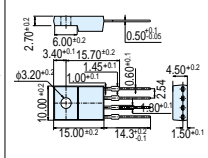
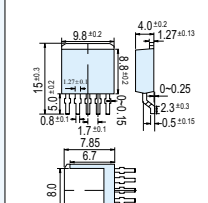
Type No.	Max. Ratings			VOUT (V)			Reg. Line (%)			Reg. Load (%)			VDROP(V)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd(W) (Ta=25 °C)	(Ta=25 °C)			VIN (V)	(Ta=25 °C)		VIN(V)	(Ta=25 °C)		Typ.	VIN (V)		
				Min.	Typ.	Max.		Max.	Min.		Max.	Max.				
KIA378R00PI	35	3	15	1.26	1.29	1.32	15	2.5	11	28	2	5	1	0.5	0.95Vo	
KIA378R25PI	35	3	15	2.438	2.5	2.562	4.2	2.5	3.2	10	2	5	3	0.5	0.95Vo	
KIA378R33PI	35	3	15	3.22	3.3	3.38	5	2.5	4	10	2	5	3	0.5	0.95Vo	
* KIA378R35PI	35	3	15	3.143	3.5	3.587	5.2	2.5	4.2	10	2	5	3	0.5	0.95Vo	
KIA378R05PI	35	3	15	4.88	5	5.12	7	2.5	6	12	2	5	3	0.5	0.95Vo	
KIA378R06PI	35	3	15	5.85	6	6.15	8	2.5	7	15	2	5	3	0.5	0.95Vo	
KIA378R08PI	35	3	15	7.8	8	8.2	10	2.5	9	25	2	5	3	0.5	0.95Vo	
KIA378R09PI	35	3	15	8.78	9	9.22	15	2.5	10	25	2	5	3	0.5	0.95Vo	
KIA378R10PI	35	3	15	9.75	10	10.25	16	2.5	11	26	2	5	3	0.5	0.95Vo	
KIA378R12PI	35	3	15	11.7	12	12.3	18	2.5	13	29	2	5	3	0.5	0.95Vo	
KIA378R15PI	35	3	15	14.7	15	15.3	21	2.5	16	32	2	5	3	0.5	0.95Vo	

Note) \* : Under development

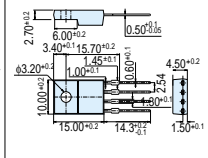
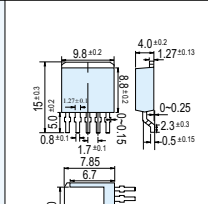
## ■ 2A 4-Terminal Low Drop Voltage Regulators (Low Supply Current & On/Off Controllable) (Positive)

Type No.	Max. Ratings			VOUT (V)				Reg. Line (%)			Reg. Load (%)			Ic(off) (μA)		Package	Outline (Unit: mm)
	VIN (V)	Io (A)	Pd(W) (Ta=25℃)	(Ta=25℃)			VIN (V)	(Ta=25℃)	VIN(V)		(Ta=25℃)	IOUT		(Ta=25℃)	VIN (V)		
				Min.	Typ.	Max.			Max.	Min.		Max.	Min.(mA)				
KIA278R000PI	16	2	1.5	1.225	1.25	1.275	2.35	2.4	Vo+1	10	2	5	2	5	2.8	TO-220IS-4	
KIA278R015PI	16	2	1.5	1.45	1.5	1.55	2.35	2.4	Vo+1	10	2	5	2	5	3.8		
KIA278R018PI	16	2	1.5	1.75	1.8	1.85	2.35	2.4	Vo+1	10	2	5	2	5	3.8		
KIA278R020PI	16	2	1.5	1.95	2	2.05	4	2.4	Vo+1	10	2	5	2	5	4		
KIA278R025PI	16	2	1.5	2.438	2.5	2.562	4.5	2.4	Vo+1	10	2	5	2	5	4.5		
KIA278R030PI	16	2	1.5	2.925	3	3.075	5	2.4	Vo+1	10	2	5	2	5	5		
KIA278R033PI	16	2	1.5	3.218	3.3	3.382	5.3	2.4	Vo+1	10	2	5	2	5	5.3		
KIA278R050PI	16	2	1.5	4.88	5	5.12	7	2.4	Vo+1	10	2	5	2	5	7		
KIA278R000FP	16	2	1.5	1.225	1.25	1.275	2.35	2.4	Vo+1	10	2	5	2	5	2.8	D <sup>3</sup> PAK-5	
KIA278R015FP	16	2	1.5	1.45	1.5	1.55	2.35	2.4	Vo+1	10	2	5	2	5	3.8		
KIA278R018FP	16	2	1.5	1.75	1.8	1.85	2.35	2.4	Vo+1	10	2	5	2	5	3.8		
KIA278R020FP	16	2	1.5	1.95	2	2.05	4	2.4	Vo+1	10	2	5	2	5	4		
KIA278R025FP	16	2	1.5	2.438	2.5	2.562	4.5	2.4	Vo+1	10	2	5	2	5	4.5		
KIA278R030FP	16	2	1.5	2.925	3	3.075	5	2.4	Vo+1	10	2	5	2	5	5		
KIA278R033FP	16	2	1.5	3.218	3.3	3.382	5.3	2.4	Vo+1	10	2	5	2	5	5.3		
KIA278R050FP	16	2	1.5	4.88	5	5.12	7	2.4	Vo+1	10	2	5	2	5	7		

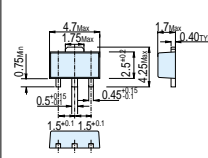
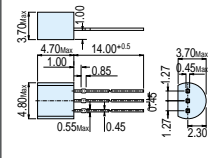
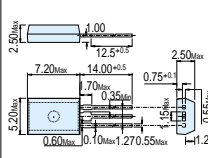
## ■ 3A 4-Terminal Low Drop Voltage Regulators (Low Supply Current & On/Off Controllable) (Positive)

Type No.	Max. Ratings			VOUT (V)				Reg. Line (%)			Reg. Load (%)			Ic(off) (μA)		Package	Outline (Unit: mm)
	VIN (V)	Io (A)	Pd(W) (Ta=25℃)	(Ta=25℃)			VIN (V)	(Ta=25℃)	VIN(V)		(Ta=25℃)	IOUT		(Ta=25℃)	VIN (V)		
				Min.	Typ.	Max.			Max.	Min.		Max.	Min.(mA)				
KIA378R000PI	16	3	1.5	1.225	1.25	1.275	2.35	2.4	Vo+1	10	2	5	3	5	2.8	TO-220IS-4	
KIA378R015PI	16	3	1.5	1.45	1.5	1.55	2.35	2.4	Vo+1	10	2	5	3	5	3.8		
KIA378R018PI	16	3	1.5	1.75	1.8	1.85	2.35	2.4	Vo+1	10	2	5	3	5	3.8		
KIA378R020PI	16	3	1.5	1.95	2	2.05	4	2.4	Vo+1	10	20	5	3	5	4		
KIA378R025PI	16	3	1.5	2.438	2.5	2.562	4.5	2.4	Vo+1	10	20	5	3	5	4.5		
KIA378R030PI	16	3	1.5	2.925	3	3.075	5	2.4	Vo+1	10	20	5	3	5	5		
KIA378R033PI	16	3	1.5	3.218	3.3	3.382	5.3	2.4	Vo+1	10	20	5	3	5	5.3		
KIA378R050PI	16	3	1.5	4.88	5	5.12	7	2.4	Vo+1	10	20	5	3	5	7		
KIA378R000FP	16	3	1.5	1.225	1.25	1.275	2.35	2.4	Vo+1	10	2	5	3	5	2.8	D <sup>3</sup> PAK-5	
KIA378R015FP	16	3	1.5	1.45	1.5	1.55	2.35	2.4	Vo+1	10	2	5	3	5	3.8		
KIA378R018FP	16	3	1.5	1.75	1.8	1.85	2.35	2.4	Vo+1	10	2	5	3	5	3.8		
KIA378R020FP	16	3	1.5	1.95	2	2.05	4	2.4	Vo+1	10	20	5	3	5	4		
KIA378R025FP	16	3	1.5	2.438	2.5	2.562	4.5	2.4	Vo+1	10	20	5	3	5	4.5		
KIA378R030FP	16	3	1.5	2.925	3	3.075	5	2.4	Vo+1	10	20	5	3	5	5		
KIA378R033FP	16	3	1.5	3.218	3.3	3.382	5.3	2.4	Vo+1	10	20	5	3	5	5.3		
KIA378R050FP	16	3	1.5	4.88	5	5.12	7	2.4	Vo+1	10	20	5	3	5	7		

## ■ 5A 4-Terminal Low Drop Voltage Regulators (Low Supply Current & On/Off Controllable) (Positive)

Type No.	Max. Ratings			VOUT (V)				Reg. Line (%)			Reg. Load (%)			Ic(off) (μA)		Package	Outline (Unit: mm)
	VIN (V)	Io (A)	Pd(W) (Ta=25℃)	(Ta=25℃)			VIN (V)	(Ta=25℃)	VIN(V)		(Ta=25℃)	IOUT		(Ta=25℃)	VIN (V)		
				Min.	Typ.	Max.			Max.	Min.		Max.	Min.(mA)				
KIA578R000PI	16	5	1.5	1.225	1.25	1.275	2.35	2.4	Vo+1	10	2	5	5	5	2.8	TO-220IS-4	
KIA578R015PI	16	5	1.5	1.45	1.5	1.55	2.35	2.4	Vo+1	10	2	5	5	5	3.8		
KIA578R018PI	16	5	1.5	1.75	1.8	1.85	2.35	2.4	Vo+1	10	2	5	5	5	3.8		
KIA578R020PI	16	5	1.5	1.95	2	2.05	4	2.4	Vo+1	10	20	5	5	5	4		
KIA578R025PI	16	5	1.5	2.438	2.5	2.562	4.5	2.4	Vo+1	10	20	5	5	5	4.5		
KIA578R030PI	16	5	1.5	2.925	3	3.075	5	2.4	Vo+1	10	20	5	5	5	5		
KIA578R033PI	16	5	1.5	3.218	3.3	3.382	5.3	2.4	Vo+1	10	20	5	5	5	5.3		
KIA578R050PI	16	5	1.5	4.88	5	5.12	7	2.4	Vo+1	10	20	5	5	5	7		
KIA578R000FP	16	5	1.5	1.225	1.25	1.275	2.35	2.4	Vo+1	10	2	5	5	5	2.8	D <sup>3</sup> PAK-5	
KIA578R015FP	16	5	1.5	1.45	1.5	1.55	2.35	2.4	Vo+1	10	2	5	5	5	3.8		
KIA578R018FP	16	5	1.5	1.75	1.8	1.85	2.35	2.4	Vo+1	10	2	5	5	5	3.8		
KIA578R020FP	16	5	1.5	1.95	2	2.05	4	2.4	Vo+1	10	20	5	5	5	4		
KIA578R025FP	16	5	1.5	2.438	2.5	2.562	4.5	2.4	Vo+1	10	20	5	5	5	4.5		
KIA578R030FP	16	5	1.5	2.925	3	3.075	5	2.4	Vo+1	10	20	5	5	5	5		
KIA578R033FP	16	5	1.5	3.218	3.3	3.382	5.3	2.4	Vo+1	10	20	5	5	5	5.3		
KIA578R050FP	16	5	1.5	4.88	5	5.12	7	2.4	Vo+1	10	20	5	5	5	7		

0.15A 3-Terminal Voltage Regulators (Negative)

Type No.	Mark	Max. Ratings			VOUT (V)				Reg. Line (mV)			Reg. Load (mV)			VDROP(V)		Package	Outline (Unit: mm)
		VIN (V)	IO (A)	Pd(mW) (Ta=25°C)	(Tj=25°C)			VIN (V)	(Tj=25°C)		(Tj=25°C)		(Tj=25°C)					
		Min.	Typ.	Max.	Max.	Min.	Max.	Max.	Min.	Max.	Typ.	IOUT (mA)						
KIA79L05F	9A	-35	0.15	500	-5.2	-5	-4.8	-10	150	-20	-7	60	1	100	1.7	40	SOT-89 	
KIA79L06F	9B	-35	0.15	500	-6.24	-6	-5.76	-11	150	-21	-8.1	70	1	100	1.7	40		
KIA79L08F	9C	-35	0.15	500	-8.3	-8	-7.7	-14	175	-23	-10.5	80	1	100	1.7	40		
KIA79L09F	9D	-35	0.15	500	-9.36	-9	-8.64	-15	200	-24	-11.4	90	1	100	1.7	40		
KIA79L10F	9E	-35	0.15	500	-10.4	-10	-9.6	-16	230	-25	-12.5	90	1	100	1.7	40		
KIA79L12F	9F	-35	0.15	500	-12.5	-12	-11.5	-19	250	-27	-14.5	100	1	100	1.7	40		
* KIA79L15F	9G	-35	0.15	500	-15.6	-15	-14.4	-23	300	-30	-17.5	150	1	100	1.7	40		
* KIA79L18F	9H	-40	0.15	500	-18.7	-18	-17.3	-27	325	-33	-20.7	170	1	100	1.7	40		
* KIA79L20F	9I	-40	0.15	500	-20.8	-20	-19.2	-29	330	-35	-23.5	180	1	100	1.7	40		
* KIA79L24F	9J	-40	0.15	500	-25	-24	-23	-33	350	-38	-27	200	1	100	1.7	40		
KIA79S05P	-	-35	0.15	600	-5.2	-5	-4.8	-10	150	-20	-7	60	1	100	1.7	40		TO-92 
KIA79S06P	-	-35	0.15	600	-6.24	-6	-5.76	-11	150	-21	-8.1	70	1	100	1.7	40		
KIA79S08P	-	-35	0.15	600	-8.3	-8	-7.7	-14	175	-23	-10.5	80	1	100	1.7	40		
KIA79S09P	-	-35	0.15	600	-9.36	-9	-8.64	-15	200	-24	-11.4	90	1	100	1.7	40		
KIA79S10P	-	-35	0.15	600	-10.4	-10	-9.6	-16	230	-25	-12.5	90	1	100	1.7	40		
KIA79S12P	-	-35	0.15	600	-12.5	-12	-11.5	-19	250	-27	-14.5	100	1	100	1.7	40		
* KIA79S15P	-	-35	0.15	600	-15.6	-15	-14.4	-23	300	-30	-17.5	150	1	100	1.7	40		
* KIA79S18P	-	-40	0.15	600	-18.7	-18	-17.3	-27	325	-33	-20.7	170	1	100	1.7	40		
* KIA79S20P	-	-40	0.15	600	-20.8	-20	-19.2	-29	330	-35	-23.5	180	1	100	1.7	40		
* KIA79S24P	-	-40	0.15	600	-25	-24	-23	-33	350	-38	-27	200	1	100	1.7	40		
KIA79L05BP	-	-35	0.15	800	-5.2	-5	-4.8	-10	150	-20	-7	60	1	100	1.7	40	TO-92L 	
KIA79L06BP	-	-35	0.15	800	-6.24	-6	-5.76	-11	150	-21	-8.1	70	1	100	1.7	40		
KIA79L08BP	-	-35	0.15	800	-8.3	-8	-7.7	-14	175	-23	-10.5	80	1	100	1.7	40		
KIA79L09BP	-	-35	0.15	800	-9.36	-9	-8.64	-15	200	-24	-11.4	90	1	100	1.7	40		
KIA79L10BP	-	-35	0.15	800	-10.4	-10	-9.6	-16	230	-25	-12.5	90	1	100	1.7	40		
KIA79L12BP	-	-35	0.15	800	-12.5	-12	-11.5	-19	250	-27	-14.5	100	1	100	1.7	40		
* KIA79L15BP	-	-35	0.15	800	-15.6	-15	-14.4	-23	300	-30	-17.5	150	1	100	1.7	40		
* KIA79L18BP	-	-40	0.15	800	-18.7	-18	-17.3	-27	325	-33	-20.7	170	1	100	1.7	40		
* KIA79L20BP	-	-40	0.15	800	-20.8	-20	-19.2	-29	330	-35	-23.5	180	1	100	1.7	40		
* KIA79L24BP	-	-40	0.15	800	-25	-24	-23	-33	350	-38	-27	200	1	100	1.7	40		

Note) \* : Under development

## ■ 0.5A 3-Terminal Voltage Regulators (Negative)

Type No.	Max. Ratings			VOUT (V)			Reg. Line (mV)			Reg. Load (mV)			VDROP(V)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd (W) (Ta=25 °C)	(Tj=25 °C)			VIN (V)	(Tj=25 °C)		VIN(V)	(Tj=25 °C)		IOUT (mA)	IOUT (mA)		
				Min.	Typ.	Max.		Max.	Min.		Max.	Max.				
KIA79M05PI	-35	0.5	20.8	-4.8	-5	-5.2	-10	50	-7	-25	100	5	500	1.1	500	
KIA79M08PI	-35	0.5	20.8	-7.7	-8.0	-8.3	-14	80	-10	-25	160	5	500	1.1	500	
KIA79M12PI	-35	0.5	20.8	-11.5	-12	-12.5	-19	80	-14.5	-30	240	5	500	1.1	500	
KIA79M15PI	-35	0.5	20.8	-14.4	-15	-15.6	-23	80	-17.5	-30	240	5	500	1.1	500	
KIA79M05F	-35	0.5	1.3	-4.8	-5	-5.2	-10	50	-7	-25	100	5	500	1.1	500	
KIA79M08F	-35	0.5	1.3	-7.7	-8.0	-8.3	-14	80	-10	-25	160	5	500	1.1	500	
KIA79M12F	-35	0.5	1.3	-11.5	-12	-12.5	-19	80	-14.5	-30	240	5	500	1.1	500	
KIA79M15F	-35	0.5	1.3	-14.4	-15	-15.6	-23	80	-17.5	-30	240	5	500	1.1	500	
KIA79M05T	-35	0.5	1.5	-4.8	-5	-5.2	-10	50	-7	-25	100	5	500	1.1	500	
KIA79M08T	-35	0.5	1.5	-7.7	-8.0	-8.3	-14	80	-10	-25	160	5	500	1.1	500	
KIA79M12T	-35	0.5	1.5	-11.5	-12	-12.5	-19	80	-14.5	-30	240	5	500	1.1	500	
KIA79M15T	-35	0.5	1.5	-14.4	-15	-15.6	-23	80	-17.5	-30	240	5	500	1.1	500	

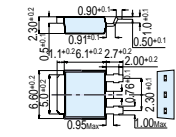
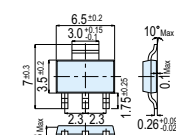
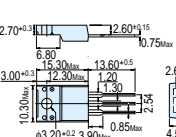
## ■ 1A 3-Terminal Voltage Regulators (Negative)

Type No.	Max. Ratings			VOUT (V)			Reg. Line (mV)			Reg. Load (mV)			VDROP(V)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd(W) (Ta=25 °C)	(Tj=25 °C)			VIN (V)	(Tj=25 °C)		VIN(V)	(Tj=25 °C)		IOUT (mA)	IOUT (mA)		
				Min.	Typ.	Max.		Max.	Min.		Max.	Max.				
KIA7905F	-35	1	12	-5.2	-5	-4.8	-10	50	-12	-8	100	5	1.5	2	1	
KIA7906F	-35	1	12	-6.25	-6	-5.75	-11	60	-13	-9	120	5	1.5	2	1	
KIA7908F	-35	1	12	-8.3	-8	-7.7	-14	80	-17	-11	160	5	1.5	2	1	
KIA7909F	-35	1	12	-9.3	-9	-8.7	-15	90	-19	-13	150	5	1.5	2	1	
KIA7910F	-35	1	12	-10.4	-10	-9.6	-16	100	-20	-14	180	5	1.5	2	1	
KIA7912F	-35	1	12	-12.5	-12	-11.5	-18	120	-22	-16	240	5	1.5	2	1	
KIA7915F	-35	1	12	-15.6	-15	-14.4	-23	150	-26	-20	300	5	1.5	2	1	
KIA7918F	-40	1	12	-18.7	-18	-17.3	-27	180	-30	-24	360	5	1.5	2	1	
KIA7920F	-40	1	12	-20.8	-20	-19.2	-30	180	-32	-26	360	5	1.5	2	1	
KIA7924F	-40	1	12	-25	-24	-23	-33	240	-36	-30	480	5	1.5	2	1	

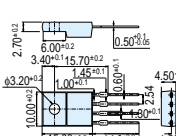
## ■ 1A 3-Terminal Voltage Regulators (Negative)

Type No.	Max. Ratings			VOUT (V)			Reg. Line (mV)			Reg. Load (mV)			VDROP(V)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd(W) (Ta=25 °C)	(Tj=25 °C)			VIN (V)	(Tj=25 °C)		VIN(V)	(Tj=25 °C)		IOUT (mA)	IOUT (mA)		
				Min.	Typ.	Max.		Max.	Min.		Max.	Max.				
KIA7905PI	-35	1	20.8	-5.2	-5	-4.8	-10	50	-12	-8	100	5	1.5	2	1	
KIA7906PI	-35	1	20.8	-6.25	-6	-5.75	-11	60	-13	-9	120	5	1.5	2	1	
KIA7908PI	-35	1	20.8	-8.3	-8	-7.7	-14	80	-17	-11	160	5	1.5	2	1	
KIA7909PI	-35	1	20.8	-9.3	-9	-8.7	-15	90	-19	-13	150	5	1.5	2	1	
KIA7910PI	-35	1	20.8	-10.4	-10	-9.6	-16	100	-20	-14	180	5	1.5	2	1	
KIA7912PI	-35	1	20.8	-12.5	-12	-11.5	-18	120	-22	-16	240	5	1.5	2	1	
KIA7915PI	-35	1	20.8	-15.6	-15	-14.4	-23	150	-26	-20	300	5	1.5	2	1	
KIA7918PI	-40	1	20.8	-18.7	-18	-17.3	-27	180	-30	-24	360	5	1.5	2	1	
KIA7920PI	-40	1	20.8	-20.8	-20	-19.2	-30	180	-32	-26	360	5	1.5	2	1	
KIA7924PI	-40	1	20.8	-25	-24	-23	-33	240	-36	-30	480	5	1.5	2	1	

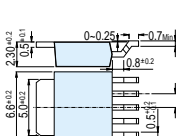
■ 0.5A 3-Terminal Low Drop Voltage Regulators (Low Supply Current) (Positive)

Type No.	Max. Ratings			VOUT (V)				Reg. Line (%)			Reg. Load (%)			IQ (mA)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd(W) (Ta=25°C)	(Ta=25°C)			VIN (V)	(Ta=25°C) Max.	VIN(V)		(Ta=25°C) Max.	IOUT		(Ta=25°C) Typ.	VIN (V)		
				Min.	Typ.	Max.			Min.	Max.		Min.(mA)	Max.(A)				
KIA78DM015F	16	0.5	1	1.45	1.5	1.55	2.8	20	2.8	12	20	5	0.5	0.8	3.8	DPAK-3	
KIA78DM018F	16	0.5	1	1.75	1.8	1.85	2.8	20	2.8	12	20	5	0.5	0.8	3.8		
KIA78DM020F	16	0.5	1	1.95	2	2.05	3	20	3	12	20	5	0.5	0.8	4		
KIA78DM025F	16	0.5	1	2.438	2.5	2.562	3.5	20	3.5	12	20	5	0.5	0.8	4.5		
KIA78DM030F	16	0.5	1	2.925	3	3.075	4	20	4	12	20	5	0.5	0.8	5		
KIA78DM033F	16	0.5	1	3.218	3.3	3.382	4.3	20	4.3	12	20	5	0.5	0.8	5.3		
KIA78DM050F	16	0.5	1	4.88	5	5.12	6	20	6	12	20	5	0.5	0.8	7		
KIA78DM015S	16	0.5	0.8	1.45	1.5	1.55	2.8	20	2.8	12	20	5	0.5	0.8	3.8	SOT-223	
KIA78DM018S	16	0.5	0.8	1.75	1.8	1.85	2.8	20	2.8	12	20	5	0.5	0.8	3.8		
KIA78DM020S	16	0.5	0.8	1.95	2	2.05	3	20	3	12	20	5	0.5	0.8	4		
KIA78DM025S	16	0.5	0.8	2.438	2.5	2.562	3.5	20	3.5	12	20	5	0.5	0.8	4.5		
KIA78DM030S	16	0.5	0.8	2.925	3	3.075	4	20	4	12	20	5	0.5	0.8	5		
KIA78DM033S	16	0.5	0.8	3.218	3.3	3.382	4.3	20	4.3	12	20	5	0.5	0.8	5.3		
KIA78DM050S	16	0.5	0.8	4.88	5	5.12	6	20	6	12	20	5	0.5	0.8	7		
KIA78DM015PI	16	0.5	2	1.45	1.5	1.55	2.8	20	2.8	12	20	5	0.5	0.8	3.8	TO-220IS	
KIA78DM018PI	16	0.5	2	1.75	1.8	1.85	2.8	20	2.8	12	20	5	0.5	0.8	3.8		
KIA78DM020PI	16	0.5	2	1.95	2	2.05	3	20	3	12	20	5	0.5	0.8	4		
KIA78DM025PI	16	0.5	2	2.438	2.5	2.562	3.5	20	3.5	12	20	5	0.5	0.8	4.5		
KIA78DM030PI	16	0.5	2	2.925	3	3.075	4	20	4	12	20	5	0.5	0.8	5		
KIA78DM033PI	16	0.5	2	3.218	3.3	3.382	4.3	20	4.3	12	20	5	0.5	0.8	5.3		
KIA78DM050PI	16	0.5	2	4.88	5	5.12	6	20	6	12	20	5	0.5	0.8	7		

■ 0.5A 4-Terminal Low Drop Voltage Regulators (Low Supply Current & On/Off Controllable) (Positive)

Type No.	Max. Ratings			VOUT (V)				Reg. Line (%)			Reg. Load (%)			Ic(off) (μA)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd(W) (Ta=25°C)	(Ta=25°C)			VIN (V)	(Ta=25°C) Max.	VIN(V)		(Ta=25°C) Max.	IOUT		(Ta=25°C) Typ.	VIN (V)		
				Min.	Typ.	Max.			Min.	Max.		Min.(mA)	Max.(A)				
KIA78RM000PI	16	0.5	1.5	1.225	1.25	1.275	2.8	20	2.8	12	20	5	0.5	-	-	TO-220IS-4	
KIA78RM015PI	16	0.5	1.5	1.45	1.5	1.55	2.8	20	2.8	12	20	5	0.5	5	2.8		
KIA78RM018PI	16	0.5	1.5	1.75	1.8	1.85	2.8	20	2.8	12	20	5	0.5	5	3.8		
KIA78RM020PI	16	0.5	1.5	1.95	2	2.05	3	20	3	12	20	5	0.5	5	3.8		
KIA78RM025PI	16	0.5	1.5	2.438	2.5	2.562	3.5	20	3.5	12	20	5	0.5	5	4		
KIA78RM030PI	16	0.5	1.5	2.925	3	3.075	4	20	4	12	20	5	0.5	5	4.5		
KIA78RM033PI	16	0.5	1.5	3.218	3.3	3.382	4.3	20	4.3	12	20	5	0.5	5	5		
KIA78RM050PI	16	0.5	1.5	4.88	5	5.12	6	20	6	12	20	5	0.5	5	5.3		

■ 0.5A 5-Terminal Low Drop Voltage Regulators (Low Supply Current & On/Off Controllable) (Positive)

Type No.	Max. Ratings			VOUT (V)				Reg. Line (%)			Reg. Load (%)			Ic(off) (μA)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd(W) (Ta=25°C)	(Ta=25°C)			VIN (V)	(Ta=25°C) Max.	VIN(V)		(Ta=25°C) Max.	IOUT		(Ta=25°C) Typ.	VIN (V)		
				Min.	Typ.	Max.			Min.	Max.		Min.(mA)	Max.(A)				
KIA78RM000F	16	0.5	1	1.225	1.25	1.275	-	20	2.8	12	20	5	0.5	-	-	DPAK-5	
KIA78RM015F	16	0.5	1	1.45	1.5	1.55	2.8	20	2.8	12	20	5	0.5	5	2.8		
KIA78RM018F	16	0.5	1	1.75	1.8	1.85	2.8	20	2.8	12	20	5	0.5	5	3.8		
KIA78RM020F	16	0.5	1	1.95	2	2.05	3	20	3	12	20	5	0.5	5	3.8		
KIA78RM025F	16	0.5	1	2.438	2.5	2.562	3.5	20	3.5	12	20	5	0.5	5	4		
KIA78RM030F	16	0.5	1	2.925	3	3.075	4	20	4	12	20	5	0.5	5	4.5		
KIA78RM033F	16	0.5	1	3.218	3.3	3.382	4.3	20	4.3	12	20	5	0.5	5	5		
KIA78RM050F	16	0.5	1	4.88	5	5.12	6	20	6	12	20	5	0.5	5	5.3		

Integrated Circuits

## ■ 1A 3-Terminal Low Drop Voltage Regulators (Low Supply Current) (Positive)

Type No.	Max. Ratings			VOUT (V)				Reg. Line (%)			Reg. Load (%)			IQ (mA)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pp(W) (Ta=25 °C)	(Ta=25 °C)			VIN (V)	(Ta=25 °C)		IOUT		VIN (V)	Typ.				
				Min.	Typ.	Max.		Max.	Min.	Max.	Max.			Min.(mA)	Max.(A)		
KIA78D015PI	16	1	2	1.45	1.5	1.55	3.8	20	2.8	12	20	5	1	0.8	3.8	TO-220IS	
KIA78D018PI	16	1	2	1.75	1.8	1.85	3.8	20	2.8	12	20	5	1	0.8	3.8		
KIA78D020PI	16	1	2	1.95	2	2.05	4	20	3	12	20	5	1	0.8	4		
KIA78D025PI	16	1	2	2.438	2.5	2.562	4.5	20	3.5	12	20	5	1	0.8	4.5		
KIA78D030PI	16	1	2	2.925	3	3.075	5	20	4	12	20	5	1	0.8	5		
KIA78D033PI	16	1	2	3.218	3.3	3.382	5.3	20	4.3	12	20	5	1	0.8	5.3		
KIA78D050PI	16	1	2	4.88	5	5.12	7	20	6	12	20	5	1	0.8	7		
KIA78D015F	16	1	1	1.45	1.5	1.55	3.8	20	2.8	12	20	5	1	0.8	3.8	DPAK-3	
KIA78D018F	16	1	1	1.75	1.8	1.85	3.8	20	2.8	12	20	5	1	0.8	3.8		
KIA78D020F	16	1	1	1.95	2	2.05	4	20	3	12	20	5	1	0.8	4		
KIA78D025F	16	1	1	2.438	2.5	2.562	4.5	20	3.5	12	20	5	1	0.8	4.5		
KIA78D030F	16	1	1	2.925	3	3.075	5	20	4	12	20	5	1	0.8	5		
KIA78D033F	16	1	1	3.218	3.3	3.382	5.3	20	4.3	12	20	5	1	0.8	5.3		
KIA78D050F	16	1	1	4.88	5	5.12	7	20	6	12	20	5	1	0.8	7		
KIA78D015S	16	1	0.8	1.45	1.5	1.55	3.8	20	2.8	12	20	5	1	0.8	3.8	SOT-223	
KIA78D018S	16	1	0.8	1.75	1.8	1.85	3.8	20	2.8	12	20	5	1	0.8	3.8		
KIA78D020S	16	1	0.8	1.95	2	2.05	4	20	3	12	20	5	1	0.8	4		
KIA78D025S	16	1	0.8	2.438	2.5	2.562	4.5	20	3.5	12	20	5	1	0.8	4.5		
KIA78D030S	16	1	0.8	2.925	3	3.075	5	20	4	12	20	5	1	0.8	5		
KIA78D033S	16	1	0.8	3.218	3.3	3.382	5.3	20	4.3	12	20	5	1	0.8	5.3		
KIA78D050S	16	1	0.8	4.88	5	5.12	7	20	6	12	20	5	1	0.8	7		

## ■ 1A 3-Terminal Low Drop Voltage Regulators (Quasi-LDO Type)

Type No.	Max. Ratings			VOUT (V)				Reg. Line (%)			Reg. Load (%)			VDROP (V)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pp(W) (Ta=25 °C)	(Ta=25 °C)			VIN (V)	(Ta=25 °C)		IOUT		VIN (V)	Typ.				
				Min.	Typ.	Max.		Max.	Min.	Max.	Max.			Min.(mA)	Max.(A)		
KIA1117PI00	10	1	2	1.225	1.25	1.275	2.75	0.2	2.75	10	0.5	10	1	1.1	0.95Vo	TO-220IS	
KIA1117PI15	10	1	2	1.47	1.5	1.53	3	0.2	3	10	0.5	10	1	1.1	0.95Vo		
KIA1117PI18	10	1	2	1.764	1.8	1.836	3.3	0.2	3.3	10	0.5	10	1	1.1	0.95Vo		
KIA1117PI25	10	1	2	2.45	2.5	2.55	4	0.2	4	10	0.5	10	1	1.1	0.95Vo		
KIA1117PI28	10	1	2	2.793	2.85	2.907	4.35	0.2	4.35	10	0.5	10	1	1.1	0.95Vo		
KIA1117PI33	10	1	2	3.234	3.3	3.366	4.8	0.2	4.8	10	0.5	10	1	1.1	0.95Vo		
KIA1117PI50	10	1	2	4.9	5	5.1	6.5	0.2	6.5	10	0.5	10	1	1.1	0.95Vo		
KIA1117F00	10	1	1	1.225	1.25	1.275	2.75	0.2	2.75	10	0.5	10	1	1.1	0.95Vo	DPAK-3	
KIA1117F15	10	1	1	1.47	1.5	1.53	3	0.2	3	10	0.5	10	1	1.1	0.95Vo		
KIA1117F18	10	1	1	1.764	1.8	1.836	3.3	0.2	3.3	10	0.5	10	1	1.1	0.95Vo		
KIA1117F25	10	1	1	2.45	2.5	2.55	4	0.2	4	10	0.5	10	1	1.1	0.95Vo		
KIA1117F28	10	1	1	2.793	2.85	2.907	4.35	0.2	4.35	10	0.5	10	1	1.1	0.95Vo		
KIA1117F33	10	1	1	3.234	3.3	3.366	4.8	0.2	4.8	10	0.5	10	1	1.1	0.95Vo		
KIA1117F50	10	1	1	4.9	5	5.1	6.5	0.2	6.5	10	0.5	10	1	1.1	0.95Vo		
KIA1117S00	10	1	0.8	1.225	1.25	1.275	2.75	0.2	2.75	10	0.5	10	1	1.1	0.95Vo	SOT-223	
KIA1117S15	10	1	0.8	1.47	1.5	1.53	3	0.2	3	10	0.5	10	1	1.1	0.95Vo		
KIA1117S18	10	1	0.8	1.764	1.8	1.836	3.3	0.2	3.3	10	0.5	10	1	1.1	0.95Vo		
KIA1117S25	10	1	0.8	2.45	2.5	2.55	4	0.2	4	10	0.5	10	1	1.1	0.95Vo		
KIA1117S28	10	1	0.8	2.793	2.85	2.907	4.35	0.2	4.35	10	0.5	10	1	1.1	0.95Vo		
KIA1117S33	10	1	0.8	3.234	3.3	3.366	4.8	0.2	4.8	10	0.5	10	1	1.1	0.95Vo		
KIA1117S50	10	1	0.8	4.9	5	5.1	6.5	0.2	6.5	10	0.5	10	1	1.1	0.95Vo		

■ 1A 4-Terminal Low Drop Voltage Regulators (Low Supply Current & On/Off Controllable) (Positive)

Type No.	Max. Ratings			VOUT (V)			Reg. Line (%)			Reg. Load (%)			Ic(off) (μA)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd(W) (Ta=25 °C)	(Ta=25 °C)			VIN (V)	(Ta=25 °C)		(Ta=25 °C)		VIN (V)	Max.			
				Min.	Typ.	Max.		Max.	Min.	Max.	Max.			Min.(mA)		
KIA78R000PI	16	1	1.5	1.225	1.25	1.275	2.8	20	2.8	12	20	5	1	-	-	
KIA78R015PI	16	1	1.5	1.45	1.5	1.55	3.8	20	2.8	12	20	5	1	5	3.8	
KIA78R018PI	16	1	1.5	1.75	1.8	1.85	3.8	20	2.8	12	20	5	1	5	3.8	
KIA78R020PI	16	1	1.5	1.95	2	2.05	4	20	3	12	20	5	1	5	4	
KIA78R025PI	16	1	1.5	2.438	2.5	2.562	4.5	20	3.5	12	20	5	1	5	4.5	
KIA78R030PI	16	1	1.5	2.925	3	3.075	5	20	4	12	20	5	1	5	5	
KIA78R033PI	16	1	1.5	3.218	3.3	3.382	5.3	20	4.3	12	20	5	1	5	5.3	
KIA78R050PI	16	1	1.5	4.88	5	5.12	7	20	6	12	20	5	1	5	7	

■ 1A 5-Terminal Low Drop Voltage Regulators (Low Supply Current & On/Off Controllable) (Positive)

Type No.	Max. Ratings			VOUT (V)			Reg. Line (mV)			Reg. Load (%)			Ic(off) (μA)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd(W) (Ta=25 °C)	(Ta=25 °C)			VIN (V)	(Ta=25 °C)		(Ta=25 °C)		VIN (V)	Max.			
				Min.	Typ.	Max.		Max.	Min.	Max.	Max.			Min.(mA)		
KIA78R000F	16	1	1	1.225	1.25	1.275	2.8	20	2.8	12	20	5	1	-	-	
KIA78R015F	16	1	1	1.45	1.5	1.55	3.8	20	2.8	12	20	5	1	5	3.8	
KIA78R018F	16	1	1	1.75	1.8	1.85	3.8	20	2.8	12	20	5	1	5	3.8	
KIA78R020F	16	1	1	1.95	2	2.05	4	20	3	12	20	5	1	5	4	
KIA78R025F	16	1	1	2.438	2.5	2.562	4.5	20	3.5	12	20	5	1	5	4.5	
KIA78R030F	16	1	1	2.925	3	3.075	5	20	4	12	20	5	1	5	5	
KIA78R033F	16	1	1	3.218	3.3	3.382	5.3	20	4.3	12	20	5	1	5	5.3	
KIA78R050F	16	1	1	4.88	5	5.12	7	20	6	12	20	5	1	5	7	

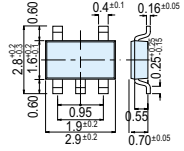
■ 1.5A 3-Terminal Low Drop Voltage Regulators (Quasi-LDO Type)

Type No.	Max. Ratings			VOUT (V)			Reg. Line (%)			Reg. Load (%)			VDROP (V)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd(W) (Ta=25 °C)	(Ta=25 °C)			VIN (V)	(Ta=25 °C)		(Ta=25 °C)		VIN (V)	Typ.			
				Min.	Typ.	Max.		Max.	Min.	Max.	Max.			Min.(mA)		
KIA1578Q000PI	10	1.5	2	1.225	1.25	1.275	2.75	0.2	2.75	10	0.5	10	1.5	1.3	0.95Vo	
KIA1578Q015PI	10	1.5	2	1.47	1.5	1.53	3	0.2	3	10	0.5	10	1.5	1.3	0.95Vo	
KIA1578Q018PI	10	1.5	2	1.764	1.8	1.836	3.3	0.2	3.3	10	0.5	10	1.5	1.3	0.95Vo	
KIA1578Q025PI	10	1.5	2	2.45	2.5	2.55	4	0.2	4	10	0.5	10	1.5	1.3	0.95Vo	
KIA1578Q028PI	10	1.5	2	2.793	2.85	2.907	4.35	0.2	4.35	10	0.5	10	1.5	1.3	0.95Vo	
KIA1578Q033PI	10	1.5	2	3.234	3.3	3.366	4.8	0.2	4.8	10	0.5	10	1.5	1.3	0.95Vo	
KIA1578Q050PI	10	1.5	2	4.9	5	5.1	6.5	0.2	6.5	10	0.5	10	1.5	1.3	0.95Vo	
KIA1578Q000FP	10	1.5	2	1.225	1.25	1.275	2.75	0.2	2.75	10	0.5	10	1.5	1.3	0.95Vo	
KIA1578Q015FP	10	1.5	2	1.47	1.5	1.53	3	0.2	3	10	0.5	10	1.5	1.3	0.95Vo	
KIA1578Q018FP	10	1.5	2	1.764	1.8	1.836	3.3	0.2	3.3	10	0.5	10	1.5	1.3	0.95Vo	
KIA1578Q025FP	10	1.5	2	2.45	2.5	2.55	4	0.2	4	10	0.5	10	1.5	1.3	0.95Vo	
KIA1578Q028FP	10	1.5	2	2.793	2.85	2.907	4.35	0.2	4.35	10	0.5	10	1.5	1.3	0.95Vo	
KIA1578Q033FP	10	1.5	2	3.234	3.3	3.366	4.8	0.2	4.8	10	0.5	10	1.5	1.3	0.95Vo	
KIA1578Q050FP	10	1.5	2	4.9	5	5.1	6.5	0.2	6.5	10	0.5	10	1.5	1.3	0.95Vo	

## ■ 150mA Low Dropout Voltage Regulators (On/Off Controllable) (Positive)

Type No.	Max. Ratings			VOUT (V)			Reg. Line (%)			Reg. Load (%)			VDROP (V)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd(W) (Ta=25 °C)	(Ta=25 °C)			VIN (V)	(Ta=25 °C)		VIN(V)	(Ta=25 °C)		Typ.	VIN (V)		
				Min.	Typ.	Max.		Max.	Min.		Max.	Min.( $\mu$ A)				
KR15S018M	16	0.15	0.5	1.782	1.8	1.818	2.8	0.46	2.8	12	0.5	100	150	0.35	0.98Vo	
KR15S025M	16	0.15	0.5	2.475	2.5	2.525	3.5	0.43	3.5	12	0.5	100	150	0.35	0.98Vo	
KR15S026M	16	0.15	0.5	2.574	2.6	2.626	3.6	0.42	3.6	12	0.5	100	150	0.35	0.98Vo	
KR15S027M	16	0.15	0.5	2.673	2.7	2.727	3.7	0.42	3.7	12	0.5	100	150	0.35	0.98Vo	
KR15S028M	16	0.15	0.5	2.772	2.8	2.828	3.8	0.41	3.8	12	0.5	100	150	0.35	0.98Vo	
KR15S285M	16	0.15	0.5	2.8215	2.85	2.8785	3.85	0.41	3.85	12	0.5	100	150	0.35	0.98Vo	
KR15S029M	16	0.15	0.5	2.871	2.9	2.929	3.9	0.41	3.9	12	0.5	100	150	0.35	0.98Vo	
KR15S030M	16	0.15	0.5	2.97	3	3.03	4	0.40	4	12	0.5	100	150	0.35	0.98Vo	
KR15S031M	16	0.15	0.5	3.069	3.1	3.131	4.1	0.40	4.1	12	0.5	100	150	0.35	0.98Vo	
KR15S033M	16	0.15	0.5	3.267	3.3	3.333	4.3	0.39	4.3	12	0.5	100	150	0.35	0.98Vo	

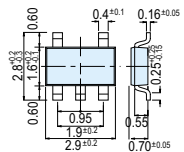
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## ■ 300mA Low Dropout Voltage Regulators (On/Off Controllable) (Positive)

Type No.	Max. Ratings			VOUT (V)			Reg. Line (%)			Reg. Load (%)			VDROP (V)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd(W) (Ta=25 °C)	(Ta=25 °C)			VIN (V)	(Ta=25 °C)		VIN(V)	(Ta=25 °C)		Typ.	VIN (V)		
				Min.	Typ.	Max.		Max.	Min.		Max.	Min.( $\mu$ A)				
KR30S018M	16	0.5	0.5	1.782	1.8	1.818	2.8	0.46	2.8	12	0.5	100	300	0.35	0.98Vo	
KR30S025M	16	0.5	0.5	2.475	2.5	2.525	3.5	0.43	3.5	12	0.5	100	300	0.35	0.98Vo	
KR30S026M	16	0.5	0.5	2.574	2.6	2.626	3.6	0.42	3.6	12	0.5	100	300	0.35	0.98Vo	
KR30S027M	16	0.5	0.5	2.673	2.7	2.727	3.7	0.42	3.7	12	0.5	100	300	0.35	0.98Vo	
KR30S028M	16	0.5	0.5	2.772	2.8	2.828	3.8	0.41	3.8	12	0.5	100	300	0.35	0.98Vo	
KR30S285M	16	0.5	0.5	2.8215	2.85	2.8785	3.85	0.41	3.85	12	0.5	100	300	0.35	0.98Vo	
KR30S029M	16	0.5	0.5	2.871	2.9	2.929	3.9	0.41	3.9	12	0.5	100	300	0.35	0.98Vo	
KR30S030M	16	0.5	0.5	2.97	3	3.03	4	0.40	4	12	0.5	100	300	0.35	0.98Vo	
KR30S031M	16	0.5	0.5	3.069	3.1	3.131	4.1	0.40	4.1	12	0.5	100	300	0.35	0.98Vo	
KR30S033M	16	0.5	0.5	3.267	3.3	3.333	4.3	0.39	4.3	12	0.5	100	300	0.35	0.98Vo	

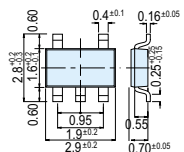
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## ■ 500mA Low Dropout Voltage Regulators (On/Off Controllable) (Positive)

Type No.	Max. Ratings			VOUT (V)			Reg. Line (%)			Reg. Load (%)			VDROP (V)		Package	Outline (Unit: mm)
	VIN (V)	IO (A)	Pd(W) (Ta=25 °C)	(Ta=25 °C)			VIN (V)	(Ta=25 °C)		VIN(V)	(Ta=25 °C)		Typ.	VIN (V)		
				Min.	Typ.	Max.		Max.	Min.		Max.	Min.( $\mu$ A)				
KR52S018M	16	0.5	0.5	1.782	1.8	1.818	2.8	0.46	2.8	12	0.5	100	500	0.35	0.98Vo	
KR52S025M	16	0.5	0.5	2.475	2.5	2.525	3.5	0.43	3.5	12	0.5	100	500	0.35	0.98Vo	
KR52S026M	16	0.5	0.5	2.574	2.6	2.626	3.6	0.42	3.6	12	0.5	100	500	0.35	0.98Vo	
KR52S027M	16	0.5	0.5	2.673	2.7	2.727	3.7	0.42	3.7	12	0.5	100	500	0.35	0.98Vo	
KR52S028M	16	0.5	0.5	2.772	2.8	2.828	3.8	0.41	3.8	12	0.5	100	500	0.35	0.98Vo	
KR52S285M	16	0.5	0.5	2.8215	2.85	2.8785	3.85	0.41	3.85	12	0.5	100	500	0.35	0.98Vo	
KR52S029M	16	0.5	0.5	2.871	2.9	2.929	3.9	0.41	3.9	12	0.5	100	500	0.35	0.98Vo	
KR52S030M	16	0.5	0.5	2.97	3	3.03	4	0.40	4	12	0.5	100	500	0.35	0.98Vo	
KR52S031M	16	0.5	0.5	3.069	3.1	3.131	4.1	0.40	4.1	12	0.5	100	500	0.35	0.98Vo	
KR52S033M	16	0.5	0.5	3.267	3.3	3.333	4.3	0.39	4.3	12	0.5	100	500	0.35	0.98Vo	

TSV





## ■ Transistor Array & Interface Driver ICs

Type No.	Function	Unit	Clamp Diode	V <sub>OUT</sub> (V)	I <sub>OUT</sub> (mA)	System V <sub>CC</sub> (V)	Package	Outline (Unit: mm)
KID65001AF	Darlington Driver	7	●	50	500	Free	FLP-16	
KID65002AF	Darlington Driver	7	●	50	500	14~25		
KID65003AF	Darlington Driver	7	●	50	500	5		
KID65004AF	Darlington Driver	7	●	50	500	6~15		
KID65001AP	Darlington Driver	7	●	50	500	Free	DIP-16	
KID65002AP	Darlington Driver	7	●	50	500	14~25		
KID65003AP	Darlington Driver	7	●	50	500	5		
KID65004AP	Darlington Driver	7	●	50	500	6~15		
KID65083AF	Darlington Driver	8	●	50	500	5	FLP-20	
KID65084AF	Darlington Driver	8	●	50	500	6~15		
KID65083AP	Darlington Driver	8	●	50	500	5	DIP-18	
KID65084AP	Darlington Driver	8	●	50	500	6~15		
KID65501F	Single Driver (Common Emitter)	7		35	200	Free	FLP-16	
KID65502F	Single Driver (Common Emitter)	7		35	200	14~25		
KID65503F	Single Driver (Common Emitter)	7		35	200	5		
KID65504F	Single Driver (Common Emitter)	7		35	200	6~15		
KID65505F	Single Driver (Common Collector)	7		35	200	Free		
KID65506F	Single Driver (Common Collector)	7		35	200	5		
KID65507F	Single Driver (Isolated)	5		35	200	Free		
KID65501P	Single Driver (Common Emitter)	7		35	200	Free	DIP-16	
KID65502P	Single Driver (Common Emitter)	7		35	200	14~25		
KID65503P	Single Driver (Common Emitter)	7		35	200	5		
KID65504P	Single Driver (Common Emitter)	7		35	200	6~15		
KID65505P	Single Driver (Common Collector)	7		35	200	Free		
KID65506P	Single Driver (Common Collector)	7		35	200	5		
KID65507P	Single Driver (Isolated)	5		35	200	Free		
KID65783AF	High Voltage Source Driver	8	●	50	500	5	FLP-20	
KID65783AP	High Voltage Source Driver	8	●	50	500	5	DIP-18	

## ■ Telecommunication ICs

Type No.	Function	Operating Voltage(V)	Package	Outline (Unit: mm : Max.)
KIA6419F	55mW AF Power Amplifier	2~16	FLP-8	
KIA6419P	55mW AF Power Amplifier	2~16	DIP-8	

## ■ Automobiles ICs

Type No.	Function	Operating Voltage(V)	Package	Outline (Unit: mm)
KIA7125PV	1.25V Adjustable Voltage Detector (Active Low Type Delay Time Controllable)	2~17	DIP-8	
KIA7125FV	1.25V Adjustable Voltage Detector (Active Low Type Delay Time Controllable)	2~17	FLP-8	

## ■ Power Supply Controllers

Type No.	Function	Operating Voltage(V)	Package	Outline (Unit: mm)
KIA494AF	Voltage Mode PWM Controller	7.0~40	FLP-16	
KIA494AP	Voltage Mode PWM Controller	7.0~40	DIP-16	
KIA3842F	Current Mode PWM Controller	8.5~30	FLP-14	
KIA3842P	Current Mode PWM Controller	8.5~30	DIP-8	
KIA34063A	DC/DC Converter	3.0~40	DIP-8	
KIA34063AF	DC/DC Converter	3.0~40	FLP-8	

Logic LMOS ICs

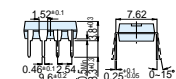

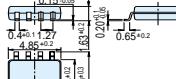
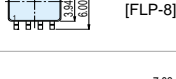
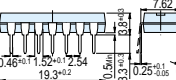
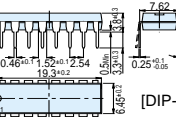
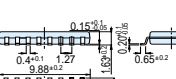

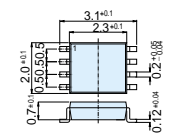
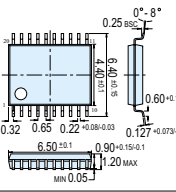
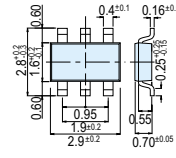
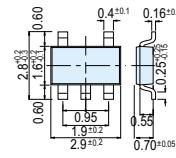
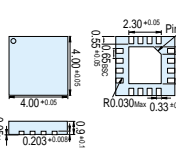
Type No.	Mark	Max. Ratings					Function	Package	Outline (Unit: mm)
		Supply Voltage Vcc (V)	DC Input Voltage VIN (V)	DC Output Voltage VOUT (V)	DC Output Current IOUT (mA)	Power Dissipation Pd (mW)			
KIC7S00FU	SP	-0.5~7	-0.5~Vcc+0.5	-0.5~Vcc+0.5	±12.5	200	2 Input NAND Gate	USV	
KIC7S02FU	SQ	-0.5~7	-0.5~Vcc+0.5	-0.5~Vcc+0.5	±12.5	200	2 Input NOR Gate		
KIC7S04FU	SR	-0.5~7	-0.5~Vcc+0.5	-0.5~Vcc+0.5	±12.5	200	Inverter Gate		
KIC7S08FU	ST	-0.5~7	-0.5~Vcc+0.5	-0.5~Vcc+0.5	±12.5	200	2 Input AND Gate		
KIC7S14FU	SU	-0.5~7	-0.5~Vcc+0.5	-0.5~Vcc+0.5	±12.5	200	Schmitt Trigger Inverter		
KIC7S32FU	SV	-0.5~7	-0.5~Vcc+0.5	-0.5~Vcc+0.5	±12.5	200	2 Input OR Gate		
KIC7S66FU	SW	-0.5~10	-0.5~Vcc+0.5	-0.5~Vcc+0.5	±12.5	200	Analog Switch		
KIC7S86FU	SX	-0.5~7	-0.5~Vcc+0.5	-0.5~Vcc+0.5	±12.5	200	Exclusive OR Gate		
KIC7SH04FU	VR	-0.5~7	-0.5~Vcc+0.5	-0.5~Vcc+0.5	±25	200	Inverter		
KIC7SH08FU	VT	-0.5~7	-0.5~Vcc+0.5	-0.5~Vcc+0.5	±25	200	2 Input AND Gate		
KIC7SU04FU	SS	-0.5~7	-0.5~Vcc+0.5	-0.5~Vcc+0.5	±12.5	200	Inverter Gate (Unbuffer)		
KIC7W00FK	00	-0.5~7	-0.5~Vcc+0.5	-0.5~Vcc+0.5	±25	200	Dual 2 Input NAND Gate	US8	
KIC7W04FK	04	-0.5~7	-0.5~Vcc+0.5	-0.5~Vcc+0.5	±25	200	Triple Inverter Gate		
KIC7W08FK	08	-0.5~7	-0.5~Vcc+0.5	-0.5~Vcc+0.5	±25	200	Dual 2 Input AND Gate		
KIC7W14FK	14	-0.5~7	-0.5~Vcc+0.5	-0.5~Vcc+0.5	±25	200	Triple Schmitt Trigger Inverter		
KIC7W32FK	32	-0.5~7	-0.5~Vcc+0.5	-0.5~Vcc+0.5	±25	200	Dual 2 Input OR Gate		
KIC7W53FK	53	-0.5~10	-0.5~Vcc+0.5	-0.5~Vcc+0.5	±25	200	2 Channel Multiplexer		
KIC7W66FK	66	-0.5~10	-0.5~Vcc+0.5	-0.5~Vcc+0.5	±25	200	Dual Analog Switch		
KIC7W74FK	74	-0.5~7	-0.5~Vcc+0.5	-0.5~Vcc+0.5	±25	200	D Flip Flop		
KIC7W125FK	125	-0.5~7	-0.5~Vcc+0.5	-0.5~Vcc+0.5	±35	200	Dual 3 State Buffer		
KIC7W126FK	126	-0.5~7	-0.5~Vcc+0.5	-0.5~Vcc+0.5	±35	200	Dual 3 State Buffer		
KIC7W241FK	241	-0.5~7	-0.5~Vcc+0.5	-0.5~Vcc+0.5	±35	200	Dual 3 State Buffer		
KIC7WU04FK	U04	-0.5~7	-0.5~Vcc+0.5	-0.5~Vcc+0.5	±25	200	Triple Inverter Gate (Unbuffer)		
KIC7SZ00FU	TA	-0.5~6	-0.5~6	-0.5~6	±50	200	2 Input NAND Gate	USV	
KIC7SZ02FU	TB	-0.5~6	-0.5~6	-0.5~6	±50	200	2 Input NOR Gate		
KIC7SZ04FU	TC	-0.5~6	-0.5~6	-0.5~6	±50	200	Inverter Gate		
KIC7SZ05FU	TD	-0.5~6	-0.5~6	-0.5~6	±50	200	Open-drain Inverter Gate		
KIC7SZ08FU	TE	-0.5~6	-0.5~6	-0.5~6	±50	200	2 Input AND Gate		
KIC7SZ14FU	TF	-0.5~6	-0.5~6	-0.5~6	±50	200	Schmitt Trigger Inverter		
KIC7SZ32FU	TG	-0.5~6	-0.5~6	-0.5~6	±50	200	2 Input OR Gate		
KIC7SZ66FU	TH	-0.5~7	-0.5~7	-0.5~6	±50	200	Analog Switch		
KIC7SZ86FU	TJ	-0.5~6	-0.5~6	-0.5~6	±50	200	Exclusive OR Gate		
KIC7SZ125FU	TK	-0.5~6	-0.5~6	-0.5~6	±50	200	3-State Buffer		
KIC7SZ126FU	TL	-0.5~6	-0.5~6	-0.5~6	±50	200	3-State Buffer		
KIC7SZU04FU	TN	-0.5~6	-0.5~6	-0.5~Vcc+0.5	±50	200	Inverter Gate (Unbuffer)		
KIC7SZ38FU	TP	-0.5~6	-0.5~6	-0.5~6	50	200	Open-drain AND Gate		

Logic LMOS ICs

Type No.	Mark	Max. Ratings					Function	Package	Outline (Unit: mm)
		Supply Voltage Vcc (V)	DC Input Voltage VIN (V)	DC Output Voltage VOUT (V)	DC Output Current IOUT (mA)	Power Dissipation Pd (mW)			
KIC7WZ00FK	Z00	-0.5~6	-0.5~6	-0.5~6	±50	200	Dual 2 Input NAND Gate	US8	
KIC7WZ08FK	Z08	-0.5~6	-0.5~6	-0.5~6	±50	200	Dual 2 Input AND Gate		
KIC7WZ38FK	Z38	-0.5~6	-0.5~6	-0.5~6	50	200	Dual Open-drain AND Gate		
KIC7WZ02FK	Z02	-0.5~7	-0.5~7	-0.5~7	±50	200	Dual 2 Input NOR Gate		
KIC7WZ32FK	Z32	-0.5~6	-0.5~6	-0.5~6	±50	200	Dual 2 Input OR Gate		
KIC7WZ04FK	Z04	-0.5~6	-0.5~6	-0.5~6	±50	200	Triple Inverter Gate		
KIC7WZU04FK	ZU04	-0.5~7	-0.5~7	-0.5~7	±50	200	Triple Inverter Gate (Unbuffer)		
KIC7WZ05FK	Z05	-0.5~6	-0.5~6	-0.5~6	50	200	Dual Open-drain Inverter Gate		
KIC7WZ14FK	Z14	-0.5~6	-0.5~6	-0.5~6	±50	200	Triple Schmitt Trigger Inverter		
KIC7WZ34FK	Z34	-0.5~6	-0.5~6	-0.5~6	±50	200	Triple MON Inverter Gate		
KIC7WZ74FK	Z74	-0.5~6	-0.5~6	-0.5~6	±50	200	D Flip Flop		
KIC7WZ125FK	Z125	-0.5~7	-0.5~7	-0.5~7	±50	200	Dual 3 State Buffer		
KIC7WZ126FK	Z126	-0.5~7	-0.5~7	-0.5~7	±50	200	Dual 3 State Buffer		
KIC7WZ241FK	Z241	-0.5~7	-0.5~7	-0.5~7	±50	200	Dual 3 State Buffer		

Integrated Circuits

## Others

Type No.	Function	Operating Voltage(V)	Package	Outline (Unit: mm)
KIA555F	Single Timer	4.5 ~16	FLP-8	
KIA555P	Single Timer	4.5 ~16	DIP-8	 [DIP-8]
* KIA2951P	Micro Power LDO Reference IC	30	DIP-8	
* KIA2951F	Micro Power LDO Reference IC	30	FLP-8	 [FLP-8]
KIA6901F	DC Motor Speed Controller	1.8~8	FLP-8	
KIA6901P			DIP-8	
KIA6903P		3.5 ~18		
KIA6987P	Rx Demodulator	3.5 ~12	DIP-16	 [DIP-16]
KIA6988P	CDI Controllers	8.8	DIP-14	
KIA3802F	CCFL Driver (Push Pull)	7.0~30	FLP-16	 [FLP-16]
KIA3820FK	Gate Pulse Modulator	15~29	US8	
KIA3812FT	CCFL Driver (Full Bridge)	4.5~5.5	TSSOP-20	
KIB3401F	White LED Driver	2.8~5.5	TS6	
* KIB3450T	Step-Up Converter	2.7~5.5	TSV	
KAC3301QN	White LED Driver (Charge Pump)	2.7~5.5	QFN-16	

Note) \* : Under development

Type No.	Maker	KEC	Type No.	Maker	KEC	Type No.	Maker	KEC
AN1324	Matsushita	KIA324P/F	M5F7900	Mitsubishi	KIA7900PI	TD62501 ~ 7P	Toshiba	KID65501 ~ 7P
AN1393/S	Matsushita	KIA393P/F	MB4213	Shindengen	KIA6988P	TD62783AP/AF	Toshiba	KID65783AP/AF
AN1431T	Matsushita	KIA431	MC1455/D	Motorola	KIA555P/F	TL431	Motorola	KIA431/F/A/AF
AN4558/S	Matsushita	KIA4558P/F	MC34063AP/AD	Motorola	KIA34063A/AF	TL431	TI	KIA431/F/A/AF
AN6553/S	Matsushita	KIA4559P/F	MC34119P/D	Motorola	KIA6419P/F	TL494	Motorola	KIA494AP/AF
AN6612/S	Matsushita	KIA6901P/F	MC4558C	Motorola	KIA4558P/S/F	TLV431LP	TI	KIA2431P/AP/BP
AN6650/S	Matsushita	KIA6901P/F	MC7805-24CT	Motorola	KIA7805 ~ 24API	TLV431DBV	TI	KIA2431T/AT/BT
AN6651	Matsushita	KIA6903P	MC78L05-24ACC	Motorola	KIA78S05 ~ 24P	UDN2981A	Sprague	KID65783AP
AN6912/S	Matsushita	KIA339P/F	MC7900CT	Motorola	KIA7900PI	ULN2001 ~ 4A	Motorola	KID65001 ~ 4AP
AN7805-24	Matsushita	KIA7805-24API	MJM2901D/M	JRC	KIA339P/F	ULN2803/4	Motorola	KID65083/84AP
AN78L05-24	Matsushita	KIA78S05-24P	MN1280	Matsushita	KIA7019 ~ 45AP/AF	XC74UL08AA	Torex	KIC75H08FU
AN7900F	Matsushita	KIA7900PI	NC7S04P5X	Fairchild	KIC7SH04FU	μA431	NEC	KIA431/F/A/AF
AS431LAN/AMI	Alpha	KIA431BP/BF	NC7S08P5X	Fairchild	KIC75H08FU	μA7805 ~ 24	NEC	KIA7805-24API
BA033 ~ 15FP	Rohm	KIA78D33 ~ 15F	NJM431L/U	JRC	KIA431/F/A/AF	μA7900C	NEC	KIA7900PI
BA222	Rohm	KIA555P/F	NJM555D/M	JRC	KIA555P/F	μA7900CKC	NEC	KIA7900PI
BA223	Rohm	KIA555P/F	NJM22360AD/AM	NJRC	KIA34063A/AF	μPA2981C	NEC	KID65783AP
BA4558/F/N	Rohm	KIA4558P/F	NJM2614D	NJRC	KIA6987P	μPC324C	NEC	KIA324P/F
BA6220	Rohm	KIA6903P	NJM2902D	JRC	KIA324P/F	μPC339C/G	NEC	KIA393P/F
BA6235/F	Rohm	KIA6901P/F	NJM2903D/M	JRC	KIA393P/S/F	μPC393C/G	NEC	KIA393P/F
BA10324/F	Rohm	KIA324P/F	NJM4558D/S/M	JRC	KIA4558P/S/F	μPC494/C	NEC	KIA494AP/AF
BA10339/F	Rohm	KIA339P/F	NJM4559D/S/M	JRC	KIA4559P/S/F	μPC1093J/T	NEC	KIA431/F/A/AF
BA10358/F/N	Rohm	KIA358P/F	NJM78xxDLA	NJRC	KIA78xxAF	μPC1555C	NEC	KIA555P/F
BA10393/F/N	Rohm	KIA393P/F	NJM7900A/FA	JRC	KIA7900PI	μPC4558C/G	NEC	KIA4558P/F
HA17431P/UA	Hitachi	KIA431/F	PQ3RD13	Sharp	KIA78R33API	μPC4559C/G	NEC	KIA4559P/F
KA278R**	Fairchild	KIA278R**PI	PQ3RD23	Sharp	KIA278R33PI	μPC78050. ~ 24A	NEC	KIA7805 ~ 24API
KA34063A/AD	Fairchild	KIA34063A/AF	PQ3RF23	Sharp	KIA278R33PI	μPC78L05 ~ 15J	NEC	KIA78L05 ~ 15F
KA8602F	Fairchild	KIA6419F	PQ**RF11	Sharp	KIA78R05 ~ 15PI	μPC78M05 ~ 24A	NEC	KIA78M05 ~ 24PI
KA78R**	Fairchild	KIA78R**PI	PQ**RF21	Sharp	KIA278R**PI	μPC7900A	NEC	KIA7900PI
L5431	Sanyo	KIA431	PST523	Mitsumi	KIA7019 ~ 45AP/AF	BA**SFP	Rohm	KIA78R**F
L78M00T	Sanyo	KIA78M00PI	PST524	Mitsumi	KIA7019 ~ 45AP/AF	PQ**TZ*1	Sharp	KIA78R**F
L79M00T	Sanyo	KIA79M00PI	SN74AHCT1G**	TI	KIC7S**FU	PQ*RF33	Sharp	KIA378R**PI
LA5527	Sanyo	KIA6901P	TA31001P/F	Toshiba	KIA6401P/F	KA378R**	Fairchild	KIA378R**PI
LA5528	Sanyo	KIA6901P	TA31002P/F	Toshiba	KIA6402P/F	OZ960	O <sub>2</sub> Micro	KIB3812FT
LA6324N/NM	Sanyo	KIA324P/F	TA75339P	Toshiba	KIA339P	LM117MPX/DTX/T**	N/S	KIA1117F/PI**
LA6339/M	Sanyo	KIA339P/F	TA75393P	Toshiba	KIA393P	LD1117S/DT/V**	STM	KIA1117F/PI**
LA6358N/NM	Sanyo	KIA358P/F	TA75558P	Toshiba	KIA4558P/F	FAN117ASX/ADX/AT**	Fairchild	KIA1117F/PI**
LA6393D/M	Sanyo	KIA393P/F	TA75559P	Toshiba	KIA4559P/F	LM1086IS/T**	N/S	KIA1578Q***FP/PI
LA6458/D/M	Sanyo	KIA4558P/F	TA7555P/F	Toshiba	KIA555P/F	LD1086D2T/V**	STM	KIA1578Q***FP/PI
LA8501	Sanyo	KIA6401P/F	TA75S01F	Toshiba	KIA75S358F	FAN1086MX	Fairchild	KIA1578Q***FP
LB1211	Sanyo	KID65501P	TA75S393F	Toshiba	KIA75S393F	TLV431A	ON-Semi	KIA2431AT/AP
LB1212	Sanyo	KID65502P	TA75S558F	Toshiba	KIA75S558F	TA76432FC/S	Toshiba	KIA2431AT/AP
LB1213/M	Sanyo	KID65503P/F	TA76431S/F	Toshiba	KIA431/F	RC431AM/AT	Fairchild	KIA2431AT/AP
LB1214	Sanyo	KID65504P	TA76494P	Toshiba	KIA494AP/AF	TS4321ILT	STM	KIA2431AS
LB1215	Sanyo	KID65505P	TA7805 ~ 24S/SB	Toshiba	KIA7805 ~ 24API	MIC5219.**BM5	Micrel	KR52S***M
LB1216	Sanyo	KID65506P	TA78xxF	Toshiba	KIA78xxAF	PQ**DZ1*	Sharp	KIA78R**F
LB1217	Sanyo	KID65507P	TA78DL05 ~ 15S	Toshiba	KIA78DL05 ~ 15PI	PQ***EZ5MZ*	Sharp	KIA78RM***F
LB1231	Sanyo	KID65001AP	TA78DLxxAF	Toshiba	KIA78DLxxF	PQ***EZ01Z*	Sharp	KIA78R**F
LB1232	Sanyo	KID65002AP	TA78DS05BP	Toshiba	KIA78DS05BP	PQ05RA11	Sharp	KIA78R050PI
LB1233	Sanyo	KID65003AP	TA78L005 ~ 24AP/F	Toshiba	KIA78L05 ~ 24BP/F	PQ30RV11	Sharp	KIA78R000PI
LB1234	Sanyo	KID65004AP	TA78L05 ~ 24S	Toshiba	KIA78S05 ~ 24P	PQ30RV21	Sharp	KIA278R00PI
LB8555D/M	Sanyo	KIA555P/F	TA78M05 ~ 24S/SB	Toshiba	KIA78M05 ~ 24PI	PQ30RV31	Sharp	KIA378R00PI
LM324/N	Motorola	KIA324P/F	TA79005 ~ 24S/SB	Toshiba	KIA7905 ~ 24PI	BA**BC0FP/T	Rohm	KIA78D***F/PI
LM336	N/S	KIA431/F/A/AF	TA79L05 ~ 24P/F	Toshiba	KIA79L05 ~ 24BP/F	BA**BC0FP/T	Rohm	KIA78D***F/PI
LM339/N	N/S	KIA339P/F	TA79M05 ~ 24S/SB	Toshiba	KIA79M05 ~ 24PI	BA**BC0WFP/WT	Rohm	KIA78R***F/PI
LM358	Motorola	KIA358P/F	TC7S**FU	Toshiba	KIC7S**FU	BA**BC0WFP/WT	Rohm	KIA78R***F/PI
LM393/N	N/S	KIA393P/F	TC7SZ**FU	Toshiba	KIC7SZ**FU	BA178**FP/T	Rohm	KIA78**AF/API
LM555/CN	Mitsubishi	KIA555P/F	TC7WZ**FK	Toshiba	KIC7WZ**FK	BA178M**FP/T	Rohm	KIA78M**F/PI
LM7900CT	N/S	KIA7900PI	TC7SH04FU	Toshiba	KIC7SH04FU	SC604***	SEMTECH	KAC3301QN
M51943	Mitsubishi	KIA7042AP/AF	TC7SH08FU	Toshiba	KIC7SH08FU	LT1937	Linear	KIB3401F
M51944	Mitsubishi	KIA7442P/F	TC7W**FK	Toshiba	KIC7W**FK	LM2733	N/S	KIB3450T
M51957B	Mitsubishi	KIA7125F/FV	TD62001 ~ 4P/AP	Toshiba	KID65001 ~ 4AP	MAX8**	Maxim	KIC352*SB
M54523P	Mitsubishi	KID65003AP	TD62083AP/AF	Toshiba	KID65083AP/AF			
M54563P	Mitsubishi	KID65783AP	TD62084AP/AF	Toshiba	KID65084AP/AF			