



PRODUCT GUIDE 2001

Transistors

Diodes

Thyristors

SAW Device

Dielectric Device

Integrated Circuit

PDF.SUPPORT

KEC

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| KTA1517 | Transistor | 23 | KTC801U | Transistor | 21 | KTC3502 | Transistor | 31 | KTD686 | Transistor | 33 |
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| KTA1661 | Transistor | 22 | KTC2020L | Transistor | 31 | KTC3876S | Transistor | 22 | KTD1352 | Transistor | 31 |
| KTA1662 | Transistor | 22 | KTC2022D | Transistor | 26 | KTC3878S | Transistor | 24 | KTD1411 | Transistor | 33 |
| KTA1663 | Transistor | 22 | KTC2022L | Transistor | 31 | KTC3879S | Transistor | 24 | KTD1413 | Transistor | 33 |
| KTA1664 | Transistor | 22 | KTC2025D | Transistor | 26 | KTC3880S | Transistor | 24 | KTD1414 | Transistor | 33 |
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| KTB772 | Transistor | 31 | KTC3198L | Transistor | 28 | KTC4520F | Transistor | 32 | KTN2222S | Transistor | 24,45 |
| KTB778 | Transistor | 32 | KTC3199 | Transistor | 27 | KTC4521 | Transistor | 32 | KTN2222U | Transistor | 24,45 |

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PNP Transistors($V_{CE0} : -12V \sim -65V$)


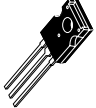
| V_{CE0} | Ic | VSM | ESM | TESV | TES6 | USM | USV | US6 | TSM | TSV | TS6 | SOT-23 | SOT-89 |
|-----------|--------|---|---|---|---|---|---|---|---|---|---|---|---|
| | | (Unit: mm) | | | | | | | | | | | |
| | |  |  |  |  |  |  |  |  |  |  |  |  |
| | | ■ (1.2 X0.8) | ■ (1.60X0.85) | ■ (1.6 X1.2) | ■ (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) | ■ (4.7X2.5) |
| -12V | -500mA | KTA2012V | KTA2012E | | | | | | | | | | |
| -20V | -50mA | | | | | | | | | | | | |
| | -100mA | | | | | | | | | | | BCW29 BCW30 | |
| | -500mA | | | | | | | | | | | | |
| | -1A | | | | | | | | KTA1531T | KTX311T | | | |
| | -1.5A | | | | | | | | KTA1532T | | KTX511T | | |
| | -2A | | | | | | | | | | | | |
| | -3A | | | | | | | | KTA1535T | | KTX512T | | KTA1001 |
| | -5A | | | | | | | | KTA1536T | | | | |
| -25V | -100mA | | | | | | | | | | | | |
| | -800mA | | | | | | | | | | | | |
| | -1A | | | | | | | | | | | | |
| | -1.5A | | | | | | | | | | | | |
| -30V | -100mA | | | | | BC858W | | | | | | BC858 BC859 | |
| | -500mA | | | | | KTA2015 | | | | KTA511T | KTA711T | KTA1505S MMBTA63 MMBTA64 | |
| | -800mA | | | | | | | | | | | KTA1298 | KTA1664 |
| | -1.5A | | | | | | | | KTA1541T | | | | KTA1663 |
| | -2A | | | | | | | | | | | | |
| | -3A | | | | | | | | KTA1542T | | | | |
| -40V | -200mA | | | | | 2N3906U | | | | | | KN3905S KN3906S 2N3906S | |
| | -600mA | | | | | KTN2907U | | | | | | KN2907S KN4402S KN4403S KTN2907S | |
| -45V | -100mA | | | | | BC857W | | | | | | BCW69 BCW70 BC857 BC860 | |
| | -800mA | | | | | | | | | | | BC807 BCW68 | |
| -50V | -150mA | KTA2014V | KTA2014E | KTX301E KTA501E | KTA701E KTA711E KTA712E | KTA2014 | KTX301U KTA501U | KTA701U | | | | KTA1504S | |
| | -500mA | | | | | | | | | | | | |
| | -1A | | | | | | | | *KTA1551T | | | | |
| | -2A | | | | | | | | | | | | KTA1666 |
| | -3A | | | | | | | | | *KTA1552T | | | KTB1124 |
| -5A | | | | | | | | | *KTA1553T | | | | |
| -60V | -100mA | | | | | | | | | | | BCW89 | |
| | -500mA | | | | | | | | | | | MMBTA55 | |
| | -600mA | | | | | KTN2907AU | | | | | | KN2907AS KTN2907AS | |
| | -1A | | | | | | | | | | | | KTA1668 |
| | -3A | | | | | | | | | | | | |
| -5A | | | | | | | | | | | | | |
| -65V | -100mA | | | | | BC856W | | | | | | BC856 | |

Note) * : Under development













| DPAK  (6.6X6.1) | TO-92M  | TO-92  | TO-92L  | IPAK  | TO-126  | TO-220IS  | TO-220AB  | TO-3P(H)IS  | TO-3P(N)  |
|--|---|--|---|---|---|--|---|---|---|
| | | BC309 | | | | | | | |
| | | MPSA62 | | | | | | | |
| | | KTA1296 | | | | | | | |
| KTA1242D | | KTA1243 | KTA1241 | KTA1242L | KTA1709 | | | | |
| KTA1834D | | | | KTA1834L | | | | | |
| | | BC308 | | | | | | | |
| | | BC328 | | | | | | | |
| | | KTB598 | | | | | | | |
| | | MPS8550 | | | | | | | |
| | | KTA1283 | | | | | | | |
| | | BC558 | | | | | | | |
| | | BC559 | | | | | | | |
| | KTA1021 | KTA1270 | | | | | | | |
| | | KTC9012 | | | | | | | |
| | | MPSA63 | | | | | | | |
| | | MPSA64 | | | | | | | |
| | KTA1272 | KTA1271 | | | | | | | |
| | | KTC8550 | | | | | | | |
| | | | | | | | | | |
| | | KTA1282 | KTA1273 | | | | | | |
| | | KTB1772 | | | KTA1705 | KTA1658 | KTA1276 | | |
| | | | | | KTB772 | | | | |
| | | KN3905 | | | | | | | |
| | | KN3906 | | | | | | | |
| | | 2N3906 | | | | | | | |
| | | 2N3906C | | | | | | | |
| | | KN2907 | | | | | | | |
| | | KN4402 | | | | | | | |
| | | KN4403 | | | | | | | |
| | | KTN2907 | | | | | | | |
| | | BC307 | | | | | | | |
| | | BC557 | | | | | | | |
| | | BC560 | | | | | | | |
| | | BC327 | | | | | | | |
| | KTA1267 | KTA733 | | | | | | | |
| | KTA1267L | KTA733B | | | | | | | |
| | | KTA1266 | | | | | | | |
| | | KTA1266L | | | | | | | |
| | | KTC9015 | | | | | | | |
| | | | | | | | | | |
| | | KTA200 | KTB764 | | | | | | |
| KTA1718D | | | KTA1281 | KTA1718L | KTA1715 | | | | |
| | | | KTB985 | | | | | | |
| | | | | | | | | | |
| | | BC638 | | | | | | | |
| | | MPSA55 | | | | | | | |
| | | KN2907A | | | | | | | |
| | | KTN2907A | | | | | | | |
| KTA1040D | | MPS751 | | KTA1040L | | KTA1046 | KTA1036 | | |
| | | KTA708 | | | | KTB1366 | KTB988 | | |
| | | | | | | KTB1424 | | | |
| KTA1385D | | | | KTA1385L | KTB1151 | | | | |

PNP Transistors ($V_{CE0} : -80V \sim -400V$)

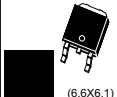









| V_{CE0} | Ic | VSM | ESM | TESV | TES6 | USM | USV | US6 | TSM | TSV | TS6 | SOT-23 | SOT-89 |
|-----------|--------|--|---|--|--|--|--|--|---|---|---|--|---|
| | | (Unit: mm) | | | | | | | | | | | |
| | |  (1.2 X0.8) |  (1.60X0.85) |  (1.6 X1.2) |  (1.6 X1.2) |  (2.0X1.25) |  (2.0X1.25) |  (2.0X1.25) |  (2.9X1.6) |  (2.9X1.6) |  (2.9X1.6) |  (2.93X1.3) |  (4.7X2.5) |
| -80V | -400mA | | | | | | | | | | | | KTA1662 |
| | -500mA | | | | | | | | | | | MMBTA56 | |
| | -1A | | | | | | | | | | | | KTB1260 |
| | -4A | | | | | | | | | | | | |
| | -6A | | | | | | | | | | | | |
| | -7A | | | | | | | | | | | | |
| -100V | -100mA | | | | | | | | | | | BSS63 | |
| | -2A | | | | | | | | | | | | |
| | -3A | | | | | | | | | | | | |
| | -5A | | | | | | | | | | | | |
| | -6A | | | | | | | | | | | | |
| | -10A | | | | | | | | | | | | |
| -120V | -25A | | | | | | | | | | | | |
| | -100mA | | | | | KTA2017 | | | | | | KTA1517 | |
| | -600mA | | | | | | | | | | | 2N5400S | |
| | -800mA | | | | | | | | | | | | KTA1661 |
| | -1A | | | | | | | | | | | | |
| | -1.2A | | | | | | | | | | | | |
| | -5A | | | | | | | | | | | | |
| -140V | -8A | | | | | | | | | | | | |
| | -10A | | | | | | | | | | | | |
| | -12A | | | | | | | | | | | | |
| -150V | -10A | | | | | | | | | | | | |
| | -50mA | | | | | | | | | | | | KTA1660 |
| | -600mA | | | | | | | | | | | 2N5401S | |
| -160V | -10A | | | | | | | | | | | | |
| | -1.5A | | | | | | | | | | | | |
| -180V | -1.5A | | | | | | | | | | | | |
| | -2A | | | | | | | | | | | | |
| -200V | -100mA | | | | | | | | | | | | |
| | -500mA | | | | | | | | | | | MMBTA93 | |
| -230V | -1A | | | | | | | | | | | | |
| | -15A | | | | | | | | | | | | |
| -250V | -50mA | | | | | | | | | | | | |
| -300V | -50mA | | | | | | | | | | | | |
| | -100mA | | | | | | | | | | | | |
| | -500mA | | | | | | | | | | | MMBTA92 | |
| -400V | -300mA | | | | | | | | | | | | |
| | -500mA | | | | | | | | | | | | |
| | -2A | | | | | | | | | | | | |

| DPAK | TO-92M | TO-92 | TO-92L | IPAK | TO-126 | TO-220IS | TO-220AB | TO-3P(H)IS | TO-3P(N) |
|--|---|---|---|---|---|--|---|---|---|
|  (6.6X6.1) |  |  |  |  |  |  |  |  |  |
| | | BC556 | KTA1274 | | | | | | |
| | | MPSA56 | KTB1241 | | | | | | |
| | | | | | | KTB1368 | KTB989 | | |
| | | | | | | | KTA1726 | | |
| | | | | | | KTB1370 | | | |
| MJD117 | | | | MJD117L | | | TIP117 | | |
| | | | | | | | TIP32C | | |
| KTA1042D | | | | KTA1042L | | KTA1049 KTB1367 | KTA1038 KTB595 | | |
| | | | | | | | TIP42C | | |
| | | | | | | | | | TIP34C |
| | | | | | | | | | TIP36C |
| | | KTA1268 KTA2400 | | | | | | | |
| | | 2N5400 | KTA1023 | | | | | | |
| KTA1045D | | | | KTA1045L | KTB631K | | | | |
| | | | | | KTA1704 | | | | |
| | | | | | | KTB1423 | TIP127 | | |
| | | | | | | | | | KTB688A |
| | | | | | | | KTB2955 | KTB778 | KTA1940 KTB688 |
| | | | | | | | | | KTA1695 |
| | | | | | | | | | KTB817 |
| | | | KTA1024 | | KTA1360 | | | | |
| | | | | | | | | | |
| | | 2N5401 2N5401C | | | | | | | KTB2510 |
| | | | KTA1275 | | | | | | |
| KTA1225D | | | | KTA1225L | KTA1700 | KTA1659 | KTA968 | | |
| | | | | | | KTA1659A | KTA968A | | |
| | | | | | | KTB1369 | KTB1469 | | |
| | | | KTA1070 | | | | | | |
| | | | | | | | | | |
| | | MPSA93 | | | | KTA1837 | | | |
| | | | | | | | | | KTA1962 |
| | | BF423 | | | | | | | |
| | | BF421 | | | KTA1381 | | | | |
| | | KTA1279 MPSA92 | | | | | | | |
| | | MPSA94 | KTA1277 | | KTA1703 | | | | |
| KTA1862D | | | | KTA1862L | | | | | |

NPN Transistors (V_{CEO} : 10V ~ 65V)

| V _{CEO} | I _C | VSM | ESM | TESV | TES6 | USM | USV | US6 | TSM | TSV | TS6 | SOT-23 | SOT-89 |
|------------------|----------------|---|---|---|---|---|---|---|---|---|---|---|---|
| | | (Unit: mm) | | | | | | | | | | | |
| | |  |  |  |  |  |  |  |  |  |  |  |  |
| | | ■ (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) | ■ (4.7X2.5) |
| 10V | 2A | | | | | | | | | | | | KTC4377 |
| 12V | 500mA | KTC4072V | KTC4072E | | | | | | | | | | |
| 15V | 50mA | | | | | KTC4082 | | | | | | KTC3882 | |
| | 100mA | | | | | KTC4021 | | | | | | KTC3121 BFQ31 | |
| | 200mA | | | | | | | | | | | KTC3883 | |
| | 500mA | | | | | KTN2369AU KTN2369U | | | | | | KTN2369S KTN2369AS | |
| 20V | 50mA | | | | | | | | | | | BCW31 | |
| | 100mA | | | | | | | | | | | BCW32 | |
| | 300mA | | | | | | | | | | | KTC2875 KTD1304 | |
| | 1A | | | | | | | | KTC3531T | KTX411T | | | |
| | 1.5A | | | | | | | | KTC3532T | | | | |
| | 2A | | | | | | | | | | | | |
| | 3A | | | | | | | | KTC3535T | | | | |
| | 5A | | | | | | | | KTC3536T | | | | |
| 25V | 25mA | | | | | | | | | | | BF599 BFS20 | |
| | 50mA | | | | | KTC4081 | | | | | | KTC3881S | |
| | 800mA | | | | | | | | | | | | |
| | 1A | | | | | | | | | | | | |
| | 1.5A | | | | | | | | | | | | |
| 30V | 20mA | | KTC4080E | | | KTC4080 | | | | | | | KTC3880S |
| | 50mA | | | | | KTC4079 | | | | | | | KTC3879S |
| | 100mA | | | | | BC848W | | | | | | BC848 BC849 KTC3878S | |
| | 400mA | | | | | | | | | | | MMBTA517 | |
| | 500mA | | | | | KTC4076 | | | | KTC611T | KTC811T | KTC3876S MMBTA13 MMBTA14 | |
| | 600mA | | | | | KTN2222U | | | | | | KN2222S KTN2222S | |
| | 800mA | | | | | | | | | | | KTC3265 | KTC4376 |
| | 1.5A | | | | | | | | KTC3541T | | | | KTC4375 |
| | 2A | | | | | | | | | | | | |
| | 3A | | | | | | | | KTC3542T | | | | |
| 5A | | | | | | | | KTC3543T | | | | | |
| 40V | 200mA | | | | | 2N3904U | | | | | | KN3903S KN3904S 2N3904S | |
| | 600mA | | | | | KTN2222AU | | | | | | KN2222AS KN4400S KN4401S KTN2222AS | |
| 45V | 100mA | | | | | BC847W | | | | | | BCW71 BCW72 BC847 BC850 | |
| | 500mA | | | | | | | | | | | BCX19 | |
| | 800mA | | | | | | | | | | | BC817 | |
| 50V | 150mA | KTC4075V | KTC4075E | KTX401E KTC601E | KTC801E KTC811E KTC812E | KTC4075 KTC4666 | KTX401U KTC601U | KTC801U | | | | KTC3875S KTC3295 | |
| | 1A | | | | | | | | | | | | KTD1003 |
| | 2A | | | | | | | | *KTC3551T | | | | KTC4379 |
| | 3A | | | | | | | | | | | | KTD1624 |
| | 5A | | | | | | | | *KTC3552T | | | | |
| 60V | 100mA | | | | | | | | *KTC3553T | | | BCV71 BCV72 | |
| | 500mA | | | | | | | | | | | MMBTA05 | |
| | 1A | | | | | | | | | | | | KTC4378 |
| | 3A | | | | | | | | | | | | |
| | 4A | | | | | | | | | | | | |
| | 5A | | | | | | | | | | | | |
| 65V | 100mA | | | | | BC846W | | | | | | BC846 | |

Note) * : Under development

| DPAK | TO-92M | TO-92 | TO-92L | IPAK | TO-126 | TO-220IS | TO-220AB | TO-3P(H)IS | TO-3P(N) |
|--|---|---|---|---|---|--|---|---|---|
|  (6.6X6.1) |  |  |  |  |  |  |  |  |  |
| | | | KTC3226 | | | | | | |
| | | KTC2347 | | | | | | | |
| | | KTN2369 KTN2369A KTH2369 KTH2369A | | | | | | | |
| | | BC239 BC238 | | | | | | | |
| | KTD1303 | KTC2874 KTD1302 | | | | | | | |
| | | KTC3266 | | | | | | | |
| KTC3072D KTC5001D | | KTD1146 | KTD1145 | KTC3072L | | | | | |
| | | KTC3197 BC338 KTD545 | | | | | | | |
| | | MPS8050 KTC3211 | | | | | | | |
| | KTC3195 | KTC3194 KTC9016 KTC9018 | | | | | | | |
| | KTC3193 | KTC3192 KTC9011 | | | | | | | |
| | KTC3191 | BC548 BC549 KTC3190 | | | | | | | |
| | KTC1020 | BC517 KTC3202 KTC9013 MPSA13 MPSA14 | | | | | | | |
| | | KN2222 KTN2222 | | | | | | | |
| | KTC3204 | KTC3203 KTC8050 | | | | | | | |
| | | KTC3210 | KTC3205 | | | | | | |
| | | KTD1882 | | | KTC2804 KTD882 | KTC4369 | KTC3230 | | |
| | | KN3903 KN3904 2N3904 2N3904C | | | | | | | |
| | | KN2222A KN4400 KN4401 KTN2222A | | | | | | | |
| | | BC237 BC238 BC550 | | | | | | | |
| | | KTC200 BC337 | | | | | | | |
| | KTC3199 KTC3199L KTC3113 | KTC945 KTC945B KTC3198 KTC3198L KTC3112 KTC9014 | | | KTC3114 | | | | |
| | | | KTD1028 | | | | | | |
| KTC2815D | | | KTC3209 KTD1347 | KTC2815L | KTC2814 | | | | |
| | | BC637 MPSA05 | | | | | | | |
| | | MPS651 KTC1008 | KTD863 | | | | | | |
| KTD2020D | | | | KTC2020L | | KTC2026 KTD2058 KTD2424 | KTC2016 KTD1351 | | |
| KTC5103D | | | | KTC5103L | KTD1411 KTD1691 | KTC1003 | KTC3231 | | |
| | | BC546 | | | | | | | |

NPN Transistors ($V_{CE0} : 80V \sim 1500V$)

| V_{CE0} | IC | VSM | ESM | TESV | TES6 | USM | USV | US6 | TSM | TSV | TS6 | SOT-23 | SOT-89 |
|-----------|-------|---|---|---|---|---|---|---|--|---|---|---|---|
| | | (Unit: mm) | | | | | | | | | | | |
| | |  |  |  |  |  |  |  |  |  |  |  |  |
| | | ■ (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) | ■ (4.7X2.5) |
| 80V | 100mA | | | | | | | | | | | BSS64 | |
| | 400mA | | | | | | | | | | | | KTC4374 |
| | 500mA | | | | | | | | | | | MMBTA06 | |
| | 800mA | | | | | | | | | | | | |
| | 1A | | | | | | | | | | | | KTD1898 |
| | 3A | | | | | | | | | | | | |
| | 4A | | | | | | | | | | | | |
| | 5A | | | | | | | | | | | | |
| | 6A | | | | | | | | | | | | |
| 100V | 10A | | | | | | | | | | | | |
| | 2A | | | | | | | | | | | | |
| | 3A | | | | | | | | | | | | |
| | 5A | | | | | | | | | | | | |
| | 6A | | | | | | | | | | | | |
| | 7A | | | | | | | | | | | | |
| 120V | 10A | | | | | | | | | | | | |
| | 25A | | | | | | | | | | | | |
| | 100mA | | | | | KTC4077 | | | | | | KTC3911S | |
| | 800mA | | | | | | | | | | | | KTC4373 |
| | 1A | | | | | | | | | | | | |
| | 1.2A | | | | | | | | | | | | |
| 140V | 8A | | | | | | | | | | | | |
| | 10A | | | | | | | | | | | | |
| | 600mA | | | | | | | | | | | 2N5550S | |
| 150V | 10A | | | | | | | | | | | | KTC4372 |
| | 12A | | | | | | | | | | | | |
| | 50mA | | | | | | | | | | | | |
| 160V | 10A | | | | | | | | | | | | |
| | 600mA | | | | | | | | | | | 2N5551S | |
| | 1.5A | | | | | | | | | | | | |
| 180V | 100mA | | | | | | | | | | | | |
| | 1.5A | | | | | | | | | | | | |
| | 2A | | | | | | | | | | | | |
| 200V | 100mA | | | | | | | | | | | | |
| | 500mA | | | | | | | | | | | MMBTA43 | |
| 230V | 1A | | | | | | | | | | | | |
| | 15A | | | | | | | | | | | | |
| 250V | 50mA | | | | | | | | | | | | |
| 300V | 50mA | | | | | | | | | | | | |
| | 100mA | | | | | | | | | | | | |
| | 200mA | | | | | | | | | | | | |
| | 500mA | | | | | | | | | | | MMBTA42 | |
| 350V | 300mA | | | | | | | | | | | | |
| 400V | 300mA | | | | | | | | | | | | |
| | 1.5A | | | | | | | | | | | | |
| | 2A | | | | | | | | | | | | |
| | 4A | | | | | | | | | | | | |
| | 5A | | | | | | | | | | | | |
| | 7A | | | | | | | | | | | | |
| 500V | 8A | | | | | | | | | | | | |
| | 3A | | | | | | | | | | | | |
| 800V | 5A | | | | | | | | | | | | |
| | 1.5A | | | | | | | | | | | | |
| 1500V | 3A | | | | | | | | | | | | |
| | 6A | | | | | | | | | | | | |

| DPAK | TO-92M | TO-92 | TO-92L | IPAK | TO-126 | TO-220IS | TO-220AB | TO-3P(H)IS | TO-3P(N) |
|---|---|---|---|---|---|--|---|---|---|
|  |  |  |  |  |  |  |  |  |  |
| (6.6X6.1) | | | | | | | | | |
| | | | KTC3227 | | | | | | |
| | | MPSA06 | | | | | | | |
| | | | KTC1006 | | | | | | |
| | | | KTD1863 | | | | | | |
| | | | | | | KTD2092 | | | |
| | | | | | | KTD1414 KTD2060 | KTD1352 KTD686 KTC2078 | | |
| | | | | | | KTD2066 | | | |
| | | | | | | | KTC4512 | | |
| | | | | | | KTD1937 | | | |
| MJD112 | | | | MJD112L | | | | TIP112 | |
| | | | | | | | | TIP31C | |
| KTC2022D | | | | KTC2022L | | KTC2028 KTD1413 KTD2059 | KTC2018 KTD525 TIP122 TIP41C | | |
| | | | | | | KTD1415 | | | |
| | | | | | | | | | TIP33C |
| | | | | | | | | | TIP35C |
| | | KTC3400 KTC3200 | | | | | | | |
| | | | KTC1027 | | | | | | |
| KTC2025D | | | | KTC2025L | KTD600K KTC2803 | | | | |
| | | | | | | | | | KTD718A |
| | | | | | | | KTD3055 | KTD998 | KTC5197 KTD718 |
| | | 2N5550 | | | | | | | KTC4468 |
| | | | | | | | | | KTD1047 |
| | | | KTC3206 | | KTC3423 | | | | |
| | | | | | | | | | KTD1510 |
| | | 2N5551 2N5551C | | | | | | | |
| | | | KTC3228 | | | | | | |
| KTC2983D | | | | KTC2983L | KTC2800 | KTC4370 | KTC2238 | | |
| | | | KTC1026 | | | | | | |
| | | | | | | KTC4370A | KTC2238A | | |
| | | | | | | KTD2061 | KTD2161 | | |
| | | | KTC3467 | | KTC3502 | | | | |
| | | MPSA43 | | | | | | | |
| | | | | | | KTC4793 | | | |
| | | | | | | | | | KTC5242 |
| | | BF422 BF420 | | | | | | | |
| | | | KTC3207 | | KTC2801 KTC3503 KTC4217 | KTC3229 | | | |
| | | MPSA42 | | | | | | | |
| | | MPSA45 KTC3245 | | | | | | | |
| | | MPSA44 | | | | | | | |
| | | | | | MJE13003 | | | | |
| KTC3631D | | | | KTC3631L | | | | | |
| | | | | | | MJE13005F KTC4419 | MJE13005 | | |
| | | | | | | MJE13007F | MJE13007 | | |
| | | | | | | KTC4520F | KTC4520 | | |
| | | | | | | KTC4521F | KTC4521 | | |
| | | | | | | | KTC4526 | | |
| | | | | | | KTC4527F | KTC4527 | | |
| | | | | | | | | KTD2499 | |

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 | |
| 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 | |
| KTX301U | C□ | | - | -50 | -150 | 100 | 120 | 400 | -6 | -2 | -0.3 | -100 | -10 | 80 | - | -10 | -1 | |
| KTX401U | C□ | | - | 50 | 150 | 100 | 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 | |

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

Small Signal General Purpose Transistors

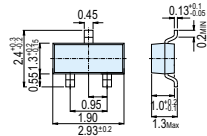
| Type No. | Complementary | Max. Ratings | | | hFE | | VCE(sat) (V) | | | fr (MHz) | | | | Package | Outline (Unit: mm) | | | |
|----------|---------------|--------------|------|----------|---------|---------|--------------|------|---------|----------|---------------|-------|------|---------|--------------------|---------|---------|--|
| | | Mark | Mark | VCEO (V) | IC (mA) | PC (mW) | Min. | Max. | VCE (V) | IC (mA) | IB (mA) | Min. | Typ. | | | VCE (V) | IC (mA) | |
| KTA701E | S | | - | -50 | -150 | 200 | 120 | 400 | -6 | -2 | -0.3 | -100 | -10 | 80 | - | -10 | -1 | |
| 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 | |
| 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 | |
| KTA701U | S | | - | -50 | -150 | 200 | 120 | 400 | -6 | -2 | -0.3 | -100 | -10 | 80 | - | -10 | -1 | |
| KTC801U | L | | - | 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 | |
| KTX311T | C | | - | -20 | -1A | 900▲ | 120 | 400 | -2 | -50 | -0.3 | -500 | -50 | - | 180 | -10 | -50 | |
| KTX411T | C | | - | 20 | 1A | 900▲ | 120 | 400 | 2 | 50 | 0.3 | 500 | 50 | - | 180 | 10 | 50 | |
| KTX111T | B | | - | ±30 | ±500 | 900▲ | 70 | 240 | ±1 | ±100 | ±0.25 | ±100 | ±10 | - | 300 200 | ±6 | ±20 | |
| KTX511T | DA | | - | -20 | -1.5A | 900▲ | 200 | 560 | -2 | -100 | -0.18 | -750 | -15 | - | 210 | -2 | -100 | |
| KTX512T | DB | | - | -20 | -3A | 900▲ | 200 | 560 | -2 | -500 | -0.165 | -1.5A | -30 | - | 160 | -2 | -500 | |

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

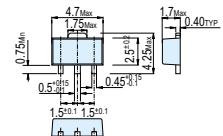
Small Signal General Purpose Transistors

| Type No. | Complementary | | Max. Ratings | | | hFE | | | | VCE(sat) (V) | | | fr (MHz) | | | | Package | Outline (Unit: mm : Max.) |
|----------|---------------|----------|--------------|---------|---------|------|------|---------|---------|--------------|---------|---------|----------|------|---------|---------|---------|---------------------------|
| | 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) | | |
| 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 | |
| KN3905S | ZSA | KN3903S | ZRA | -40 | -200 | ※350 | 30 | - | -1 | -0.1 | -0.25 | -10 | -1 | - | 200 | -20 | -10 | |
| 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 | |
| KN4402S | ZVA | KN4400S | ZTA | -40 | -600 | ※350 | 30 | - | -1 | -1 | -0.4 | -150 | -15 | 200 | - | -10 | -20 | |
| 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 | |
| KN3903S | ZRA | KN3905S | ZSA | 40 | 200 | ※350 | 20 | - | 1 | 0.1 | 0.2 | 10 | 1 | - | 300 | 20 | 10 | |
| 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 | |
| KN4400S | ZTA | KN4402S | ZVA | 40 | 600 | ※350 | 20 | - | 1 | 1 | 0.4 | 150 | 15 | 200 | - | 10 | 20 | |
| KN4401S | ZUA | KN4403S | ZWA | 40 | 600 | ※350 | 20 | - | 1 | 0.1 | 0.4 | 150 | 15 | 250 | - | 10 | 20 | |
| 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 | |
| KTA1664 | R□ | KTC4376 | P□ | -30 | -800 | @1W | 100 | 320 | -1 | -100 | -0.7 | -500 | -20 | - | 120 | -5 | -10 | |
| KTA1663 | H□ | KTC4375 | 1 | -30 | -1.5A | @1W | 100 | 320 | -2 | -500 | -2 | -1.5A | -30 | - | 120 | -2 | -500 | |
| KTA1668 | J□ | KTC4378 | 1 | -60 | -1A | @1W | 60 | 200 | -2 | -50 | -0.7 | -500 | -50 | - | 150 | -10 | -50 | |
| KTA1662 | F□ | KTC4374 | 1 | -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 | |

SOT-23



SOT-89



Note) ※ : Package Mounted on 99.5% Alumina 10 × 8 × 0.6mm, @: Package Mounted on Ceramic Substrate (250mm² × 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) | Max. | 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 | USM | |
| 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 | - | - | - | - | - | SOT-23 | |
| 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. | Complementary | | Max. Ratings | | | hFE | | | VCE(sat) (V) | | | fr (MHz) | | Ron(Ω) | | | Package | Outline (Unit: mm) | | | | |
|----------|---------------|------|--------------|---------|---------|------|------|---------|--------------|------|---------|----------|------|---------|---------|------|---------|--------------------|---------|---------|---------|--|
| | Mark | Mark | 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) | |
| 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 | | |

Note) □: hFE Grade

■ 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. | Typ. | Max. | VCE (V) | IC (mA) | Max. | IC (mA) | IB (mA) | Min. | | | Typ. |
| 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 | | |
| MMBTAS17 | 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 | | |

Note) △: VCEX

■ Small Signal High hFE 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. | Typ. | Max. | VCE (V) | IC (mA) | Max. | IC (mA) | IB (mA) | Min. | | | Typ. | Max. | | |
| 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 | | |

Note) @: Mounted on Ceramic Substrate (250mm²>0.8t), □: hFE Grade

■ Small Signal Strobe Flash 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) | Typ. | VCE (V) | | | IC (mA) | |
| KTA1001 | K□ | - | - | -20 | -3A | @1W | 100 | 320 | -2 | -500 | -0.5 | -3A | -75 | 170 | -2 | -500 | SOT-89 | |
| KTC4377 | S□ | - | - | 10 | 2A | @1W | 140 | 600 | 1 | 500 | 0.5 | 2A | 50 | 150 | 1 | 500 | | |

Note) @: Mounted on Ceramic Substrate (250mm²>0.8t), □: hFE Grade

Small Signal High Voltage Transistors

| Type No. | Complementary | | Max. Ratings | | | hFE | | | | VCE(sat) (V) | | | fr (MHz) | | | Package | Outline (Unit: mm) | | | |
|----------|---------------|---------|--------------|---------|---------|------|------|---------|---------|--------------|------|---------|----------|------|------|---------|--------------------|--------|---------|---------|
| | Mark | Mark | 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) |
| 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 |
| 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 (250mm×0.8t), □ : hFE Grade

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 : Max.) | | |
|----------|--------------|----------|---------|---------|------|------|---------|--------------|---------|------|----------|------|---------|----------|------|---------|-------|----------|---------|---------------------------|---------|------|
| | Mark | VCE0 (V) | IC (mA) | Pc (mW) | Min. | Max. | VCE (V) | IC (mA) | IB (mA) | Min. | Typ. | Max. | VCE (V) | IC (mA) | Max. | VCB (V) | Max. | | | | f (MHz) | Min. |
| KTC4080E | Q□ | 30 | 20 | 100 | 40 | 200 | 6 | 1 | - | - | - | - | 550 | - | 6 | 1 | - | 5 | 2.5 | 15 | ESM | |
| 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 | - | - | USM | |
| 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 | - | - | - | - | 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 | | |
| 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 | - | - | | |
| KTC3121 | VA | 15 | 50 | 150 | 60 | 320 | 3 | 8 | - | - | - | 1100 | 1500 | - | 10 | 8 | 1.3 | 10 | - | - | | |
| 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 | - | - | - | - | 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 | - | | |

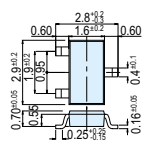
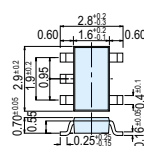
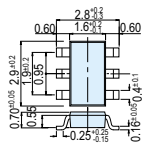
Note) ◇ : Typ., □ : hFE Grade

Small Signal Switching Transistors

| Type No. | Complementary | | Max. Ratings | | | hFE | | | | VCE(sat) (V) | | | ft (MHz) | ton (ns) | toff (ns) | td (ns) | tr (ns) | tstg (ns) | tf (ns) | Package | Outline (Unit: mm : Max.) |
|-----------|---------------|-----------|--------------|---------|---------|------|---------|---------|---------|--------------|---------|---------|----------|----------|-----------|---------|---------|-----------|---------|---------|---------------------------|
| | Mark | Mark | VCE0 (V) | IC (mA) | Pc (mW) | Max. | VCE (V) | IC (mA) | IB (mA) | Max. | IC (mA) | IB (mA) | | | | | | | | | |
| 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 | - | - | - | 13 | - | | |
| 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 | | |
| 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 | |
| KTBI124 | 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□ | KTBI124 | 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 (250mm×0.8t), □ : hFE Grade

Small Signal Low VCE(sat) 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) | Typ. | VCE (V) | | | IC (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 | | | | |
| KTA1543T | SJ | KTC3543T | HJ | -30 | -5 | 900 | 200 | 560 | -2 | -500 | -0.21 | -2.5A | -50 | 250 | -10 | -500 | | | | |
| * 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 | | | | |
| * KTA1553T | SM | KTC3553T | HM | -50 | -5 | 900 | 200 | 560 | -2 | -500 | -0.45 | -2A | -40 | 250 | -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 | KTA1543T | SJ | 30 | 5 | 900 | 200 | 560 | 2 | 500 | 0.165 | 2.5A | 50 | 290 | 10 | 500 | | | | |
| * 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 | KTA1553T | SM | 50 | 5 | 900 | 200 | 560 | 2 | 500 | 0.15 | 2A | 40 | 330 | 10 | 500 | | | | |
| KTA511T | S□ | KTC611T | L□ | -30 | -0.5 | 900 | 70 | 240 | -1 | -100 | -0.25 | -100 | -10 | 200 | -6 | -20 | | | TSV |  |
| KTC611T | L□ | KTA511T | S□ | 30 | 0.5 | 900 | 70 | 240 | 1 | 100 | 0.25 | 100 | 10 | 300 | 6 | 20 | | | | |
| KTA711T | S□ | KTC811T | L□ | -30 | -0.5 | 900 | 70 | 240 | -1 | -100 | -0.25 | -100 | -10 | 200 | -6 | -20 | | | TS6 |  |
| KTC811T | L□ | KTA711T | S□ | 30 | 0.5 | 900 | 70 | 240 | 1 | 100 | 0.25 | 100 | 10 | 300 | 6 | 20 | | | | |

Note ▲ : Package mounted on a ceramic board (600mm² × 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 | 1.3 | - | 100 | 320 | -2 | -500 | -0.5 | -3A | -75 | 170 | -2 | -500 | DPAK | |
| KTA1834D | KTC5001D | -20 | -10 | 1.3 | 10 | 120 | 390 | -2 | -500 | -0.25 | -4A | -50 | 150 | -5 | -1.5A | | |
| KTA1040D | KTC2020D | -60 | -3 | 1.3 | 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 | 1.3 | 8 | 100 | 320 | -5 | -50 | -0.4 | -500 | -50 | 110 | -10 | -50 | | |
| KTA1225D | KTC2983D | -160 | -1.5 | 1.3 | 10 | 70 | 240 | -5 | -100 | -1.5 | -500 | -50 | 100 | -10 | -100 | | |
| KTC3072D | - | 20 | 5 | 1.3 | - | 120 | 700 | 2 | 500 | 0.4 | 3A | 60 | 100 | 6 | 50 | | |
| KTC5001D | KTA1834D | 20 | 10 | 1.3 | 10 | 120 | 390 | 2 | 500 | 0.25 | 4A | 50 | 150 | 5 | 1.5A | | |
| KTC2020D | KTA1040D | 60 | 3 | 1.3 | 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 | 1.3 | 8 | 100 | 320 | 5 | 50 | 0.4 | 500 | 50 | 130 | 10 | 50 | | |
| KTC2983D | KTA1225D | 160 | 1.5 | 1.3 | 10 | 70 | 240 | 5 | 100 | 1.5 | 500 | 50 | 100 | 10 | 100 | | |

Note) ★ : Ta=25 °C, ☆ : Tc=25 °C

■ Switching Power Transistors

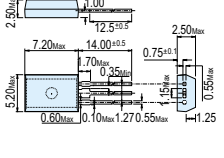
| Type No. | Complementary | Max. Ratings | | | | hFE | | | | VCE(sat) (V) | | | fr (MHz) | ton (μs) | toff (μs) | td (μs) | tr (μs) | tstg (μs) | tf (μs) | Package | Outline (Unit: mm) |
|----------|---------------|--------------|--------|--------|------|---------|---------|------|--------|--------------|------|------|----------|----------|-----------|---------|---------|-----------|---------|---------|--------------------|
| | | VCEO (V) | IC (A) | PC (W) | Max. | VCE (V) | IC (mA) | Max. | IC (A) | IB (mA) | Typ. | Max. | | | | | | | | | |
| 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 | | | |
| KTA1862D | KTC3631D | -400 | -2 | 10 | 180 | -5 | -100 | -0.5 | 0.5 | -100 | 18 | 0.2◆ | - | - | - | - | 1.8◆ | 0.4◆ | | | |
| 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 | | | |
| KTC3631D | KTA1862D | 400 | 2 | 10 | 180 | 5 | -100 | 0.5 | 0.5 | 100 | 18 | 0.2◆ | - | - | - | - | 1.8◆ | 0.4◆ | | | |

Note) ◆ : Typ

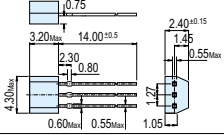
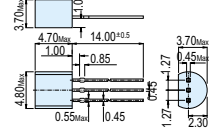
■ Darlington Power Transistors

| Type No. | Complementary | Max. Ratings | | | hFE | | | VCE(sat) (V) | | | fr (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) |
| 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 | | |

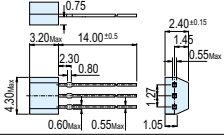
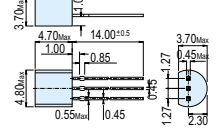
Small Signal General Purpose Transistors

| 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) | | |
| | | | | | | | | | | | | | | | | | |
| KTA1273 | KTC3205 | -30 | -2A | 1W | 100 | 320 | -2 | -500 | -2 | -1.5A | -30 | - | 120 | -2 | -500 | TO-92L |  |
| 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 | | |

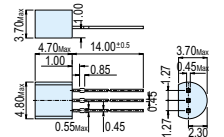
Small Signal Low Noise Transistors

| Type No. | Complementary | Max. Ratings | | | hFE | | | | VCE(sat) (V) | | | NF (dB) | | | | Package | Outline (Unit: mm) |
|----------|---------------|--------------|---------|---------|------|---------|---------|------|--------------|---------|------|---------|---------|---------|---------|---------|---|
| | | VCE0 (V) | IC (mA) | PC (mW) | Max. | VCE (V) | IC (mA) | Max. | IC (mA) | IB (mA) | Max. | VCE (V) | IC (mA) | Rg (kΩ) | f (kHz) | | |
| | | | | | | | | | | | | | | | | | |
| KTA1267L | KTC3199L | -50 | -150 | 400 | 400 | -6 | -2 | -0.3 | -100 | -10 | 6.0 | -6 | -0.1 | 10 | 0.1 | TO-92M |  |
| KTC3199L | KTA1267L | 50 | 150 | 400 | 700 | 6 | 2 | 0.25 | 100 | 10 | 6.0 | 6 | 0.1 | 10 | 0.1 | | |
| KTA1266L | KTC3198L | -50 | -150 | 625 | 400 | -6 | -2 | -0.3 | -100 | -10 | 6.0 | -6 | -0.1 | 10 | 0.1 | TO-92 |  |
| 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 | | |
| 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 | | |

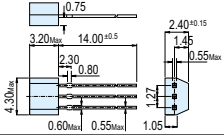
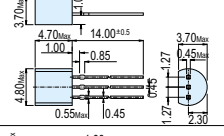
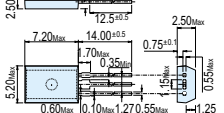
Small Signal Audio Muting Transistors

| Type No. | Complementary | Max. Ratings | | | hFE | | | | VCE(sat) (V) | | | 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 (kHz) | | | IB (mA) | Vin (V) |
| | | | | | | | | | | | | | | | | | | | | |
| KTD1303 | - | 20 | 300 | 400 | 200 | 800 | 2 | 4 | 0.25 | 100 | 10 | 60 | 10 | 1 | 0.6 | 1 | 1 | 0.3 | TO-92M |  |
| KTC2874 | - | 20 | 300 | 625 | 200 | 1200 | 2 | 4 | 0.3 | 30 | 3 | 30 | 6 | 4 | - | - | - | - | | |
| KTD1302 | - | 20 | 300 | 625 | 200 | 800 | 2 | 4 | 0.25 | 100 | 10 | 60 | 10 | 1 | 0.6 | 1 | 1 | 0.3 | TO-92 |  |

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. | Typ. | Max. | VCE (V) | IC (mA) | Max. | IC (mA) | IB (mA) | Min. | Typ. | VCE (V) | | | IC (mA) |
| | | | | | | | | | | | | | | | | | | |
| MPSA62 | - | -20 | -500 | 625 | 20,000 | - | - | -5 | -10 | -1 | -10 | -0.01 | 125 | -5 | -10 | TO-92 |  | |
| 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 | | | |
| MPSA13 | MPSA63 | 30 | 500 | 625 | 5,000 | - | - | 5 | 10 | 1.5 | 100 | 0.1 | 125 | 5 | 10 | | | |
| MPSA14 | MPSA64 | 30 | 500 | 625 | 10,000 | - | - | 5 | 10 | 1.5 | 100 | 0.1 | 125 | 5 | 10 | | | |

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) | | |
| | | | | | | | | | | | | | | | | | | | Max. | Max. |
| 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 | | | TO-92 |  |
| KTD1028 | - | 50 | 1A | 1W | 800 | 1500 | 3200 | 5 | 300 | 0.3 | 500 | 5 | 150 | 250 | 10 | 500 | | | TO-92L |  |

■ 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 | TO-92 | | | |
| 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 | 200 | -10 | -10 | -0.5 | -10 | -1 | - | - | - | - | - | | | | |
| 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 | TO-92 | | | |
| 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 | | | | |
| KTA1023 | KTC1027 | -120 | -800 | 1W | 80 | 240 | -5 | -100 | -1 | -500 | -50 | - | 120 | - | -5 | -100 | | | TO-92L | |
| 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 | | | | |
| KTA1279 | - | -300 | -500 | 625 | 40 | - | -10 | -10 | -0.5 | -10 | -1 | 50 | - | - | 20 | -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 | | | | |
| KTC3245 | - | 350 | 300 | 625 | 50 | 200 | 10 | 10 | 0.5 | 10 | 1 | - | - | - | - | - | | | | |
| KTC3217 | - | 450 | 100 | 1W | 40 | 80 | 10 | 20 | 0.5 | 10 | 1 | 50 | - | - | 10 | 20 | | | | |
| 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 (mA) | PC (mW) | Min. | Max. | VCE (V) | IC (mA) | Max. | IC (mA) | IB (mA) | Typ. | VCE (V) | IC (mA) | | | |
| KTA1243 | - | -20 | -5A | 625 | 100 | 320 | -2 | -0.5 | -0.5 | -3A | -75 | 170 | -2 | -500 | TO-92 | | |
| KTD1146 | - | 20 | 5A | 625 | 120 | 700 | 2 | 500 | 0.4 | 3A | 60 | 100 | 6 | 50 | | | |
| KTA1241 | - | -20 | -5A | 1W | 100 | 320 | -2 | -500 | -0.5 | -3A | -75 | 170 | -2 | -500 | TO-92L | | |
| KTC3226 | - | 10 | 2A | 1W | 140 | 600 | 1 | 500 | 0.5 | 2A | 50 | 150 | 1 | 500 | | | |
| KTD1145 | - | 20 | 5A | 1W | 140 | 600 | 2 | 500 | 0.5 | 3A | 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) | |
|----------|--------------|---------|---------|------|------|---------|---------|--------------|---------|---------|----------|------|------|---------|----------|------|---------|------|----------|---------|--------------------|------|
| | 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. | VCB (V) | Max. | f (MHz) | | | Min. |
| KTC3195 | 30 | 20 | 400 | 40 | 200 | 6 | 1 | - | - | - | - | 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 | - | - | - | - | 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 | - | - | - | | |

Note) ◇ : Typ.

■ 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) | |
|----------|---------------|--------------|---------|---------|------|---------|---------|-------|--------------|---------|------|----------|----------|-----------|---------|---------|-----------|---------|---------|--------------------|--|
| | | VCEO (V) | IC (mA) | PC (mW) | Max. | VCE (V) | IC (mA) | Max. | IC (mA) | IB (mA) | | | | | | | | | | | |
| 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◇ | | | | |

Note) ◇ : Typ.

■ 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) | Min. | Max. | VCE (V) | IC (mA) | Max. | IC (mA) | IB (mA) | Min. | Typ. | VCE (V) | IC (mA) | | |
| KTB778 | KTD998 | -120 | -10 | 80 | 55 | 160 | -5 | -1A | -2.5 | -5A | -500 | - | 10 | -5 | -1A | TO-3P(H)IS | |
| 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 | TO-3P(N) | |
| 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 | | |
| KTA1962 | KTC5242 | -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 | | |
| KTC5242 | KTA1962 | 230 | 15 | 130 | 55 | 160 | 5 | 1A | 3 | 8A | 800 | - | 30 | 5 | 1A | | |

Note) ☆ : Tc=25 °C

■ Switching Power Transistors

| Type No. | Complementary | Max. Ratings | | | hFE | | | | VCE(sat) (V) | | | fr | ton | tstg | tf | Package | Outline (Unit: mm) | | | |
|-----------|---------------|--------------|--------|--------|------|------|---------|---------|--------------|---------|---------|-------|------|------|------|---------|--------------------|-----|----------|--|
| | | VCEO (V) | IC (A) | PC (W) | Min. | Max. | VCE (V) | IC (mA) | Max. | IC (mA) | IB (mA) | (MHz) | (μs) | (μs) | (μs) | | | | | |
| KTA1718L | KTC2815L | -50 | -2 | 10 | 70 | 240 | -2 | -500 | -0.5 | -1 | -50 | 100 | 0.1 | - | 1.0 | - | 0.1 | - | IPAK | |
| KTA1385L | KTC5103L | -60 | -5 | 15 | 160 | 400 | -1 | -2A | -0.3 | -2 | -200 | - | 0.2 | 1 | 1.1 | 2.5 | 0.2 | 1 | | |
| KTA1862L | KTC3631L | -400 | -2 | 10 | 56 | 180 | -5 | -100 | -0.5 | 0.5 | -100 | 18 | 0.2 | - | 1.8 | - | 0.4 | - | | |
| 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 | | |
| KTC3631L | KTA1862L | 400 | 2 | 10 | 56 | 180 | 5 | 100 | 0.5 | 0.5 | 100 | 18 | 0.2 | - | 1.8 | - | 0.4 | - | | |
| MJE13003 | - | 400 | 1.5 | 20 | 8 | 40 | 2 | 0.5 | 0.5 | 0.5 | 100 | 4◆ | - | 1.1 | - | 4 | - | 0.7 | TO-126 | |
| 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 | 19 | 36 | 5 | 1A | 0.5 | 1 | 200 | 4◆ | - | 0.8 | - | 4 | - | 0.9 | TO-220IS | |
| MJE13007F | - | 400 | 8 | 40 | 19 | 36 | 5 | 2A | 1 | 2 | 400 | 4◆ | - | 1.6 | - | 3 | - | 0.7 | | |
| KTC4419 | - | 400 | 5 | 30 | 20 | - | 4 | 100 | 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 | | |
| KTC4527F | - | 800 | 3 | 40 | 15 | 50 | 5 | 200 | 2 | 1.5 | 300 | 15 | - | 0.5 | - | 3 | - | 0.3 | | |
| MJE13005 | - | 400 | 4 | 75 | 19 | 36 | 5 | 1A | 0.5 | 1 | 200 | 4◆ | - | 0.8 | - | 4 | - | 0.9 | TO-220AB | |
| MJE13007 | - | 400 | 8 | 80 | 19 | 36 | 5 | 2A | 1 | 2 | 400 | 4◆ | - | 1.6 | - | 3 | - | 0.7 | | |
| KTC4520 | - | 500 | 3 | 40 | 15 | 50 | 5 | 300 | 1 | 1.5 | 300 | 18 | - | 0.5 | - | 3 | - | 0.3 | | |
| KTC4521 | - | 500 | 5 | 50 | 15 | 50 | 5 | 600 | 1 | 3 | 600 | 18 | - | 0.5 | - | 3 | - | 0.3 | | |
| KTC4526 | - | 800 | 1.5 | 40 | 15 | 40 | 5 | 100 | 2 | 0.75 | 150 | 15 | - | 0.5 | - | 3 | - | 0.3 | | |
| KTC4527 | - | 800 | 3 | 50 | 15 | 40 | 5 | 200 | 2 | 1.5 | 300 | 15 | - | 0.5 | - | 3 | - | 0.3 | | |

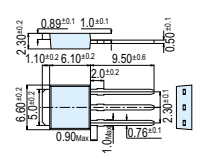
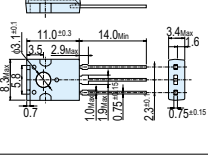
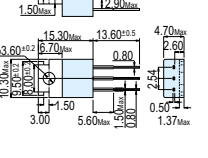
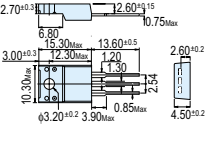
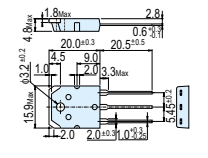
Note) ◆ : Min., ☆ : Tc=25 °C

■ High hFE Power Transistors

| Type No. | Complementary | Max. Ratings | | | hFE | | | | VCE(sat) (V) | | | fr | ton | tstg | tf | Package | Outline (Unit: mm) |
|----------|---------------|--------------|--------|---------|------|------|---------|--------|--------------|--------|---------|-------|------|------|------|----------|--------------------|
| | | VCEO (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 | | |
| KTD2066 | - | 80 | 5 | 30 | 500 | 1500 | 1 | 1 | 0.35 | 3 | 30 | 130 | 0.6 | 3 | 0.8 | TO-220IS | |
| KTD1937 | - | 80 | 10 | 40 | 500 | 1500 | 1 | 1 | 0.35 | 5 | 50 | 70 | 0.6 | 6 | 1 | | |

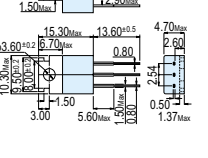
Note) ☆ : Tc=25 °C

■ Darlington Power Transistors

| Type No. | Complementary | Max. Ratings | | | hFE | | | | | VCE(sat) (V) | | | Package | Outline (Unit: mm) |
|----------|---------------|--------------|--------|---------|------|-------|-------|---------|--------|--------------|------|--------|----------|---|
| | | VCEs (V) | IC (A) | PC☆ (W) | Min. | Typ. | Max. | VCE (V) | IC (A) | IB (mA) | Max. | IC (A) | | |
| MJD117L | MJD112L | -100 | -2 | 20 | 1000 | 12000 | - | -3 | -2 | -2 | -2 | -8 | IPAK |  |
| MJD112L | MJD117L | 100 | 2 | 20 | 1000 | 12000 | - | 3 | 2 | 2 | 8 | | | |
| KTD1411 | - | 60 | 4 | 15 | 3000 | - | - | 2 | 1 | 1.5 | 3 | 30 | TO-126 |  |
| TIP117 | TIP112 | -100 | -2 | 50 | 1000 | - | - | -4 | -1 | -2.5 | -2 | -8 | TO-220AB |  |
| TIP127 | - | -120 | -5 | 65 | 1000 | - | - | -3 | -0.5 | -2 | -3 | -12 | | |
| TIP112 | TIP117 | 100 | 2 | 50 | 1000 | - | - | 4 | 1 | 2.5 | 2 | 8 | | |
| TIP122 | - | 100 | 5 | 65 | 1000 | - | 10000 | 3 | 0.5 | 2 | 3 | 12 | | |
| KTD686 | - | 80 | 4 | 30 | 2000 | - | - | 2 | 1 | 1.5 | 3 | 6 | TO-220IS |  |
| 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) ☆ : Tc=25℃

■ RF Power Transistors

| Type No. | Complementary | Max. Ratings | | | hFE | | | | VCE(sat) (V) | | | fr (MHz) | | Cob (pF) | Po (W) | | | Package | Outline (Unit: mm) | | | |
|----------|---------------|--------------|--------|---------|------|------|---------|--------|--------------|------|--------|----------|------|----------|---------|------|---------|---------|--------------------|---------|----------|---|
| | | VCE0 (V) | IC (A) | PC☆ (W) | Min. | Max. | VCE (V) | IC (A) | IB (mA) | Max. | IC (A) | IB (mA) | Min. | VCE (V) | IC (mA) | Typ. | VCB (V) | | | Vcc (V) | Pi (W) | f (MHz) |
| KTC2078 | - | 80 | 4 | 10 | 100 | 200 | 5 | 0.5 | 1.5 | 3 | 300 | 100 | 5 | 500 | 40 | 10 | 4 | 12 | 0.3 | 27 | TO-220AB |  |

Note) ☆ : Tc=25℃

■ Junction Field Effect Transistors (SMD Type)

| Type No. | Mark | Max. Ratings | | | Idss(mA) | | | NF (dB) | | | | Package | Outline (Unit: mm) | |
|----------|------|----------------------|---------------------|---------------------|---------------------|---------------------|------|---------------------|---------------------|------------------------------|---------|---------|--------------------|--|
| | | V _{GDO} (V) | I _G (mA) | P _D (mW) | V _{DS} (V) | V _{GS} (V) | Max. | V _{DD} (V) | I _D (mA) | R _G (k Ω) | f (kHz) | | | |
| KTK597V | F□ | -20 | 10 | 100 | 100 ~ 480 | 5 | 0 | - | - | - | - | - | VSM | |
| KTK597E | F□ | -20 | 10 | 100 | 100 ~ 480 | 5 | 0 | - | - | - | - | - | ESM | |
| KTK597 | F□ | -20 | 10 | 100 | 100 ~ 480 | 5 | 0 | - | - | - | - | - | USM | |
| KTK211 | K□ | -18 | 10 | 150 | 1 ~ 15 | 10 | 0 | 3.5 | 10 | - | - | 100MHz | SOT-23 | |

Note) □: Idss Grade

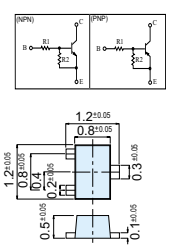
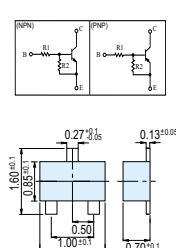
■ Junction Field Effect Transistors (Lead Type)

| Type No. | Max. Ratings | | | Idss(mA) | | | NF (dB) | | | | Package | Outline (Unit: mm) | |
|----------|----------------------|---------------------|---------------------|---------------------|---------------------|------|---------------------|---------------------|------------------------------|---------|---------|--------------------|--|
| | V _{GDO} (V) | I _G (mA) | P _D (mW) | V _{DS} (V) | V _{GS} (V) | Max. | V _{DD} (V) | I _D (mA) | R _G (k Ω) | f (kHz) | | | |
| KTK161 | -18 | 10 | 400 | 1 ~ 15 | 10 | 0 | 3.5 | 10 | - | - | 100MHz | TO-92M | |
| KTK596 | -20 | 10 | 400 | 100 ~ 480 | 5 | 0 | - | - | - | - | - | | |

■ SMOS FETs (SMD Type)

| Type No. | Max. Ratings | | | | Idss(μ A) | | | V _{th} (V) | | | | R _{ds(on)} (Ω) | | | Package | Outline (Unit: mm) |
|----------|---------------------|---------------------|---------------------|---------------------|----------------|---------------------|---------------------|---------------------|------|---------------------|---------------------|----------------------------------|---------------------|---------------------|---------|--------------------|
| | V _{DS} (V) | V _{GS} (V) | I _D (mA) | P _D (mW) | Max. | V _{DS} (V) | V _{GS} (V) | Min. | Max. | V _{DS} (V) | I _D (mA) | Max. | V _{GS} (V) | I _D (mA) | | |
| KTK5122E | 20 | 10 | 100 | 100 | 1 | 20 | 0 | 0.5 | 1.5 | 3 | 0.1 | 5.2 | 2.5 | 40 | ESM | |
| KTK5121S | 20 | 10 | 50 | 200 | 1 | 20 | 0 | 0.5 | 1.5 | 3 | 0.1 | 12 | 2.5 | 10 | SOT-23 | |
| KTK5122S | 20 | 10 | 100 | 200 | 1 | 20 | 0 | 0.5 | 1.5 | 3 | 0.1 | 5.2 | 2.5 | 40 | | |

■ 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. | Typ. | VCE (V) | IC (mA) | Max. | IC (mA) | IB (mA) | | | | | | |
| Mark | | Mark | | | | | | | | | | | | | | | | | |
| 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 | | PNP | | VCEO (V) | IC (mA) | PC (mW) | Min. | Typ. | VCE (V) | IC (mA) | Max. | IC (mA) | IB (mA) | | | | |
| Mark | Mark | Mark | Mark | | | | | | | | | | | | | | |
| KRC401 | NA | KRA301 | PA | 50 | 100 | 100 | 30 | 55 | 5 | 10 | 0.3 | 10 | 0.5 | 4.7 | 4.7 | USM | |
| 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 | | |
| 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

| 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 Ω) | R2(k Ω) | Package | Outline (Unit: mm) |
|----------|------|-----------------------------|--------------|---------|---------|------|------|---------|---------|--------------|---------|---------|-----------------|-----------------|---------|--------------------|
| | | | VCE0 (V) | IC (mA) | PC (mW) | Min. | Typ. | VCE (V) | IC (mA) | Max. | IC (mA) | IB (mA) | | | | |
| KRA751E | PA | | -50 | -100 | 200 | 30 | 55 | -5 | -10 | -0.3 | -10 | -0.5 | 4.7 | 4.7 | TES6 | |
| 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 | 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 | 10 | | |
| 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 | | |

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. | | | | | IC (mA) | IB (mA) |
| KRA551U | PA | | -50 | -100 | 200 | 30 | 55 | -5 | -10 | -0.3 | -10 | -0.5 | 4.7 | 4.7 | USV | |
| 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 | | |
| 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 | | |

Note) Pd= Total Rating

Small Signal General Purpose BRTs

| Type No. | Mark | Internal circuit (Top view) | Max. Ratings | | | hFE | | | | VCE(sat) (V) | | | R1(k Ω) | R2(k Ω) | Package | Outline (Unit: mm) |
|----------|------|-----------------------------|--------------|---------|---------|------|------|---------|---------|--------------|---------|---------|-----------------|-----------------|---------|--------------------|
| | | | VCE0 (V) | IC (mA) | Pc (mW) | Min. | Typ. | VCE (V) | IC (mA) | Max. | IC (mA) | IB (mA) | | | | |
| KRA751U | PA | | -50 | -100 | 200 | 30 | 55 | -5 | -10 | -0.3 | -10 | -0.5 | 4.7 | 4.7 | US6 | |
| 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 | | |

Note) Pd= Total Rating

■ Small Signal General Purpose BRTs

| Type No. | Mark | Internal circuit (Top view) | Max. Ratings | | | hFE | | | | VCE(sat) (V) | | | | | | R1(k Ω) | | R2(k Ω) | | Package | Outline (Unit: mm) | | | | | | |
|----------|------|-----------------------------|--------------|---------|---------|------|-----|------|-----|--------------|---------|------|----|---------|---------|-----------------|------|-----------------|-----|---------|--------------------|-----|-----|----|----|------|--|
| | | | VCE0 (V) | IC (mA) | Pd (mW) | Min. | | Typ. | | VCE (V) | IC (mA) | Max. | | IC (mA) | IB (mA) | 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 | 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 | | |
| 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 | | |
| 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 | | |
| 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 | - | - | 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 | | |
| 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 | | |
| 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 | | |
| 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 | | |
| 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 | 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 | | |
| 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 | | |
| 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 | | |
| 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 | - | - | | |
| 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 | US6 | |
| 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 | | |
| 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 | | |
| 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 | | |

Note) Pd= Total Rating

■ Small Signal Audio Muting BRTs

| Type No. | | Max. Ratings | | | hFE | | | | VCE(sat) (V) | | | R1 (k Ω) | Ron (Ω) | Package | Outline (Unit: mm) | | |
|----------|-----|--------------|---------|---------|------|------|---------|---------|--------------|---------|---------|------------------|------------------|---------|--------------------|--------|--|
| NPN | PNP | VCE0 (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 | - | TSV | |
| 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 | - | TS6 | |
| 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 | SOT-23 | |
| 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 | | |

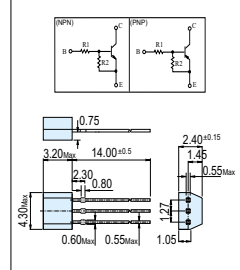
Note) ▲ : Package Mounted on a Ceramic Board (600mm² × 0.8mm)

■ Small Signal High Current BRTs

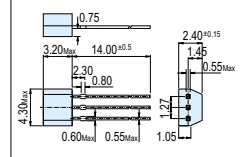
| Type No. | | | | Max. Ratings | | | Gi | | | Vo(ON) (V) | | | R1 (k Ω) | R2 (k Ω) | Package | Outline (Unit: mm) |
|----------|------|---------|------|--------------|---------|---------|------|--------|---------|------------|---------|---------|------------------|------------------|---------|--------------------|
| NPN | Mark | PNP | Mark | Vo (V) | Io (mA) | Pd (mW) | Min. | Vo (V) | Io (mA) | Max. | Io (mA) | Ii (mA) | | | | |
| KRC641T | NA | KRA521T | PA | 50 | 800 | 900▲ | 33 | 5 | 50 | 0.3 | 50 | 2.5 | 1 | 1 | TSV | |
| KRC642T | NB | KRA522T | PB | 50 | 800 | 900▲ | 39 | 5 | 50 | 0.3 | 50 | 2.5 | 2.2 | 2.2 | | |
| KRC643T | NC | KRA523T | PC | 50 | 800 | 900▲ | 47 | 5 | 50 | 0.3 | 50 | 2.5 | 4.7 | 4.7 | | |
| KRC644T | ND | KRA524T | PD | 50 | 800 | 900▲ | 56 | 5 | 50 | 0.3 | 50 | 2.5 | 10 | 10 | | |
| KRC645T | NE | KRA525T | PE | 50 | 800 | 900▲ | 56 | 5 | 50 | 0.3 | 50 | 2.5 | 1 | 10 | | |
| KRC646T | NF | KRA526T | PF | 50 | 800 | 900▲ | 56 | 5 | 50 | 0.3 | 50 | 2.5 | 2.2 | 10 | | |
| KRC841T | NA | KRA721T | PA | 50 | 800 | 900▲ | 33 | 5 | 50 | 0.3 | 50 | 2.5 | 1 | 1 | TS6 | |
| KRC842T | NB | KRA722T | PB | 50 | 800 | 900▲ | 39 | 5 | 50 | 0.3 | 50 | 2.5 | 2.2 | 2.2 | | |
| KRC843T | NC | KRA723T | PC | 50 | 800 | 900▲ | 47 | 5 | 50 | 0.3 | 50 | 2.5 | 4.7 | 4.7 | | |
| KRC844T | ND | KRA724T | PD | 50 | 800 | 900▲ | 56 | 5 | 50 | 0.3 | 50 | 2.5 | 10 | 10 | | |
| KRC845T | NE | KRA725T | PE | 50 | 800 | 900▲ | 56 | 5 | 50 | 0.3 | 50 | 2.5 | 1 | 10 | | |
| KRC846T | NF | KRA726T | PF | 50 | 800 | 900▲ | 56 | 5 | 50 | 0.3 | 50 | 2.5 | 2.2 | 10 | | |
| 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 | | |

Note) ▲ : Package Mounted on a Ceramic Board (600mm²×0.8mm)

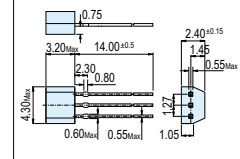
■ Small Signal General Purpose BRTs

| Type No. | | Max. Ratings | | | hFE | | | | VCE(sat) (V) | | | R1 | R2 | Package | Outline (Unit: mm : Max.) |
|----------|---------|----------------------|---------------------|---------------------|------|------|---------------------|---------------------|--------------|---------------------|---------------------|---------------|---------------|---------|---|
| NPN | PNP | V _{CEO} (V) | I _C (mA) | P _C (mW) | Min. | Typ. | V _{CE} (V) | I _C (mA) | Max. | I _C (mA) | I _B (mA) | (k Ω) | (k Ω) | | |
| 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 | R _{on} | Package | Outline (Unit: mm : Max.) |
|----------|-----|----------------------|---------------------|---------------------|------|------|---------------------|---------------------|--------------|---------------------|---------------------|---------------|-----------------|---------|---|
| NPN | PNP | V _{CEO} (V) | I _C (mA) | P _C (mW) | Min. | Max. | V _{CE} (V) | I _C (mA) | Max. | I _C (mA) | I _B (mA) | (k Ω) | (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 | R _{on} | Package | Outline (Unit: mm : Max.) |
|----------|---------|----------------------|---------------------|---------------------|------|---------------------|---------------------|------|---------------------|---------------------|---------------|--------------|-----------------|---|---------------------------|
| NPN | PNP | V _{CEO} (V) | I _C (mA) | P _C (mW) | Min. | V _{CE} (V) | I _C (mA) | Max. | I _C (mA) | I _B (mA) | (k Ω) | (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 | | | |

USA / European specification models types

Small Signal General Purpose Transistors (SMD Type)

| 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) | | | |
| BC858W | 3□ | BC848W | 1□ | -30 | -100 | 100 | 125 | 800 | -5 | -2 | -0.3 | -10 | -0.5 | - | 150 | -5 | -10 | USM | |
| 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 | - | - | - | - | SOT-23 | |
| 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 | | |
| KN3905S | ZSA | KN3903S | ZRA | -40 | -200 | ※350 | 30 | - | -1 | -0.1 | -0.25 | -10 | -1 | - | 200 | -20 | -10 | | |
| 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 | | |
| KN4402S | ZVA | KN4400S | ZTA | -40 | -600 | ※350 | 30 | - | -1 | -1 | -0.4 | -150 | -15 | 200 | - | -10 | -20 | | |
| 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 | | |
| KN3903S | ZRA | KN3905S | ZSA | 40 | 200 | ※350 | 20 | - | 1 | 0.1 | 0.2 | 10 | 1 | - | 300 | 20 | 10 | | |
| 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 | | |
| KN4400S | ZTA | KN4402S | ZVA | 40 | 600 | ※350 | 20 | - | 1 | 1 | 0.4 | 150 | 15 | 200 | - | 10 | 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 (SMD Type)

| 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 (SMD Type)

| 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) △: VCEX

Small Signal High Voltage Transistors (SMD Type)

| 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) | Max. | | | IC (mA) | IB (mA) | Min. | Typ. | Max. | VCE (V) |
| 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 | | |

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

Small Signal RF/ VHF/ UHF Transistors (SMD Type)

| Type No. | Complementary | Max. Ratings | | | hFE | | VCE(sat) (V) | | | fr (MHz) | | | Cob (pF) | | NF (dB) | | Gpe (dB) | Package | Outline (Unit: mm : Max.) | | | |
|----------|---------------|--------------|------|----------|---------|---------|--------------|------|---------|----------|---------|------|----------|------|---------|---------|----------|---------|---------------------------|------|---------|------|
| | | Mark | Mark | VCEO (V) | IC (mA) | PC (mW) | Min. | Max. | VCE (V) | 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 | - | - | | |

Note) ◇: Typ.

Small Signal Switching Transistors (SMD Type)

| Type No. | Complementary | Max. Ratings | | | hFE | | VCE(sat) (V) | | | ft (MHz) | ton (ns) | toff (ns) | td (ns) | tr (ns) | tstg (ns) | tf (ns) | Package | Outline (Unit: mm : Max.) | | | |
|-----------|---------------|--------------|------|----------|---------|---------|--------------|---------|---------|----------|----------|-----------|---------|---------|-----------|---------|---------|---------------------------|---------|--------|---------|
| | | Mark | Mark | 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 | 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 | | |
| 2N3906S | ZA | 2N3904S | ZC | -40 | -200 | ※350 | 300 | -1 | -0.1 | -0.25 | -10 | -1 | 250 | - | - | 35 | 35 | 225 | 75 | | |
| 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 | SOT-23 | |
| 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 (SMD Type)

| Type No. | Complementary | Max. Ratings | | | hFE | | VCE(sat) (V) | | | fr (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) |
| 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 | | |

USA / European specification models types

Small Signal General Purpose Transistors (Lead Type)

| 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) | | | | |
| | | | | | | | | | | | | | | | | | | Max. | IC (mA) |
| 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 | | | | |
| BC517 | - | 30 | 500 | 625 | 30k | - | 2 | 100 | 1 | 100 | 1 | - | 220 | 2 | 100 | | | | |
| 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 | | | | |
| BC560 | BC550 | 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 | | | TO-92 | |
| 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 | | | | |
| KN3905 | KN3903 | -40 | -200 | 625 | 30 | - | -1 | -0.1 | -0.25 | -10 | -1 | - | 200 | -20 | -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 | | | | |
| KN4402 | KN4400 | -40 | -600 | 625 | 30 | - | -1 | -1 | -0.4 | -150 | -15 | 200 | - | -10 | -20 | | | | |
| 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 | | | | |
| KN3903 | KN3905 | 40 | 200 | 625 | 20 | - | 1 | 0.1 | 0.2 | 10 | 1 | - | 300 | 20 | 10 | | | | |
| 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 | | | | |
| KN4400 | KN4402 | 40 | 600 | 625 | 20 | - | 1 | 1 | 0.4 | 150 | 15 | 200 | - | 10 | 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 | | | | |

Small Signal Darlington Transistors (Lead Type)

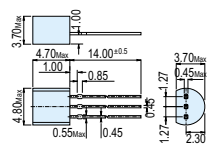
| Type No. | Complementary | Max. Ratings | | | hFE | | | VCE(sat) (V) | | | fr (MHz) | | | Package | Outline (Unit: mm) |
|----------|---------------|--------------|---------|---------|--------|---------|---------|--------------|---------|---------|----------|---------|---------|---------|--------------------|
| | | 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 | TO-92 | |
| 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 | | |
| MPSA13 | MPSA63 | 30 | 500 | 625 | 5,000 | 5 | 10 | 1.5 | 100 | 0.1 | 125 | 5 | 10 | | |
| MPSA14 | MPSA64 | 30 | 500 | 625 | 10,000 | 5 | 10 | 1.5 | 100 | 0.1 | 125 | 5 | 10 | | |

Small Signal RF/ VHF/ UHF Transistors (Lead Type)

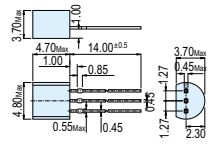
| Type No. | Max. Ratings | | | hFE | | | VCE(sat) (V) | | | fr (MHz) | | | Cob (pF) | | NF (dB) | | Gpe (dB) | Package | Outline (Unit: mm) | | | |
|----------|--------------|---------|---------|------|------|---------|--------------|------|---------|----------|------|------|----------|---------|---------|------|----------|---------|--------------------|---------|-------|---------|
| | 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 | TO-92 | |
| 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 High Voltage Transistors (Lead Type)

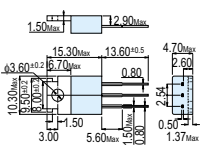
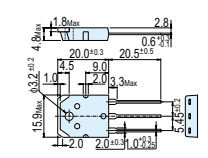
| Type No. | Complementary | Max. Ratings | | | hFE | | | | VCE(sat) (V) | | | fr (MHz) | | | | Package | Outline (Unit: mm) |
|----------|---------------|--------------|---------|---------|------|------|---------|---------|--------------|------|---------|----------|------|------|------|---------|--|
| | | VCE0 (V) | IC (mA) | PC (mW) | Min. | Max. | VCE (V) | IC (mA) | IB (mA) | Max. | IC (mA) | IB (mA) | Min. | Typ. | Max. | | |
| BF423 | BF422 | -250 | -50 | 625 | 50 | - | -20 | -25 | -0.6 | -30 | -5 | 60 | - | - | -10 | -10 | TO-92  |
| 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 | 200 | -10 | -10 | -0.5 | -10 | -1 | - | - | - | - | - | |
| 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 (Lead Type)

| 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. | | | | | | | | | |
| 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 | |

Note) ◇: Typ.

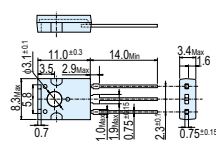
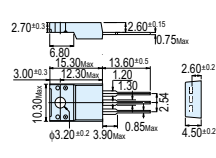
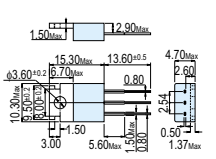
■ General Purpose Power Transistors (Lead Type)

| 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) | IB (mA) | Max. | IC (mA) | IB (mA) | Min. | Typ. | VCE (V) | | |
| TIP32C | TIP31C | -100 | -3 | 2 | 40 | 25 | - | -4 | -1A | -1.2 | -3A | -375 | 3 | - | -10 | -500 | TO-220AB  | |
| TIP42C | TIP41C | -100 | -6 | 2 | 65 | 30 | - | -4 | -300 | -1.5 | -6A | -600 | 3 | - | -10 | -500 | | |
| TIP31C | TIP32C | 100 | 3 | 2 | 40 | 25 | - | 4 | 1A | 1.2 | 3A | 375 | 3 | - | 10 | 500 | | |
| TIP41C | TIP42C | 100 | 6 | 2 | 65 | 30 | - | 4 | 300 | 1.5 | 6A | 600 | 3 | - | 10 | 500 | | |
| TIP34C | TIP33C | -100 | -10 | - | 80 | 55 | 160 | -4 | -2A | -1 | -4A | -400 | - | 20 | -12 | -500 | TO-3P(N)  | |
| 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 | | |

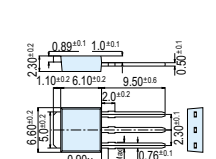
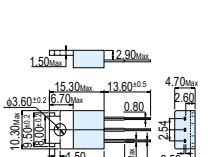
Note) ★: Ta=25°C, ☆: Tc=25°C

USA / European specification models types

■ Switching Power Transistors (Lead Type)

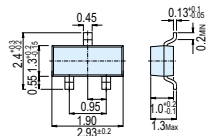
| Type No. | Complementary | Max. Ratings | | | hFE | | | VCE(sat) (V) | | | fr (MHz) | ton (μs) | | tstg (μs) | | tf (μs) | | Package | Outline (Unit: mm) | |
|-----------|---------------|--------------|-----------|-----------|------|------|------------|--------------|------|-----------|-------------|-------------|------|--------------|------|------------|------|---------|--------------------|--|
| | | VCEO (V) | IC (A) | PC (W) | Min. | Max. | VCE (V) | IC (mA) | Max. | IC (A) | | IB (mA) | Min. | Typ. | Max. | Typ. | Max. | | | Typ. |
| MJE13003 | - | 400 | 1.5 | 20 | 8 | 40 | 2 | 0.5 | 0.5 | 0.5 | 100 | 4 | - | 1.1 | - | 4 | - | 0.7 | TO-126 |  |
| MJE13005F | - | 400 | 4 | 30 | 19 | 36 | 5 | 1A | 0.5 | 1 | 200 | 4 | - | 0.8 | - | 4 | - | 0.9 | TO-220IS |  |
| MJE13007F | - | 400 | 8 | 40 | 19 | 36 | 5 | 2A | 1 | 2 | 400 | 4 | - | 1.6 | - | 3 | - | 0.7 | | |
| MJE13005 | - | 400 | 4 | 75 | 19 | 36 | 5 | 1A | 0.5 | 1 | 200 | 4 | - | 0.8 | - | 4 | - | 0.9 | TO-220AB |  |
| MJE13007 | - | 400 | 8 | 80 | 19 | 36 | 5 | 2A | 1 | 2 | 400 | 4 | - | 1.6 | - | 3 | - | 0.7 | | |

■ Darlington Power Transistors (Lead Type)

| Type No. | Complementary | Max. Ratings | | | hFE | | | VCE(sat) (V) | | | Package | Outline (Unit: mm) | | |
|----------|---------------|--------------|-----------|-------------|------|-------|-------|--------------|-----------|------|---------|--------------------|-----------|---|
| | | VCEs (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 | IPAK |  |
| MJD112L | MJD147117L | 100 | 2 | 20 | 1000 | 12000 | - | 3 | 2 | 2 | 2 | 8 | | |
| TIP117 | TIP112 | -100 | -2 | 50 | 1000 | - | - | -4 | -1 | -2.5 | -2 | -8 | TO-220AB |  |
| TIP127 | - | -120 | -5 | 65 | 1000 | - | - | -3 | -0.5 | -2 | -3 | -12 | | |
| TIP112 | TIP117 | 100 | 2 | 50 | 1000 | - | - | 4 | 1 | 2.5 | 2 | 8 | | |
| TIP122 | - | 100 | 5 | 65 | 1000 | - | 10000 | 3 | 0.5 | 2 | 3 | 12 | | |

Note) ☆ : Tc=25 °C

■ 300mW Zener Diodes (SMD Type)

| Type No. | Mark | Pd(MAX) (mW) ※ | Test Current I _{ZT} (mA) | Zener Voltage V _Z (± 5%) Nominal * | Z _{zk} I _Z =0.25mA Ω _{Max} | Z _{ZT} I _Z =I _{ZT} @10%Mod Ω _{Max} | Max I _R (μA) | | Package | Outline (Unit: mm) |
|-----------|------|-------------------|--------------------------------------|---|---|---|----------------------------|-----|---------|---|
| | | | | | | | V _R (V) | | | |
| MMBZ5221B | 18A | 300 | 20 | 2.4 | 1200 | 30 | 100 | 1 | SOT-23 |  |
| MMBZ5222B | 18B | | 20 | 2.5 | 1250 | 30 | 100 | 1 | | |
| MMBZ5223B | 18C | | 20 | 2.7 | 1300 | 30 | 75 | 1 | | |
| MMBZ5224B | 18D | | 20 | 2.8 | 1400 | 30 | 75 | 1 | | |
| MMBZ5225B | 18E | | 20 | 3 | 1600 | 29 | 50 | 1 | | |
| MMBZ5226B | 8A | | 20 | 3.3 | 1600 | 28 | 25 | 1 | | |
| MMBZ5227B | 8B | | 20 | 3.6 | 1700 | 24 | 15 | 1 | | |
| MMBZ5228B | 8C | | 20 | 3.9 | 1900 | 23 | 10 | 1 | | |
| MMBZ5229B | 8D | | 20 | 4.3 | 2000 | 22 | 5 | 1 | | |
| MMBZ5230B | 8E | | 20 | 4.7 | 1900 | 19 | 5 | 2 | | |
| MMBZ5231B | 8F | | 20 | 5.1 | 1600 | 17 | 5 | 2 | | |
| MMBZ5232B | 8G | | 20 | 5.6 | 1600 | 11 | 5 | 3 | | |
| MMBZ5233B | 8H | | 20 | 6 | 1600 | 7 | 5 | 3.5 | | |
| MMBZ5234B | 8J | | 20 | 6.2 | 1000 | 7 | 5 | 4.5 | | |
| MMBZ5235B | 8K | | 20 | 6.8 | 750 | 5 | 3 | | | |
| MMBZ5236B | 8L | | 20 | 7.5 | 500 | 6 | 3 | 6 | | |
| MMBZ5237B | 8M | | 20 | 8.2 | 500 | 8 | 3 | 6.5 | | |
| MMBZ5238B | 8N | | 20 | 8.7 | 600 | 8 | 3 | 6.5 | | |
| MMBZ5239B | 8P | | 20 | 9.1 | 600 | 10 | 3 | 7 | | |
| MMBZ5240B | 8Q | | 20 | 10 | 600 | 17 | 3 | 8 | | |
| MMBZ5241B | 8R | | 20 | 11 | 600 | 22 | 2 | 8.4 | | |
| MMBZ5242B | 8S | | 20 | 12 | 600 | 30 | 1 | 9.1 | | |
| MMBZ5243B | 8T | | 9.5 | 13 | 600 | 13 | 0.5 | 9.9 | | |
| MMBZ5244B | 8U | | 9 | 14 | 600 | 15 | 0.1 | 10 | | |
| MMBZ5245B | 8V | | 8.5 | 15 | 600 | 16 | 0.1 | 11 | | |
| MMBZ5246B | 8W | | 7.8 | 16 | 600 | 17 | 0.1 | 12 | | |
| MMBZ5247B | 8X | | 7.4 | 17 | 600 | 19 | 0.1 | 13 | | |
| MMBZ5248B | 8Y | | 7 | 18 | 600 | 21 | 0.1 | 14 | | |
| MMBZ5249B | 8Z | | 6.6 | 19 | 600 | 23 | 0.1 | 14 | | |
| MMBZ5250B | 81A | | 6.2 | 20 | 600 | 25 | 0.1 | 15 | | |
| MMBZ5251B | 81B | | 5.6 | 22 | 600 | 29 | 0.1 | 17 | | |
| MMBZ5252B | 81C | | 5.2 | 24 | 600 | 33 | 0.1 | 18 | | |

Note) * : Zener Voltage is measured with a pulse test current (I_{ZT}) applied at an ambient temperature of 25°C, ※ : Package mounted on 99.5% alumina 10×8×0.6mm

| Type No. | Maker | KEC | Type No. | Maker | KEC | Type No. | Maker | KEC | Type No. | Maker | KEC |
|----------|------------|----------|----------|------------|-----------|----------|------------|---------|----------|------------|---------|
| RT1N241S | Mitsubishi | KRC103M | UMA4N | Rohm | KRA561U | UN211F | Matsushita | KRA119S | UN2215 | Matsushita | KRC111S |
| RT1N430C | Mitsubishi | KRC110S | UMA5N | Rohm | KRA555U | UN211H | Matsushita | KRA118S | UN2216 | Matsushita | KRC110S |
| RT1N430S | Mitsubishi | KRC110M | UMA6N | Rohm | KRA564U | UN211L | Matsushita | KRA101S | UN2217 | Matsushita | KRC113S |
| RT1N441C | Mitsubishi | KRC104S | UMA7N | Rohm | KRA569U | UN211M | Matsushita | KRA105S | UN2221 | Matsushita | KRC242S |
| RT1N441S | Mitsubishi | KRC104M | UMA8N | Rohm | KRA557U | UN211N | Matsushita | KRA106S | UN2222 | Matsushita | KRC243S |
| RT1P140C | Mitsubishi | KRA111S | UMA9N | Rohm | KRA552U | UN221E | Matsushita | KRC109S | UN2223 | Matsushita | KRC244S |
| RT1P140S | Mitsubishi | KRA111M | UMA10N | Rohm | KRA566U | UN221F | Matsushita | KRC119S | UN2224 | Matsushita | KRC246S |
| RT1P141C | Mitsubishi | KRA102S | UMA11N | Rohm | KRA556U | UN221H | Matsushita | KRC118S | UN4110 | Matsushita | KRA114M |
| RT1P141S | Mitsubishi | KRA102M | UMB1N | Rohm | KRA753U | UN221L | Matsushita | KRC101S | UN4111 | Matsushita | KRA102M |
| RT1P144C | Mitsubishi | KRA107S | UMB2N | Rohm | KRA754U | UN221M | Matsushita | KRC105S | UN4112 | Matsushita | KRA103M |
| RT1P144S | Mitsubishi | KRA107M | UMB3N | Rohm | KRA760U | UN221N | Matsushita | KRC106S | UN4113 | Matsushita | KRA104M |
| RT1P241C | Mitsubishi | KRA103S | UMB4N | Rohm | KRA761U | UN411E | Matsushita | KRA109M | UN4114 | Matsushita | KRA107M |
| RT1P241S | Mitsubishi | KRA103M | UMB9N | Rohm | KRA757U | UN411L | Matsushita | KRA101M | UN4115 | Matsushita | KRA111M |
| RT1P430C | Mitsubishi | KRA110S | UMB10N | Rohm | KRA755U | UN421E | Matsushita | KRC109M | UN4116 | Matsushita | KRA110M |
| RT1P430S | Mitsubishi | KRA110M | UMB11N | Rohm | KRA752U | UN421F | Matsushita | KRC119M | UN4117 | Matsushita | KRA113M |
| RT1P441S | Mitsubishi | KRA104M | UMC1N | Rohm | KRX105U | UN421H | Matsushita | KRC118M | UN4117 | Matsushita | KRA113M |
| S2Z79 | Toshiba | KTA1536T | UMC2N | Rohm | KRX103U | UN421L | Matsushita | KRC101M | UN4121 | Matsushita | KRA222M |
| S3C92 | Toshiba | KTC3532T | UMC3N | Rohm | KRX101U | UN421M | Matsushita | KRC105M | UN4122 | Matsushita | KRA223M |
| SSTA64 | Rohm | MMBTA64 | UMC4N | Rohm | KRX102U | UN421N | Matsushita | KRC106M | UN4123 | Matsushita | KRA224M |
| TIP31C | Mospec | TIP31C | UMC5N | Rohm | KRX104U | UN511E | Matsushita | KRA309 | UN4124 | Matsushita | KRA226M |
| TIP31C | Motorola | TIP31C | UMG1N | Rohm | KRC653U | UN511F | Matsushita | KRA319 | UN4210 | Matsushita | KRC214M |
| TIP31C | SGS-T | TIP31C | UMG2N | Rohm | KRC654U | UN511H | Matsushita | KRA318 | UN4211 | Matsushita | KRC102M |
| TIP32C | Mospec | TIP32C | UMG3N | Rohm | KRC660U | UN511L | Matsushita | KRA301 | UN4212 | Matsushita | KRC103M |
| TIP32C | Motorola | TIP32C | UMG4N | Rohm | KRC661U | UN511M | Matsushita | KRA305 | UN4213 | Matsushita | KRC104M |
| TIP32C | SGS-T | TIP32C | UMG5N | Rohm | KRC657U | UN511N | Matsushita | KRA306 | UN4214 | Matsushita | KRC107M |
| TIP33C | SGS-T | TIP33C | UMG6N | Rohm | KRC664U | UN511T | Matsushita | KRA308 | UN4215 | Matsushita | KRC111M |
| TIP33C | Motorola | TIP33C | UMG8N | Rohm | KRC669U | UN521E | Matsushita | KRC409 | UN4216 | Matsushita | KRC110M |
| TIP34C | SGS-T | TIP34C | UMG9N | Rohm | KRC652U | UN521F | Matsushita | KRC419 | UN4217 | Matsushita | KRC113M |
| TIP34C | Motorola | TIP34C | UMG10N | Rohm | KRC666U | UN521H | Matsushita | KRC418 | UN4221 | Matsushita | KRA242M |
| TIP35C | Mospec | TIP35C | UMG11N | Rohm | KRC655U | UN521L | Matsushita | KRC401 | UN4222 | Matsushita | KRA243M |
| TIP35C | Motorola | TIP35C | UMH1N | Rohm | KRC853U | UN521M | Matsushita | KRC405 | UN4223 | Matsushita | KRA244M |
| TIP35C | SGS-T | TIP35C | UMH2N | Rohm | KRC854U | UN521N | Matsushita | KRC406 | UN4224 | Matsushita | KRA246M |
| TIP36C | Mospec | TIP36C | UMH3N | Rohm | KRC860U | UN521T | Matsushita | KRC408 | UN5110 | Matsushita | KRA314 |
| TIP36C | Motorola | TIP36C | UMH4N | Rohm | KRC861U | UN2110 | Matsushita | KRA114S | UN5111 | Matsushita | KRA302 |
| TIP36C | SGS-T | TIP36C | UMH9N | Rohm | KRC857U | UN2111 | Matsushita | KRA102S | UN5112 | Matsushita | KRA303 |
| TIP41C | Mospec | TIP41C | UMH10N | Rohm | KRC855U | UN2112 | Matsushita | KRA103S | UN5113 | Matsushita | KRA304 |
| TIP41C | Motorola | TIP41C | UMH11N | Rohm | KRC852U | UN2113 | Matsushita | KRA104S | UN5114 | Matsushita | KRA307 |
| TIP41C | SGS-T | TIP41C | UML1N | Rohm | KTX301U | UN2114 | Matsushita | KRA107S | UN5115 | Matsushita | KRA311 |
| TIP42C | Mospec | TIP42C | UML2N | Rohm | KTX401U | UN2115 | Matsushita | KRA111S | UN5116 | Matsushita | KRA310 |
| TIP42C | Motorola | TIP42C | UMS1N | Rohm | KTA501U | UN2116 | Matsushita | KRA110S | UN5117 | Matsushita | KRA313 |
| TIP42C | SGS-T | TIP42C | UMT1N | Rohm | KTA701U | UN2117 | Matsushita | KRA113S | UN5210 | Matsushita | KRC414 |
| TIP112 | SGS-T | TIP112 | UMT2222A | Rohm | KTN2222AU | UN2121 | Matsushita | KRA222S | UN5211 | Matsushita | KRC402 |
| TIP112 | Motorola | TIP112 | UMT2907A | Rohm | KTN2907AU | UN2122 | Matsushita | KRA223S | UN5212 | Matsushita | KRC403 |
| TIP117 | SGS-T | TIP117 | UMT3904 | Rohm | 2N3904U | UN2123 | Matsushita | KRA224S | UN5213 | Matsushita | KRC404 |
| TIP117 | Motorola | TIP117 | UMT3906 | Rohm | 2N3906U | UN2124 | Matsushita | KRA226S | UN5214 | Matsushita | KRC407 |
| TIP122 | Motorola | TIP122 | UMW1N | Rohm | KTC601U | UN2210 | Matsushita | KRC114S | UN5215 | Matsushita | KRC411 |
| TIP127 | Motorola | TIP127 | UMX1N | Rohm | KTC801U | UN2211 | Matsushita | KRC102S | UN5216 | Matsushita | KRC410 |
| UMAIN | Rohm | KRA553U | UMY1N | Rohm | KTX201U | UN2212 | Matsushita | KRC103S | UN5217 | Matsushita | KRC413 |
| UMA2N | Rohm | KRA554U | UMZ1N | Rohm | KTX101U | UN2213 | Matsushita | KRC104S | | | |
| UMA3N | Rohm | KRA560U | UN211E | Matsushita | KRA109S | UN2214 | Matsushita | KRC107S | | | |

Small Signal Switching Diodes


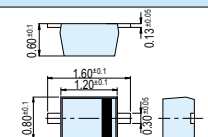

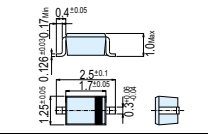

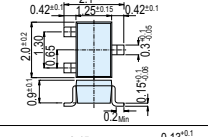

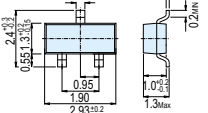
| Type No. | | | Max. Ratings | | | | | | VF (V) | | VF2 (V) | | VF3 (V) | | Ir (μ A) | | Ct (pF) | | | trr (ns) | | Package | Outline (Unit: mm) | |
|----------|--|----|--------------|--------|----------|---------|----------|---------|--------|---------|---------|---------|---------|------|---------------|------|---------|------|--------|----------|------|---------|--------------------|---------|
| | | | VRM (V) | VR (V) | IFM (mA) | Io (mA) | IFSM (A) | Pd (mW) | Typ. | IF (mA) | Typ. | IF (mA) | Typ. | Max. | IF (mA) | Max. | VR (V) | Max. | VR (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 | 10 | ESC | |
| KDS135 | | JA | 300 | 250 | 300 | 100 | 2 | - | 1.0 | 100 | - | - | - | - | 0.2 | 250 | 1.4 | 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 | |
| KDS120V | | A3 | 85 | 80 | 300 | 100 | 2 | 100 | 0.61 | 1 | 0.74 | 10 | 0.92 | 1.2 | 100 | 0.5 | 80 | 2.2 | 0 | 1 | 1.6 | 10 | VSM | |
| KDS121V | | B3 | 85 | 80 | 300 | 100 | 2 | 100 | 0.6 | 1 | 0.72 | 10 | 0.9 | 1.2 | 100 | 0.5 | 80 | 0.9 | 0 | 1 | 1.6 | 10 | VSM | |
| KDS120E | | A3 | 85 | 80 | 300 | 100 | 2 | 100 | 0.61 | 1 | 0.74 | 10 | 0.92 | 1.2 | 100 | 0.5 | 80 | 2.2 | 0 | 1 | 1.6 | 10 | ESM | |
| KDS121E | | B3 | 85 | 80 | 300 | 100 | 2 | 100 | 0.6 | 1 | 0.72 | 10 | 0.9 | 1.2 | 100 | 0.5 | 80 | 0.9 | 0 | 1 | 1.6 | 10 | ESM | |
| KDS120 | | A3 | 85 | 80 | 300 | 100 | 2 | 100 | 0.61 | 1 | 0.74 | 10 | 0.92 | 1.2 | 100 | 0.5 | 80 | 2.2 | 0 | 1 | 1.6 | 10 | USM | |
| KDS121 | | B3 | 85 | 80 | 300 | 100 | 2 | 100 | 0.6 | 1 | 0.72 | 10 | 0.9 | 1.2 | 100 | 0.5 | 80 | 0.9 | 0 | 1 | 1.6 | 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 | - | 1.0 | 100 | - | - | - | - | 0.2 | 250 | 1.4 | 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |

Note) \diamond : Typ.


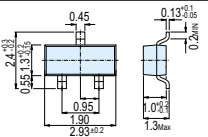
Small Signal Band Switch Diodes

| Type No. | | | Max Ratings | | VF (V) | | Ir (μ A) | | VR (V) | | Ct (pF) | | rs (Ω) | | | | Package | Outline (Unit: mm) | | |
|----------|--|----|-------------|---------|--------|---------|---------------|--------|--------|---------------|---------|------|-----------------|---------|------|------|---------|--------------------|---------|---------|
| | | | VR (V) | IF (mA) | Max. | IF (mA) | Max. | VR (V) | Min. | Ir (μ A) | Typ. | Max. | VR (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 | 2 | 100 | ESC | |
| 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 | | |
| KDS115 | | R3 | 30 | 50 | 0.85 | 2 | 0.1 | 15 | 30 | 1 | 0.8 | 1.2 | 6 | 1 | 0.6 | 0.9 | 2 | 100 | | |

■ VHF/UHF Band Attenuator Diodes


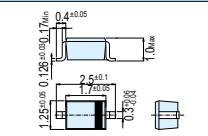

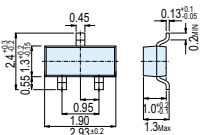



| Type No. | Mark | Max. Ratings | | V _F (V) | | V _R (V) | | C _T (pF) | | | r _s (Ω) | | | Package | Outline (Unit: mm) |
|----------|--|--------------------|---------------------|--------------------|---------------------|--------------------|---------------------|---------------------|--------------------|--------|--------------------|---------------------|--------|---------|---|
| | | V _R (V) | I _F (mA) | Typ. | I _F (mA) | Min. | I _R (μA) | Typ. | V _R (V) | f(MHz) | Typ. | I _F (mA) | f(MHz) | | |
| KDV175E |  UE | 50 | 50 | 0.95 | 50 | 50 | 10 | 0.25 | 50 | 1 | 7 | 10 | 100 | ESC |  |
| 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 |  |

■ AFC Application for FM (Varactor Diodes)


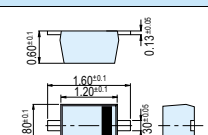


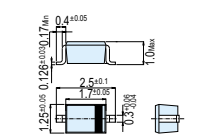


| Type No. | Mark | Max. Ratings | C _T (pF) | | | | K★ | | Q | | Package | Outline (Unit: mm) | | |
|----------|---|--------------|---------------------|----|--------------------|--------|------|------|------|------|---------|--------------------|--------------------|--|
| | | | V _R (V) | | V _R (V)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

Note) ★ : K = [C_T(V_R=2V, f=1MHz) - C_T(V_R=4V, f=1MHz)] / C_T(V_R=4V, f=1MHz)

■ FM Tuning (Varactor Diodes)

| Type No. | Mark | Max. Ratings | V _R (V) | | C _A (pF) | | C _B (pF) | | C _A /C _B | | r _s (Ω) | | | Package | Outline (Unit: mm : Max.) | | | | | | |
|----------|--|--------------|--------------------|---------------------|---------------------|-------|---------------------|--------|--------------------------------|------|--------------------|------|--------------------|---------|---------------------------|--------|-------|-----|----|--------|---|
| | | | V _R (V) | I _R (μA) | Min. | Max. | V _R (V) | f(MHz) | Min. | Max. | Typ. | Max. | V _R (V) | | | f(MHz) | C(pF) | | | | |
| 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 |  |
| KDV1430 |  L3 | 16 | 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 | 32.65 | 37.87 | 1 | 1 | - | - | 5 | 1 | 5 | - | 0.8 | 1 | 1.5 | 100 | - | | |

■ TV Tuning (Varactor Diodes)

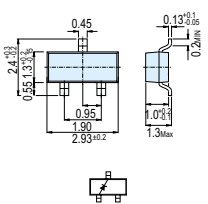
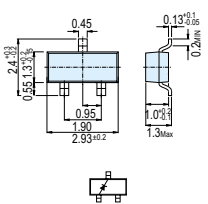
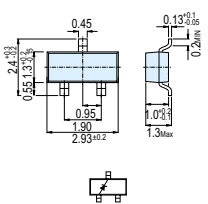
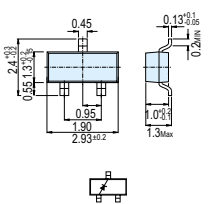
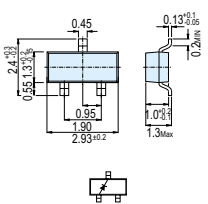
| Type No. | Mark | Max. Ratings | V _R (V) | | C _A (pF) | | C _B (pF) | | C _A /C _B | | r _s (Ω) | | | Package | Outline (Unit: mm : Max.) | | | | | | |
|----------|--|--------------|--------------------|---------------------|---------------------|-------|---------------------|--------|--------------------------------|------|--------------------|------|--------------------|---------|---------------------------|--------|-------|-----|---|-----|---|
| | | | V _R (V) | I _R (μA) | Min. | Max. | V _R (V) | f(MHz) | Min. | Max. | Typ. | Max. | V _R (V) | | | f(MHz) | C(pF) | | | | |
| KDV214E |  UO | 30 | 30 | 1 | 14.16 | 16.25 | 2 | 1 | 2.11 | 2.43 | 25 | 1 | 5.9 | 7.15 | 0.4 | 0.55 | 5 | 470 | - | ESC |  |
| KDV262E |  VQ | 34 | 34 | 1 | 33 | 38 | 2 | 1 | 2.6 | 3 | 25 | 1 | 12 | - | 0.6 | 0.8 | 5 | 470 | - | | |
| KDV214 |  UO | 30 | 30 | 1 | 14.16 | 16.25 | 2 | 1 | 2.11 | 2.43 | 25 | 1 | 5.9 | 7.15 | 0.4 | 0.55 | 5 | 470 | - | USC |  |
| KDV262 |  VQ | 34 | 34 | 1 | 33 | 38 | 2 | 1 | 2.6 | 3 | 25 | 1 | 12 | - | 0.6 | 0.8 | 5 | 470 | - | | |
| KDV269 |  VR | 34 | 34 | 1 | 29 | 34 | 2 | 1 | 2.5 | 2.9 | 25 | 1 | 11 | - | 0.55 | 0.7 | 5 | 470 | - | | |

■ 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) | | | |
| Z02W2.0V | - | 2A | 200 | 1.85 | 2.15 | 5 | 100 | 5 | 1000 | 0.5 | 120 | 1 | | |
| | 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 | | | |
| Z02W4.7V | - | 47 | 4.25 | 4.5 | 5 | 130 | 5 | 1000 | 0.5 | 5 | 1 | | | |
| | X | 47X | 4.4 | 4.9 | 5 | 120 | 5 | 1000 | 0.5 | 5 | 1 | | | |
| | Y | 47Y | 4.4 | 4.63 | 5 | 120 | 5 | 1000 | 0.5 | 5 | 1 | | | |
| Z02W5.1V | - | 51 | 4.53 | 4.76 | 5 | 120 | 5 | 1000 | 0.5 | 5 | 1 | | | |
| | X | 51X | 4.66 | 4.9 | 5 | 120 | 5 | 1000 | 0.5 | 5 | 1 | | | |
| | Y | 51Y | 4.8 | 5.4 | 5 | 70 | 5 | 1000 | 0.5 | 1 | 1.5 | | | |
| Z02W5.6V | - | 56 | 4.8 | 5.07 | 5 | 70 | 5 | 1000 | 0.5 | 1 | 1.5 | | | |
| | X | 56X | 4.97 | 5.24 | 5 | 70 | 5 | 1000 | 0.5 | 1 | 1.5 | | | |
| | Y | 56Y | 5.14 | 5.4 | 5 | 70 | 5 | 1000 | 0.5 | 1 | 1.5 | | | |
| Z02W6.2V | - | 62 | 5.3 | 6 | 5 | 40 | 5 | 900 | 0.5 | 1 | 2.5 | | | |
| | X | 62X | 5.3 | 5.63 | 5 | 40 | 5 | 900 | 0.5 | 1 | 2.5 | | | |
| | Y | 62Y | 5.43 | 5.81 | 5 | 40 | 5 | 900 | 0.5 | 1 | 2.5 | | | |
| Z02W6.8V | - | 68 | 5.61 | 6 | 5 | 40 | 5 | 900 | 0.5 | 1 | 2.5 | | | |
| | X | 68X | 5.8 | 6.6 | 5 | 30 | 5 | 500 | 0.5 | 1 | 3 | | | |
| | Y | 68Y | 5.8 | 6.2 | 5 | 30 | 5 | 500 | 0.5 | 1 | 3 | | | |
| Z02W7.5V | - | 75 | 6 | 6.39 | 5 | 30 | 5 | 500 | 0.5 | 1 | 3 | | | |
| | X | 75X | 6.19 | 6.6 | 5 | 30 | 5 | 500 | 0.5 | 1 | 3 | | | |
| | Y | 75Y | 6.4 | 7.2 | 5 | 25 | 5 | 150 | 0.5 | 0.5 | 5 | | | |
| Z02W8.2V | - | 82 | 6.4 | 6.8 | 5 | 25 | 5 | 150 | 0.5 | 0.5 | 5 | | | |
| | X | 82X | 6.6 | 7.02 | 5 | 25 | 5 | 150 | 0.5 | 0.5 | 5 | | | |
| | Y | 82Y | 6.82 | 7.2 | 5 | 25 | 5 | 150 | 0.5 | 0.5 | 5 | | | |
| Z02W9.1V | - | 91 | 7 | 7.9 | 5 | 23 | 5 | 120 | 0.5 | 0.5 | 6 | | | |
| | X | 91X | 7 | 7.43 | 5 | 23 | 5 | 120 | 0.5 | 0.5 | 6 | | | |
| | Y | 91Y | 7.23 | 7.66 | 5 | 23 | 5 | 120 | 0.5 | 0.5 | 6 | | | |
| Z02W10V | - | 10 | 7.46 | 7.9 | 5 | 23 | 5 | 120 | 0.5 | 0.5 | 6 | | | |
| | X | 10X | 7.7 | 8.7 | 5 | 20 | 5 | 120 | 0.5 | 0.5 | 6.5 | | | |
| | Y | 10Y | 7.7 | 8.16 | 5 | 20 | 5 | 120 | 0.5 | 0.5 | 6.5 | | | |
| Z02W11V | - | 11 | 7.96 | 8.43 | 5 | 20 | 5 | 120 | 0.5 | 0.5 | 6.5 | | | |
| | X | 11X | 8.23 | 8.7 | 5 | 20 | 5 | 120 | 0.5 | 0.5 | 6.5 | | | |
| | Y | 11Y | 8.5 | 9.6 | 5 | 18 | 5 | 120 | 0.5 | 0.5 | 7 | | | |
| Z02W12V | - | 12 | 8.5 | 9 | 5 | 18 | 5 | 120 | 0.5 | 0.5 | 7 | | | |
| | X | 12X | 8.8 | 9.3 | 5 | 18 | 5 | 120 | 0.5 | 0.5 | 7 | | | |
| | Y | 12Y | 9.1 | 9.6 | 5 | 18 | 5 | 120 | 0.5 | 0.5 | 7 | | | |
| Z02W13V | - | 13 | 9.4 | 10.6 | 5 | 15 | 5 | 120 | 0.5 | 0.5 | 8 | | | |
| | X | 13X | 9.4 | 9.93 | 5 | 15 | 5 | 120 | 0.5 | 0.5 | 8 | | | |
| | Y | 13Y | 9.73 | 10.26 | 5 | 15 | 5 | 120 | 0.5 | 0.5 | 8 | | | |
| Z02W13V | - | 13 | 10.06 | 10.6 | 5 | 15 | 5 | 120 | 0.5 | 0.5 | 8 | | | |
| | X | 13X | 10.4 | 11.6 | 5 | 15 | 5 | 120 | 0.5 | 0.5 | 8.5 | | | |
| | Y | 13Y | 10.4 | 10.98 | 5 | 15 | 5 | 120 | 0.5 | 0.5 | 8.5 | | | |
| Z02W13V | - | 13 | 10.73 | 11.26 | 5 | 15 | 5 | 120 | 0.5 | 0.5 | 8.5 | | | |
| | X | 13X | 11.06 | 11.6 | 5 | 15 | 5 | 120 | 0.5 | 0.5 | 8.5 | | | |
| | Y | 13Y | 11.4 | 12.6 | 5 | 15 | 5 | 110 | 0.5 | 0.5 | 9 | | | |
| Z02W13V | - | 13 | 11.4 | 11.93 | 5 | 15 | 5 | 110 | 0.5 | 0.5 | 9 | | | |
| | X | 13X | 11.73 | 12.26 | 5 | 15 | 5 | 110 | 0.5 | 0.5 | 9 | | | |
| | Y | 13Y | 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 | | | |
| Z02W13V | - | 13 | 13.37 | 14.1 | 5 | 15 | 5 | 110 | 0.5 | 0.5 | 10 | | | |

Diodes

■ 200mW Zener Diodes

| Type No. | | Max. Ratings | | Vz (V) | | | Zz (Ω) | | Zzk (Ω) | | Ir (μA) | | Package | Outline (Unit: mm) | | |
|----------|------|--------------|-------|--------|---------|------|---------|------|---------|------|---------|---|---|---|---|---|
| Grade | Mark | Pd (mW) | Min. | Max. | Iz (mA) | Max. | Iz (mA) | Max. | Iz (mA) | Max. | Vr (V) | | | | | |
| | | | | | | | | | | | | Z02W15V | - | 15 | 13.8 | 15.6 |
| 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 | SOT-23  | | | | |
| | 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 | | SOT-23  | | | |
| | 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 | | | SOT-23  | | |
| | 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 | | | | SOT-23  | |
| | 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 | | | | | SOT-23  |
| | 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 Zener Diodes

| Type No. | | Pd(MAX) (mW) ※ | Test Current IzT(mA) | Zener Voltage Vz(±5%) Nominal * | Zzk Iz=0.25mA ΩMax | ZzT Iz=IzT @10%Mod ΩMax | Max Ir(μA) | | Package | Outline (Unit: mm) |
|-----------|-------|-------------------|-------------------------|--|--------------------------|----------------------------------|---------------|-----|---------|--------------------|
| Mark | Vr(V) | | | | | | | | | |
| | | MMBZ5221B | 18A | 300 | 20 | 2.4 | 1200 | 30 | 100 | 1 |
| MMBZ5222B | 18B | 20 | 2.5 | | 1250 | 30 | 100 | 1 | | |
| MMBZ5223B | 18C | 20 | 2.7 | | 1300 | 30 | 75 | 1 | | |
| MMBZ5224B | 18D | 20 | 2.8 | | 1400 | 30 | 75 | 1 | | |
| MMBZ5225B | 18E | 20 | 3 | | 1600 | 29 | 50 | 1 | | |
| MMBZ5226B | 8A | 20 | 3.3 | | 1600 | 28 | 25 | 1 | | |
| MMBZ5227B | 8B | 20 | 3.6 | | 1700 | 24 | 15 | 1 | | |
| MMBZ5228B | 8C | 20 | 3.9 | | 1900 | 23 | 10 | 1 | | |
| MMBZ5229B | 8D | 20 | 4.3 | | 2000 | 22 | 5 | 1 | | |
| MMBZ5230B | 8E | 20 | 4.7 | | 1900 | 19 | 5 | 2 | | |
| MMBZ5231B | 8F | 20 | 5.1 | | 1600 | 17 | 5 | 2 | | |
| MMBZ5232B | 8G | 20 | 5.6 | | 1600 | 11 | 5 | 3 | | |
| MMBZ5233B | 8H | 20 | 6 | | 1600 | 7 | 5 | 3.5 | | |
| MMBZ5234B | 8J | 20 | 6.2 | | 1000 | 7 | 5 | 4.5 | | |
| MMBZ5235B | 8K | 20 | 6.8 | | 750 | 5 | 3 | | | |
| MMBZ5236B | 8L | 20 | 7.5 | | 500 | 6 | 3 | 6 | | |
| MMBZ5237B | 8M | 20 | 8.2 | | 500 | 8 | 3 | 6.5 | | |
| MMBZ5238B | 8N | 20 | 8.7 | | 600 | 8 | 3 | 6.5 | | |
| MMBZ5239B | 8P | 20 | 9.1 | | 600 | 10 | 3 | 7 | | |
| MMBZ5240B | 8Q | 20 | 10 | | 600 | 17 | 3 | 8 | | |
| MMBZ5241B | 8R | 20 | 11 | | 600 | 22 | 2 | 8.4 | | |
| MMBZ5242B | 8S | 20 | 12 | | 600 | 30 | 1 | 9.1 | | |
| MMBZ5243B | 8T | 9.5 | 13 | | 600 | 13 | 0.5 | 9.9 | | |
| MMBZ5244B | 8U | 9 | 14 | | 600 | 15 | 0.1 | 10 | | |
| MMBZ5245B | 8V | 8.5 | 15 | | 600 | 16 | 0.1 | 11 | | |
| MMBZ5246B | 8W | 7.8 | 16 | | 600 | 17 | 0.1 | 12 | | |
| MMBZ5247B | 8X | 7.4 | 17 | | 600 | 19 | 0.1 | 13 | | |
| MMBZ5248B | 8Y | 7 | 18 | | 600 | 21 | 0.1 | 14 | | |
| MMBZ5249B | 8Z | 6.6 | 19 | | 600 | 23 | 0.1 | 14 | | |
| MMBZ5250B | 81A | 6.2 | 20 | | 600 | 25 | 0.1 | 15 | | |
| MMBZ5251B | 81B | 5.6 | 22 | | 600 | 29 | 0.1 | 17 | | |
| MMBZ5252B | 81C | 5.2 | 24 | | 600 | 33 | 0.1 | 18 | | |

Note) *: Zener Voltage is measured with a pulse test current (IzT) applied at an ambient temperature of 25°C, ※ : Package mounted on 99.5% alumina 10×8×0.6mm

■ 5W Zener Diodes(Surge Absorber)


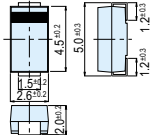





| Type No. | Max. Ratings | | Vz (V) | | | Zz(Ω) | | Ir(μA) | | Package | Outline (Unit: mm) |
|----------|--------------|------|--------|---------|------|---------|------|--------|---|---------|--------------------|
| | Pd (W) | Min. | Max. | Iz (mA) | Max. | Iz (mA) | Max. | Vr (V) | | | |
| Z5W27V | | | | | | | | | 5 | 24 | 30 |

Small Signal Schottky Barrier Diodes

| Type No. | Mark | Max. Ratings | | | | | | VF (V) | | IR (μA) | | CT (pF) | | | Package | Outline (Unit: mm) |
|----------|------|--------------|--------|----------|---------|----------|---------|--------|--------|---------|-------|---------|--------|--------|---------|--------------------|
| | | VRM (V) | VR (V) | IFM (mA) | IO (mA) | IFSM (A) | PD (mW) | Max. | IF(mA) | Max. | VR(V) | Typ. | VR (V) | f(MHz) | | |
| 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 | |
| KDR728E | | UT | 30 | 30 | 150 | 30 | 0.2 | 150☆ | 0.55 | 30 | 300 | 30 | 6.5 | 1 | 1 | |
| KDR357 | | UL | 40 | 45 | 200 | 100 | 1 | 200☆ | 0.55 | 100 | 5 | 10 | 30 | 0 | 1 | |
| 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 | - | 0.5 | 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☆ | - | 100 | 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 | |
| KDR732V | | UZ | 35 | 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 | |
| KDR378E | | X3 | 15 | 10 | - | 100 | 1 | 100 | 0.5 | 100 | 20 | 10 | 15 | 0 | 1 | |
| KDR732E | | UZ | 35 | 30 | - | 70 | 2 | - | 0.55 | 70 | 5 | 15 | 3 | 10 | 1 | |
| KDR105 | | DL | 50 | 50 | - | 100 | 2 | - | 0.55 | 100 | 10 | 25 | 7.7 | 10 | 1 | |
| 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 | 15 | 10 | - | 100 | 1 | 100 | 0.5 | 100 | 20 | 10 | 15 | 0 | 1 | |
| KDR393 | | R9 | 40 | 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 | 35 | 30 | - | 70 | 2 | - | 0.55 | 70 | 5 | 15 | 5 | 10 | 1 | |
| KDR732 | UZ | 35 | 30 | - | 70 | 2 | - | 0.55 | 70 | 5 | 15 | 3 | 10 | 1 | | |
| KDR511T | | T1 | 15 | 15 | - | 1A | 10A | 900▲ | 0.35 | 500 | 500 | 10 | 42 | 10 | 1 | |
| KDR521T | | T2 | 25 | 20 | - | 1A | 3A | 900▲ | - | - | 200 | 20 | - | - | - | |
| KDR105S | | DL | 50 | 50 | - | 100 | 2 | - | 0.55 | 100 | 10 | 25 | 7.7 | 10 | 1 | |
| KDR393S | | R9 | 40 | 40 | - | 100 | 1 | - | 0.6 | 100 | 5 | 10 | 20 | 0 | 1 | |
| KDR400S | | DJ | 40 | 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 | 50 | - | 500 | 5 | - | 0.55 | 500 | 20 | 25 | 22 | 10 | 1 | |
| KDR701S | | DK | 30 | 30 | - | 700 | 5 | - | 0.55 | 700 | 80 | 30 | 190 | 0 | 1 | |
| KDR721S | | MF | 30 | 30 | - | 200 | 1 | - | 0.55 | 200 | 50 | 30 | 13 | 10 | 1 | |
| KDR731S | | UX | 35 | 30 | - | 70 | 2 | - | 0.55 | 70 | 5 | 15 | 5 | 10 | 1 | |


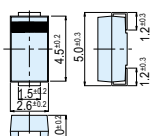





Note) ☆ : Mounted on a glass epoxy circuit board of 20×20mm, ▲ : Mounted on a ceramic Board (600mm²×0.8mm)

■ Ultra Fast Recovery Diodes

| Type No. | Mark | Max. Ratings | | | V _{FM} (V) | | I _R (μA) | | trr (ns) | | | Package | Outline (Unit: mm) |
|----------|---|----------------------|--------------------|-----------------------------|---------------------|--------------------|---------------------|----------------------------------|----------|--------------------|--------------------|---------|---|
| | | V _{RRM} (V) | I _O (A) | I _{FSM} (A) (60Hz) | Max. | I _F (A) | Max. | V _R (V) | Max. | I _F (A) | I _R (A) | | |
| * SMAU1D |  UID | 200 | 1 | 33 | 0.98 | 1 | 10 | V _R =V _{RRM} | 50 | 0.5 | 1 | SMA |  |
| * SMAU2D |  U2D | 200 | 2 | 55 | 0.98 | 2 | 10 | V _R =V _{RRM} | 50 | 0.5 | 1 | | |
| * SMAU1G |  U1G | 400 | 1 | 33 | 1.3 | 1 | 10 | V _R =V _{RRM} | 50 | 0.5 | 1 | | |
| * SMAU2G |  U2G | 400 | 2 | 55 | 1.3 | 2 | 10 | V _R =V _{RRM} | 50 | 0.5 | 1 | | |
| * SMAU1J |  U1J | 600 | 1 | 33 | 1.7 | 1 | 10 | V _R =V _{RRM} | 75 | 0.5 | 1 | | |
| * SMAU2J |  U2J | 600 | 2 | 55 | 1.7 | 2 | 10 | V _R =V _{RRM} | 75 | 0.5 | 1 | | |

Note) * : Under development

■ Power Schottky Barrier Diodes

| Type No. | Mark | Max. Ratings | | | V _{FM} (V) | | I _R (mA) | | Package | Outline (Unit: mm) |
|----------|---|----------------------|--------------------|-----------------------------|---------------------|--------------------|---------------------|----------------------------------|---------|---|
| | | V _{RRM} (V) | I _O (A) | I _{FSM} (A) (60Hz) | Max. | I _F (A) | Max. | V _R (V) | | |
| * SMAB13 |  B13 | 30 | 1 | 40 | 0.42 | 1 | 0.2 | V _R =V _{RRM} | SMA |  |
| * SMAB33 |  B33 | 30 | 3 | 70 | 0.42 | 3 | 0.2 | V _R =V _{RRM} | | |
| * SMAB14 |  B14 | 40 | 1 | 40 | 0.5 | 1 | 0.2 | V _R =V _{RRM} | | |
| * SMAB34 |  B34 | 40 | 3 | 70 | 0.5 | 3 | 0.2 | V _R =V _{RRM} | | |
| * SMAB16 |  B16 | 60 | 1 | 30 | 0.58 | 1 | 0.2 | V _R =V _{RRM} | | |
| * SMAB36 |  B36 | 60 | 3 | 70 | 0.58 | 1 | 0.2 | V _R =V _{RRM} | | |

Note) * : Under development

■ AFC Application for FM (Varactor Diodes)

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

Note) * :K=[C_T(V_R=2V,f=1 MHz)-C_T(V_R=4V,f=1 MHz) / C_T(V_R=4V,f=1 MHz)]

■ AM Tuning (Varactor Diodes)

| Type No. | Max. Ratings V _R (V) | V _R (V) | | C _{1v} (pF) | | C _{8v} (pF) | | C _{1v} /C _{8v} | | | Q | | Package | Outline (Unit: mm) | | | | | | |
|----------|------------------------------------|--------------------|---------------------|----------------------|------|----------------------|---------|----------------------------------|------|--------------------|---------|------|---------|--------------------|------|--------------------|---------|---|--------|--|
| | | Min. | I _R (μA) | Min. | Max. | V _R (V) | f (MHz) | Min. | Max. | V _R (V) | f (MHz) | Min. | | | Typ. | V _R (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 V _R (V) | V _R (V) | | C _A (pF) | | C _B (pF) | | C _A /C _B | | r _s (Ω) | | | Package | Outline (Unit: mm) | | | | | |
|----------|------------------------------------|--------------------|---------------------|---------------------|------|---------------------|---------|--------------------------------|------|--------------------|---------|------|---------|--------------------|------|------|------|---------|--------|
| | | Min. | I _R (μA) | Min. | Max. | V _R (V) | f (MHz) | Min. | Max. | V _R (V) | f (MHz) | Min. | | | Max. | Typ. | Max. | f (MHz) | C (pF) |
| 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 V _R (V) | V _R (V) | | C _A (pF) | | C _B (pF) | | C _A /C _B | | r _s (Ω) | | | Package | Outline (Unit: mm) | | | | | |
|----------|------------------------------------|--------------------|---------------------|---------------------|------|---------------------|---------|--------------------------------|------|--------------------|---------|------|---------|--------------------|------|------|------|---------|--------|
| | | Min. | I _R (μA) | Min. | Max. | V _R (V) | f (MHz) | Min. | Max. | V _R (V) | f (MHz) | Min. | | | Max. | Typ. | Max. | f (MHz) | C (pF) |
| KDV251M | 12 | 12 | 10 | 23 | 38 | 1.6 | 1 | 11 | 19 | 5 | 1 | 1.7 | 2.2 | 0.6 | 1 | 50 | 30 | TO-92M | |

■ Fast Recovery Diodes

| Type No. | Max. Ratings | | | | V _{FM} (V) | | trr (ns) | | | R _{th(j-c)} (°C/W) | Package | Outline (Unit: mm) |
|----------|----------------------|--------------------|-----------------------------|-----------------------------|---------------------|---------------------|----------|--------------------|--------------------|-----------------------------|----------|--------------------|
| | V _{RRM} (V) | I _O (A) | I _{FSM} (A) (50Hz) | I _{FSM} (A) (60Hz) | Max. | I _{FM} (A) | Max. | I _F (A) | I _R (A) | Max. | | |
| 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 | |
| F1B2CA | 200 | 10 | 60 | 70 | 1.4 | 5 | 400 | 0.1 | 0.1 | 3 | TO-220AB | |
| F1B2CC | 200 | 10 | 60 | 70 | 1.4 | 5 | 400 | 0.1 | 0.1 | 3 | TO-220AB | |

■ Ultra Fast Recovery Rectifier Diodes

| Type No. | Max. Ratings | | | | V _F (V) | | I _r (μA) | | trr (ns) | | | Package | Outline (Unit: mm) |
|------------|---------------------|--------------------|-----------------------------|-----------------------------|--------------------|--------------------|---------------------|---------------------------------|----------|---------------------|---------------------|----------|--------------------|
| | V _{RM} (V) | I _O (A) | I _{FSM} (A) (50Hz) | I _{FSM} (A) (60Hz) | Max. | I _F (A) | Max. | V _R (V) | Max. | I _F (mA) | I _R (mA) | | |
| * U5A2CI | 200 | 5 | 50 | 60 | 0.98 | 5 | 10 | V _R =V _{RM} | 50 | 100 | 100 | TO-220IS | |
| * U5A4CI | 400 | 5 | 50 | 60 | 1.3 | 5 | 10 | V _R =V _{RM} | 50 | 100 | 100 | TO-220IS | |
| * U5A2CIC | 200 | 5 | 25 | 30 | 0.98 | 2.5 | 10 | V _R =V _{RM} | 50 | 100 | 100 | TO-220IS | |
| * U10A2CIC | 200 | 10 | 50 | 60 | 0.98 | 5 | 10 | V _R =V _{RM} | 50 | 100 | 100 | TO-220IS | |
| * U5A4CIC | 400 | 5 | 25 | 30 | 1.3 | 2.5 | 10 | V _R =V _{RM} | 50 | 100 | 100 | TO-220IS | |
| * U10A4CIC | 400 | 10 | 50 | 60 | 1.3 | 5 | 10 | V _R =V _{RM} | 50 | 100 | 100 | TO-220IS | |

Note) * : Under development

Power Schottky Barrier Diodes

| Type No. | Max. Ratings | | | VFM(V) | | IRR(MmA) (VRRM=Rated) Max. | trr(ns) | | | Rth(c-f) (°C/W) Max. | Package | Outline (Unit: mm : Max.) |
|-----------|--------------|--------|----------|-----------------|---------|----------------------------------|---------|--------|-------------|----------------------------|----------|---------------------------|
| | VRRM (V) | IO (A) | IFSM (A) | Max. (Tc=25 °C) | IFM (A) | | Max. | IF (A) | di/dt(A/μs) | | | |
| 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 | | |
| B5A90VI | 90 | 5 | 100 | 0.75 | 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 | | |
| B10A90VIC | 90 | 10 | 100 | 0.75 | 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 | | |
| B30A45VIC | 45 | 30 | 350 | 0.6 | 15 | 3 | 35 | 1 | -50 | 2.5 | | |

Alternator Diodes

| Type No. | Polarity | Max. Ratings | | | | Package | Outline (Unit: mm : Max.) | |
|-------------|----------|--------------|-------|--------|-----------|---------|---------------------------|---|
| | | VR(V) | IO(A) | IFM(A) | Rth(°C/W) | | | $\Delta VF(mV)$ |
| E30A2CS | + | 200 | 30 | 350 | 1 | MR | | |
| E30A2CR | - | 200 | 30 | 350 | 1 | | | 100 |
| * E30A3CS | + | 300 | 30 | 450 | 1 | | | 90 |
| * E30A3CR | - | 300 | 30 | 450 | 1 | | | 90 |
| E30A23VS | + | 23 ±3 | 30 | 450 | 1 | | | 90 |
| E30A23VR | - | 23 ±3 | 30 | 450 | 1 | | | 90 |
| E35A2CS | + | 200 | 35 | 450 | 1 | | | 90 |
| E35A2CR | - | 200 | 35 | 450 | 1 | | | 90 |
| E25A2CPS | + | 200 | 25 | 250 | 0.93 | | | 150 |
| E25A2CPR | - | 200 | 25 | 250 | 0.93 | | | 150 |
| E30A2CPS | + | 200 | 30 | 350 | 0.86 | | | 140 |
| E30A2CPR | - | 200 | 30 | 350 | 0.86 | 140 | | |
| E30A23VPS | + | 23 ±2 | 30 | 500 | 0.8 | 120 | | |
| E30A23VPR | - | 23 ±2 | 30 | 500 | 0.8 | 120 | | |
| E30A37VPS | + | 37 ±3 | 30 | 350 | 0.86 | 140 | | |
| E30A37VPR | - | 37 ±3 | 30 | 350 | 0.86 | 140 | | |
| E30A27VS | + | 27 ±3 | 30 | 350 | 0.86 | 140 | | |
| E30A27VR | - | 27 ±3 | 30 | 350 | 0.86 | 140 | | |
| * E35A21VBS | + | 21 ±2 | 35 | 300 | 0.8 | - | B-Press-Fit | <p>M: Positive: 20.5^{+0.5} Negative: 28.5^{+0.5}</p> |
| * E35A21VBR | - | 21 ±2 | 35 | 300 | 0.8 | - | | |
| * E35A27VBS | + | 27 ±3 | 35 | 300 | 0.8 | - | | |
| * E35A27VBR | - | 27 ±3 | 35 | 300 | 0.8 | - | | |
| * E50A21VBS | + | 21 ±2 | 50 | 380 | 0.6 | - | | |
| * E50A21VBR | - | 21 ±2 | 50 | 380 | 0.6 | - | | |
| * E50A27VBS | + | 27 ±3 | 50 | 380 | 0.6 | - | | |
| * E50A27VBR | - | 27 ±3 | 50 | 380 | 0.6 | - | | |
| E30A2CDS | + | 200 | 30 | 300 | 1 | PD | | |
| E30A2CDR | - | 200 | 30 | 300 | 1 | | | - |
| E35A2CDS | + | 200 | 35 | 350 | 1 | | | - |
| E35A2CDR | - | 200 | 35 | 350 | 1 | | | - |
| E35A23VDS | + | 23 ±2 | 35 | 350 | 1 | | | - |
| E35A23VDR | - | 23 ±2 | 35 | 350 | 1 | | | - |

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 |
|-----------------------------|------------|-----------|----------------------------|----------|-----------|----------------------------|-----------|-----------|-----------------------------|-----------|-----------|
| 10GWJ2CZ47C | Toshiba | B10A45VIC | ERC62M-004 | Fuji | B10A45VI | MBRA140LT3 | Motorola | SMAB14 | SFPJ-73 | Sanken | SMAB33 |
| 16GWJ2CZ47 | Toshiba | B15A45VIC | ESAD82-004 | Fuji | B15A45VIC | MBRF1045 | Motorola | B10A45VI | SPB-G34S | Sanken | SMAB34 |
| 5GWJZ47 | Toshiba | B5A45VI | F10P048 | IR | B10A45VIC | MBRF1545CT | Motorola | B15A45VIC | SS13 | Fairchild | SMAB13 |
| B130 | Liteon | SMAB13 | FMB-24H | Sanken | B15A45VIC | PBYR1045 | PHILIPS | B10A45VI | SS13 | GS | SMAB13 |
| B130B | Sanken | SMAB13 | FMB-24L | Sanken | B10A45VIC | PBYR1545CT | PHILIPS | B15A45VIC | SS14 | Fairchild | SMAB14 |
| B140 | Liteon | SMAB14 | FMB-36 | Sanken | B15A60VIC | RB053L-30 | Rohm | SMAB33 | SS14 | GS | SMAB14 |
| B140B | Liteon | SMAB14 | FMB-G14L | Sanken | B5A45VI | RB060L-40 | Rohm | SMAB34 | SS16 | Fairchild | SMAB16 |
| B160 | Liteon | SMAB16 | FMB-G24H | Sanken | B10A45VI | RB160L-40 | Rohm | SMAB14 | SS16 | GS | SMAB16 |
| B160B | Liteon | SMAB16 | MB1545CT | Motorola | B15A45VIC | RB160L-60 | Rohm | SMAB16 | STPS1045D | SGS-T | B10A45VI |
| B330A | Liteon | SMAB33 | MBR1045 | GI | B10A45VI | S15SCA4M | Sindengen | B15A45VIC | STPS1045F | SGS-T | B10A45VI |
| B340A | Liteon | SMAB34 | MBR1045 | IR | B10A45VI | SAC82-004 | Fuji | B10A45VIC | STPS16L40CF | SGS-T | B15A45VIC |
| D1FH3 | Shindengen | SMAB33 | MBR1045 | Motorola | B10A45VI | SBL540 | GI | B5A45VI | STPS16L40CT | SGS-T | B15A45VIC |
| D5S4M | Shindengen | B5A45VI | MBR1545CT | GI | B15A45VIC | SFPA-53 | Sanken | SMAB13 | U1FWJ44L | Toshiba | SMAB13 |
| D10SC4M | Shindengen | B10A45VIC | MBR1545CT | IR | B15A45VIC | SFPA-73 | Sanken | SMAB33 | U1FWJ44M | Toshiba | SMAB13 |
| D10SC6M | Shindengen | B10A60VIC | MBR1545CT | Motorola | B15A45VIC | SFPB-54 | Sanken | SMAB14 | U1FWJ44N | Toshiba | SMAB13 |
| D15SCA4M | Shindengen | B15A45VIC | MBRA130LT3 | Motorola | SMAB13 | SFPJ-53 | Sanken | SMAB13 | 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 |

Triacs

| Type No. | V _{DRM} (V) | I _{T(RMS)} (A) | I _{TSM} (A) | | I _{DRM} (μA) Max. | I _{GT} (mA) | | | V _{GT} (V) | | V _{TM} (V) | | (dv/dt) _C (V/μs) Min. | Package | Outline (Unit: mm) |
|----------|----------------------|-------------------------|----------------------|------|-------------------------------|----------------------|----|--------------|---------------------|------|---------------------|---------------------|-------------------------------------|---------|--------------------|
| | | | 50Hz | 60Hz | | I · II · III | IV | I · II · III | IV | Max. | Max. | | | | |
| | | | | | | | | | | | | I _{TM} (A) | | | |
| T1A6C | 600 | 1 | 9 | 10 | 10 | 5 | 10 | 2 | 2 | 1.6 | 1.5 | 2 | TO-92 | | |
| T3A6CI | 600 | 3 | 30 | 33 | 20 | 5 | 10 | 1.5 | 2 | 1.5 | 4.5 | 10 | TO-220IS | | |
| T6A6CI | 600 | 6 | 54 | 60 | 20 | 15 | - | 1.5 | - | 1.5 | 9 | 10 | | | |
| T8A6CI | 600 | 8 | 80 | 88 | 20 | 30 | - | 1.5 | - | 1.5 | 12 | 10 | | | |
| T10A6CI | 600 | 10 | 90 | 100 | 20 | 30 | - | 1.5 | - | 1.5 | 15 | 10 | | | |
| T12A6CI | 600 | 12 | 120 | 132 | 20 | 30 | - | 1.5 | - | 1.5 | 17 | 10 | | | |
| T16A6CI | 600 | 16 | 150 | 165 | 20 | 30 | - | 1.5 | - | 1.5 | 25 | 10 | | | |

List of Equivalent Products

| Type No. | Maker | KEC | Type No. | Maker | KEC | Type No. | Maker | KEC |
|------------|------------|---------|-------------|------------|---------|------------|----------|---------|
| AC01DGM | NEC | T1A6C | BCR12PM-12 | Mitsubishi | T12A6CI | MAC212-8 | Motorola | T12A6CI |
| AC03FGM | NEC | T3A6CI | BCR16CM-12 | Mitsubishi | T16A6CI | MAC212-8FP | Motorola | T12A6CI |
| AC03FSM | NEC | T3A6CI | BCR16PM-12 | Mitsubishi | T16A6CI | MAC229-8 | Motorola | T8A6CI |
| AC08FGM | NEC | T8A6CI | BTA06-600C | SGS-T | T6A6CI | SM1J43 | Toshiba | T1A6C |
| AC08FSM | NEC | T8A6CI | BTA08-600C | SGS-T | T8A6CI | SM3J45 | Toshiba | T3A6CI |
| AC10FGM | NEC | T10A6CI | BTA10-600C | SGS-T | T10A6CI | SM3JZ47 | Toshiba | T3A6CI |
| AC10FSM | NEC | T10A6CI | BTA12-600C | SGS-T | T12A6CI | SM6J45 | Toshiba | T6A6CI |
| AC12FGM | NEC | T12A6CI | BTA16-600BW | SGS-T | T16A6CI | SM6JZ47 | Toshiba | T6A6CI |
| AC12FSM | NEC | T12A6CI | BTB06-600C | SGS-T | T6A6CI | SM8J45 | Toshiba | T8A6CI |
| AC16FGM | NEC | T16A6CI | BTB08-600C | SGS-T | T8A6CI | SM8JZ47 | Toshiba | T8A6CI |
| AC16FSM | NEC | T16A6CI | BTB10-600C | SGS-T | T10A6CI | SM12J45 | Toshiba | T12A6CI |
| BCR1AM-12 | Mitsubishi | T1A6C | BTB12-600C | SGS-T | T12A6CI | SM12JZ47 | Toshiba | T12A6CI |
| BCR3AM-12 | Mitsubishi | T3A6CI | BTB16-600BW | SGS-T | T16A6CI | SM16J45 | Toshiba | T16A6CI |
| BCR8CM-12 | Mitsubishi | T8A6CI | MAC15-8 | Motorola | T16A6CI | SM16JZ47 | Toshiba | T16A6CI |
| BCR8PM-12 | Mitsubishi | T8A6CI | MAC15-8FP | Motorola | T16A6CI | T2323M | Motorola | T3A6CI |
| BCR10CM-12 | Mitsubishi | T10A6CI | MAC97A8 | Motorola | T1A6C | T2500M | Motorola | T5A6CI |
| BCR10PM-12 | Mitsubishi | T10A6CI | MAC210-8 | Motorola | T10A6CI | | | |
| BCR12CM-12 | Mitsubishi | T12A6CI | MAC210-8FP | Motorola | T10A6CI | | | |

■ 100MHz Band Paging System

| Device Name | fo [MHz] | BW3dB [MHz] | Insertion Loss [dBmax] | Rejection Level [dBmin] | Terminating Impedance | Package | Outline (Unit: mm) |
|-------------|----------|-------------|------------------------|-------------------------|-----------------------|---------|--------------------|
| KF139S | 139 | fo ±4.0 | 6 | 50 | 210ohm// -11.9pF | SC-45 | |
| KF147S | 147 | fo ±4.0 | 6 | 50 | 210ohm// -11.3pF | | |
| KF155S | 155 | fo ±4.0 | 6 | 50 | 210ohm// -10.7pF | | |
| KF163S | 163 | fo ±4.0 | 6 | 50 | 210ohm// -8.7pF | | |
| KF171S | 171 | fo ±4.0 | 6 | 50 | 210ohm// -12.7pF | | |

■ 280MHz Band Paging System

| Device Name | fo [MHz] | BW3dB [MHz] | Insertion Loss [dBmax] | Ripple [dBmax] | Rejection Level [dBmin] | Terminating Impedance | Package | Outline (Unit: mm) |
|-------------|----------|-------------|------------------------|----------------|-------------------------|-----------------------|---------|--------------------|
| KF281S | 281 | fo ±3.1 | 4 | 2 | 50 | 150ohm//0pF | SC-45 | |
| KF282S | 282 | fo ±4.0 | 4 | 2 | 50 | 150ohm//0pF | | |
| KF284S | 284 | fo ±3.1 | 4 | 2 | 50 | 150ohm//0pF | | |

■ 300MHz Band Paging System

| Device Name | fo [MHz] | BW3dB [MHz] | Insertion Loss [dBmax] | Ripple [dBmax] | Rejection Level [dBmin] | Terminating Impedance | Package | Outline (Unit: mm) |
|-------------|----------|-------------|------------------------|----------------|-------------------------|-----------------------|---------|--------------------|
| KF325V | 325.3 | fo ±3.3 | 4 | 2 | 50 | 150ohm//0pF | SC-44 | |
| KF319S | 319.5 | fo ±1.5 | 3 | 1.5 | 55 | 150ohm//0pF | SC-45 | |
| KF325AS | 325.3 | fo ±3.3 | 4 | 2 | 50 | 50ohm//0pF | | |
| KF325S | 325.3 | fo ±3.3 | 4 | 2 | 50 | 150ohm//0pF | | |

■ 400MHz ~ 500MHz Band (150 Ω Termination Impedance)

| Device Name | fo [MHz] | BW3dB [MHz] | Insertion Loss [dBmax] | Ripple [dBmax] | Rejection Level [dBmin] | Terminating Impedance | Package | Outline (Unit: mm) |
|-------------|----------|-------------|------------------------|----------------|-------------------------|-----------------------|---------|--------------------|
| KF402BV | 402 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | SC-44 | |
| KF406BV | 406 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF410BV | 410 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF414BV | 414 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF418BV | 418 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF422BV | 422 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF426BV | 426 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF430BV | 430 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF434BV | 434 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF438BV | 438 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF442BV | 442 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF446BV | 446 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF448BV | 448 | fo ±2.0 | 4 | 2 | 50 | 150ohm//0pF | | |
| KF450BV | 450 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF454BV | 454 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF458BV | 458 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF462BV | 462 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF465AV | 465 | fo ±3.0 | 4 | 2 | 50 | 150ohm//0pF | | |
| KF466BV | 466 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF470BV | 470 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF474BV | 474 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF478BV | 478 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF482BV | 482 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF486BV | 486 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF490BV | 490 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF494BV | 494 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF498BV | 498 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF502BV | 502 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF506BV | 506 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF510BV | 510 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF514BV | 514 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF518BV | 518 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |

■ 400MHz ~ 500MHz Band (150 Ω Termination Impedance)

| Device Name | f ₀ [MHz] | BW3dB [MHz] | Insertion Loss [dBmax] | Ripple [dBmax] | Rejection Level [dBmin] | Terminating Impedance | Package | Outline (Unit: mm) |
|-------------|----------------------|----------------------|------------------------|----------------|-------------------------|-----------------------|---------|--------------------|
| KF402BS | 402 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | SC-45 | |
| KF406BS | 406 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF410BS | 410 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF414BS | 414 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF418BS | 418 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF422BS | 422 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF426BS | 426 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF430BS | 430 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF434BS | 434 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF438BS | 438 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF442BS | 442 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF446BS | 446 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF448BS | 448 | f ₀ ± 2.0 | 4 | 2 | 50 | 150ohm//0pF | | |
| KF450BS | 450 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF454BS | 454 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF458BS | 458 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF462BS | 462 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF465AS | 465 | f ₀ ± 3.0 | 4 | 2 | 50 | 150ohm//0pF | | |
| KF466BS | 466 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF470BS | 470 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF474BS | 474 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF478BS | 478 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF482BS | 482 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF486BS | 486 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF490BS | 490 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF494BS | 494 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF498BS | 498 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF502BS | 502 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF506BS | 506 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF510BS | 510 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF514BS | 514 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF518BS | 518 | f ₀ ± 2.0 | 4 | 2 | 55 | 150ohm//0pF | | |

■ 400MHz Band (50 Ω Termination Impedance)

| Device Name | f ₀ [MHz] | BW3dB [MHz] | Insertion Loss [dBmax] | Ripple [dBmax] | Rejection Level [dBmin] | Terminating Impedance | Package | Outline (Unit: mm) |
|-------------|----------------------|----------------------|------------------------|----------------|-------------------------|-----------------------|---------|--------------------|
| KF422V | 422 | f ₀ ± 2.0 | 4 | 2 | 50 | 50ohm//0pF | SC-44 | |
| KF433V | 433.5 | f ₀ ± 2.0 | 4 | 2 | 50 | 50ohm//0pF | | |
| KF446AV | 446 | f ₀ ± 2.0 | 4 | 2 | 55 | 50ohm//0pF | | |
| KF446V | 446 | f ₀ ± 5.0 | 4 | 2 | 55 | 50ohm//0pF | | |
| KF448AV | 448 | f ₀ ± 2.0 | 4 | 2 | 50 | 50ohm//0pF | | |
| KF448V | 448 | f ₀ ± 5.0 | 4 | 2 | 55 | 50ohm//0pF | | |
| KF458V | 458 | f ₀ ± 5.0 | 4 | 2 | 55 | 50ohm//0pF | | |
| KF465V | 465 | f ₀ ± 3.0 | 4 | 2 | 50 | 50ohm//0pF | | |
| KF468V | 468 | f ₀ ± 5.0 | 4 | 2 | 55 | 50ohm//0pF | | |
| KF477V | 477 | f ₀ ± 2.0 | 4 | 2 | 50 | 50ohm//0pF | | |
| KF478V | 478 | f ₀ ± 5.0 | 4 | 2 | 55 | 50ohm//0pF | | |
| KF415S | 415 | f ₀ ± 5.0 | 4 | 2 | 55 | 50ohm//0pF | SC-45 | |
| KF422S | 422 | f ₀ ± 2.0 | 4 | 2 | 50 | 50ohm//0pF | | |
| KF425S | 425 | f ₀ ± 5.0 | 4 | 2 | 55 | 50ohm//0pF | | |
| KF433S | 433.5 | f ₀ ± 2.0 | 4 | 2 | 50 | 50ohm//0pF | | |
| KF435S | 435 | f ₀ ± 5.0 | 4 | 2 | 55 | 50ohm//0pF | | |
| KF440S | 440 | f ₀ ± 5.0 | 4 | 2 | 50 | 50ohm//0pF | | |
| KF444S | 444 | f ₀ ± 5.0 | 4 | 2 | 55 | 50ohm//0pF | | |
| KF446S | 446 | f ₀ ± 5.0 | 4 | 2 | 55 | 50ohm//0pF | | |
| KF448AS | 448 | f ₀ ± 2.0 | 4 | 2 | 50 | 50ohm//0pF | | |
| KF448S | 448 | f ₀ ± 5.0 | 4 | 2 | 55 | 50ohm//0pF | | |
| KF455S | 455 | f ₀ ± 5.0 | 4 | 2 | 50 | 50ohm//0pF | | |
| KF458S | 458 | f ₀ ± 5.0 | 4 | 2 | 55 | 50ohm//0pF | | |
| KF465BS | 465 | f ₀ ± 5.0 | 4 | 2 | 50 | 50ohm//0pF | | |
| KF465S | 465 | f ₀ ± 3.0 | 4 | 2 | 50 | 50ohm//0pF | | |
| KF468S | 468 | f ₀ ± 5.0 | 4 | 2 | 55 | 50ohm//0pF | | |
| KF477S | 477 | f ₀ ± 2.0 | 4 | 2 | 50 | 50ohm//0pF | | |
| KF478S | 478 | f ₀ ± 5.0 | 4 | 2 | 55 | 50ohm//0pF | | |

SAW Device

■ 900MHz Band Paging System

| Device Name | fo [MHz] | BW3dB [MHz] | Insertion Loss [dBmax] | Ripple [dBmax] | Rejection Level [dBmin] | Terminating Impedance | Package | Outline (Unit: mm) |
|-------------|----------|-------------|------------------------|----------------|-------------------------|-----------------------|---------|--------------------|
| KF924V | 924 | fo ±1.0 | 3.5 | 1.5 | 45 | 50ohm+10nH | SC-44 | |
| KF930AV | 930.5 | fo ±2.0 | 4 | 2 | 40 | 50ohm | | |
| KF930V | 930.5 | fo ±2.0 | 4 | 2 | 45 | 50ohm+10nH | | |
| KF930AS | 930.5 | fo ±2.0 | 4 | 2 | 40 | 50ohm | SC-45 | |
| KF930S | 930.5 | fo ±2.0 | 4 | 2 | 45 | 50ohm+10nH | | |

■ 900MHz Cordless Phone

| Device Name | fo [MHz] | BW3dB [MHz] | Insertion Loss [dBmax] | Ripple [dBmax] | Rejection Level [dBmin] | Terminating Impedance | Package | Outline (Unit: mm) |
|-------------|----------|-------------|------------------------|----------------|-------------------------|-----------------------|---------|--------------------|
| KF886V | 886 | fo ±2.0 | 4.0 | 1.5 | 45 | 50ohm+10nH | SC-44 | |
| KF903AV | 903 | fo ±1.2 | 4.5 | 1.5 | 45 | 50ohm | | |
| KF914V | 914.5 | fo ±1.0 | 4.0 | 1.5 | 45 | 50ohm+10nH | | |
| KF927AV | 927 | fo ±1.2 | 5.0 | 1.5 | 45 | 50ohm | | |
| KF931V | 931 | fo ±2.0 | 4.0 | 1.5 | 45 | 50ohm+10nH | | |
| KF959V | 959.5 | fo ±1.0 | 4.0 | 1.5 | 45 | 50ohm+10nH | | |

■ Wireless Data Communication

| Device Name | fo [MHz] | BW3dB [MHz] | Insertion Loss [dBmax] | Ripple [dBmax] | Rejection Level [dBmin] | Terminating Impedance | Package | Outline (Unit: mm) |
|-------------|----------|-------------|------------------------|----------------|-------------------------|-----------------------|---------|--------------------|
| KF899V | 899 | fo ±2.0 | 4 | 1.5 | 45 | 50ohm+10nH | SC-44 | |
| KF939V | 939 | fo ±2.0 | 4 | 1.5 | 45 | 50ohm+10nH | | |

■ Cellular Phone

| Device Name | fo [MHz] | BW3dB [MHz] | Insertion Loss [dBmax] | Ripple [dBmax] | Rejection Level [dBmin] | Terminating Impedance | Package | Outline (Unit: mm) |
|-------------|----------|-------------|------------------------|----------------|-------------------------|-----------------------|---------|--------------------|
| KF836FU | 836.5 | fo ±12.5 | 3.5 | 2 | 30 | 50ohm//0pF | SC-33 | |
| * KF836U | 836.5 | fo ±12.5 | 3.5 | 1.6 | 28 | 50ohm//0pF | | |
| KF881FU | 881.5 | fo ±12.5 | 3.5 | 2 | 30 | 50ohm//0pF | | |
| * KF881U | 881.5 | fo ±12.5 | 3.5 | 1.6 | 28 | 50ohm//0pF | | |
| KF902FU | 902.5 | fo ±12.5 | 3.5 | 2 | 20 | 50ohm//0pF | | |
| KF942FU | 942.5 | fo ±17.5 | 3.5 | 2 | 5 | 50ohm//0pF | | |
| KF947FU | 947.5 | fo ±12.5 | 3.5 | 2 | 20 | 50ohm//0pF | | |

Note) * : Under development

100MHz Band Paging System

| Device Name | fo [MHz] | BW3dB [MHz] | Insertion Loss [dBmax] | Rejection Level [dBmin] | Terminating Impedance | Package | Outline (Unit: mm) |
|-------------|----------|-------------|------------------------|-------------------------|-----------------------|---------|--------------------|
| KF139 | 139 | fo ±4.0 | 6 | 50 | 210ohm// -11.9pF | F-11 | |
| KF147 | 147 | fo ±4.0 | 6 | 50 | 210ohm// -11.3pF | | |
| KF155 | 155 | fo ±4.0 | 6 | 50 | 210ohm// -10.7pF | | |
| KF163 | 163 | fo ±4.0 | 6 | 50 | 210ohm// -8.7pF | | |
| KF171 | 171 | fo ±4.0 | 6 | 50 | 210ohm// -12.7pF | | |

280MHz Band Paging System

| Device Name | fo [MHz] | BW3dB [MHz] | Insertion Loss [dBmax] | Ripple [dBmax] | Rejection Level [dBmin] | Terminating Impedance | Package | Outline (Unit: mm) |
|-------------|----------|-------------|------------------------|----------------|-------------------------|-----------------------|---------|--------------------|
| KF281 | 281 | fo ±3.1 | 4 | 2 | 50 | 150ohm//0pF | F-11 | |
| KF282 | 282 | fo ±4.0 | 4 | 2 | 50 | 150ohm//0pF | | |
| KF284 | 284 | fo ±3.1 | 4 | 2 | 50 | 150ohm//0pF | | |

300MHz Band Paging System

| Device Name | fo [MHz] | BW3dB [MHz] | Insertion Loss [dBmax] | Ripple [dBmax] | Rejection Level [dBmin] | Terminating Impedance | Package | Outline (Unit: mm) |
|-------------|----------|-------------|------------------------|----------------|-------------------------|-----------------------|---------|--------------------|
| KF325 | 325.3 | fo ±3.3 | 4 | 2 | 50 | 150ohm//0pF | F-11 | |

400MHz ~ 500MHz Band (150 Ω Termination Impedance)

| Device Name | fo [MHz] | BW3dB [MHz] | Insertion Loss [dBmax] | Ripple [dBmax] | Rejection Level [dBmin] | Terminating Impedance | Package | Outline (Unit: mm) |
|-------------|----------|-------------|------------------------|----------------|-------------------------|-----------------------|---------|--------------------|
| KF402B | 402 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | F-11 | |
| KF406B | 406 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF410B | 410 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF414B | 414 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF418B | 418 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF422B | 422 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF426B | 426 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF430B | 430 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF434B | 434 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF438B | 438 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF442B | 442 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF446B | 446 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF448B | 448 | fo ±2.0 | 4 | 2 | 50 | 150ohm//0pF | | |
| KF450B | 450 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF454B | 454 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF458B | 458 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF462B | 462 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF465A | 465 | fo ±3.0 | 4 | 2 | 50 | 150ohm//0pF | | |
| KF466B | 466 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF470B | 470 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF474B | 474 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF478B | 478 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF482B | 482 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF486B | 486 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF490B | 490 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF494B | 494 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF498B | 498 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF502B | 502 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF506B | 506 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF510B | 510 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF514B | 514 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |
| KF518B | 518 | fo ±2.0 | 4 | 2 | 55 | 150ohm//0pF | | |

■ 400MHz Band (50 Ω Termination Impedance)

| Device Name | fo [MHz] | BW3dB [MHz] | Insertion Loss[dBmax] | Ripple [dBmax] | Rejection Level[dBmin] | Terminating Impedance | Package | Outline (Unit: mm) |
|-------------|----------|-------------|-----------------------|----------------|------------------------|-----------------------|---------|--------------------|
| KF415 | 415 | fo ±5.0 | 4 | 2 | 55 | 50ohm//0pF | F-11 | |
| KF422 | 422 | fo ±2.0 | 4 | 2 | 50 | 50ohm//0pF | | |
| KF425 | 425 | fo ±5.0 | 4 | 2 | 55 | 50ohm//0pF | | |
| KF433 | 433.5 | fo ±2.0 | 4 | 2 | 50 | 50ohm//0pF | | |
| KF435 | 435 | fo ±5.0 | 4 | 2 | 55 | 50ohm//0pF | | |
| KF440 | 440 | fo ±5.0 | 4 | 2 | 55 | 50ohm//0pF | | |
| KF444 | 444 | fo ±5.0 | 4 | 2 | 55 | 50ohm//0pF | | |
| KF446 | 446 | fo ±5.0 | 4 | 2 | 55 | 50ohm//0pF | | |
| KF446A | 446 | fo ±2.0 | 4 | 2 | 55 | 50ohm//0pF | | |
| KF448 | 448 | fo ±5.0 | 4 | 2 | 55 | 50ohm//0pF | | |
| KF448A | 448 | fo ±2.0 | 4 | 2 | 50 | 50ohm//0pF | | |
| KF458 | 458 | fo ±5.0 | 4 | 2 | 55 | 50ohm//0pF | | |
| KF465 | 465 | fo ±3.0 | 4 | 2 | 50 | 50ohm//0pF | | |
| KF465B | 465 | fo ±5.0 | 4 | 2 | 50 | 50ohm//0pF | | |
| KF468 | 468 | fo ±5.0 | 4 | 2 | 55 | 50ohm//0pF | | |
| KF477 | 477 | fo ±2.0 | 4 | 2 | 50 | 50ohm//0pF | | |
| KF478 | 478 | fo ±5.0 | 4 | 2 | 55 | 50ohm//0pF | | |

■ 900MHz Band Paging System

| Device Name | fo [MHz] | BW3dB [MHz] | Insertion Loss[dBmax] | Ripple [dBmax] | Rejection Level[dBmin] | Terminating Impedance | Package | Outline (Unit: mm) |
|-------------|----------|-------------|-----------------------|----------------|------------------------|-----------------------|---------|--------------------|
| KF930 | 930.5 | fo ±2.0 | 4 | 2 | 45 | 50ohm+10nH | F-11 | |
| KF930A | 930.5 | fo ±2.0 | 4 | 2 | 40 | 50ohm | | |

■ 900MHz Cordless Phone

| Device Name | fo [MHz] | BW3dB [MHz] | Insertion Loss[dBmax] | Ripple [dBmax] | Rejection Level[dBmin] | Terminating Impedance | Package | Outline (Unit: mm) |
|-------------|----------|-------------|-----------------------|----------------|------------------------|-----------------------|---------|--------------------|
| KF886 | 886 | fo ±2.0 | 4.0 | 1.5 | 45 | 50ohm+10nH | F-11 | |
| KF903A | 903 | fo ±1.2 | 4.5 | 1.5 | 45 | 50ohm | | |
| KF914 | 914.5 | fo ±1.0 | 4.0 | 1.5 | 45 | 50ohm+10nH | | |
| KF927A | 927 | fo ±1.2 | 5.0 | 1.5 | 45 | 50ohm | | |
| KF931 | 931 | fo ±2.0 | 4.0 | 1.5 | 45 | 50ohm+10nH | | |
| KF959 | 959.5 | fo ±1.0 | 4.0 | 1.5 | 45 | 50ohm+10nH | | |

■ 900MHz Cordless Phone(SAW Duplexer)

| Device Name | fo [MHz] | BW3dB [MHz] | Insertion Loss [dBmax] | Ripple [dBmax] | Terminating Impedance | Package | Outline (Unit: mm) |
|-------------|----------------|-------------|------------------------|----------------|-----------------------|---------|--------------------|
| KFX0327T | 903.75, 926.25 | fo ±1.0 | 4.5 | 2.0 | 50ohm//0pF | TO-39 | |
| KFX1459T | 914.5, 959.5 | fo ±0.5 | 4.0 | 1.5 | 50ohm//0pF | | |
| KFX2703T | 926.25, 903.75 | fo ±1.0 | 4.5 | 2.0 | 50ohm//0pF | | |
| KFX3186T | 931, 886 | fo ±1.0 | 4.0 | 2.0 | 50ohm//0pF | | |
| KFX5914T | 959.5, 914.5 | fo ±0.5 | 4.0 | 1.5 | 50ohm//0pF | | |
| KFX8631T | 886, 931 | fo ±1.0 | 4.0 | 2.0 | 50ohm//0pF | | |

Part Numbering System of Dielectric Device

| No. | <u>KH B 0914 A01</u> | | | | <u>KH X 36 81 B01</u> | | | | <u>KH R 0975 C01</u> | | | |
|---------------|---------------------------|------------------------------------|---|----------------|-----------------------|---|-----------------------|----------------|----------------------|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 3* | 4 | 1 | 2 | 3 |
| 1 | KEC HIGH FREQUENCY DEVICE | | | | | | | | | | | |
| 2 | B | BPF | | X | DUPLXER | | R | DR | | | | |
| 3 | CENTER FREQUENCY | 0914 : 914.5MHz 1890 : 1890 MHz | | 3 : TX | 36 : 836.5 MHz | | RESONANT FREQUENCY | 975 : 9.75 GHz | | | | |
| 65 : 1765 MHz | | | | | | | | | | | | |
| 3* : RX | | | | 81 : 881.5 MHz | | | | | | | | |
| | | | | 55 : 1855 MHz | | | | | | | | |
| 4 | VERSION : A01 ~Z99 | | | | | | | | | | | |

Dielectric Band Pass Filter

| Part No. | Application | Freq (MHz) | Band Width (MHz) | Insertion Loss (dB) | Attenuation (dB) | Dimension (mm) |
|------------|-------------|------------|------------------|---------------------|---------------------|-----------------------------|
| KHB0914A01 | CT1 | 914.5 | $f_o \pm 1$ | 3.5 | 869.5MHz : 35 | $3 \times 6 \times 7.71$ |
| | | | | | 959.5MHz : 25 | |
| KHB0959A01 | CT1 | 959.5 | $f_o \pm 1$ | 3.5 | 914.5MHz : 35 | $3 \times 6 \times 7.31$ |
| | | | | | 1004.5MHz : 25 | |
| KHB1890B01 | DECT | 1890 | $f_o \pm 10$ | 1.5 | 1660 ~ 1680MHz : 30 | $2.4 \times 4.4 \times 3.8$ |
| | | | | | 1770 ~ 1790MHz : 10 | |
| | | | | | 3760 ~ 3800MHz : 10 | |
| | | | | | 5640 ~ 5700MHz : 10 | |
| KHB1890C01 | DECT | 1890 | $f_o \pm 10$ | 2.0 | 1660 ~ 1680MHz : 45 | $2 \times 4 \times 5.6$ |
| | | | | | 1770 ~ 1790MHz : 15 | |
| | | | | | 3760 ~ 3800MHz : 35 | |
| | | | | | 5640 ~ 5700MHz : 10 | |
| KHB2442A01 | US-C/P | 2442 | $f_o \pm 52.5$ | 2.0 | 1942MHz : 35 | $2 \times 4 \times 4.4$ |
| | | | | | 2192MHz : 16 | |
| | | | | | 2692MHz : 12 | |
| | | | | | 2942MHz : 25 | |
| KHB2403A01 | US-C/P | 2404.5 | $f_o \pm 1$ | 3.5 | Fo+21.4MHz:10 | $7.3 \times 3.6 \times 6.9$ |
| KHB2403B01 | US-C/P | 2404.5 | $f_o \pm 1$ | 3.5 | Fo+21.4MHz:23 | $5.9 \times 3.6 \times 6.8$ |
| KHB2475A01 | US-C/P | 2475.95 | $f_o \pm 1$ | 3.5 | Fo-21.4MHz:10 | $7.3 \times 3.6 \times 6.7$ |
| KHB2475B01 | US-C/P | 2475.95 | $f_o \pm 1$ | 3.5 | Fo-21.4MHz:23 | $5.9 \times 3.6 \times 6.6$ |
| KHB2450A01 | Bluetooth | 2450 | $f_o \pm 50$ | 2.0 | 1950MHz : 40 | $2 \times 4 \times 4.4$ |
| | | | | | 2200MHz : 15 | |
| | | | | | 2700MHz : 12 | |
| | | | | | 2950MHz : 25 | |

■ Dielectric Duplexer

| Part No. | Application | Freq (MHz) | Band Width (MHz) | Insertion Loss (dB) | Attenuation (dB) | Dimension (mm) |
|-------------|-------------|------------|------------------|---------------------|---------------------|------------------|
| KHX3681A01 | CDMA | Tx : 836.5 | $f_0 \pm 12.5$ | 2.8 | 869 ~ 894MHz : 43 | 3.8 × 21.5 × 9.7 |
| | | Rx : 881.5 | $f_0 \pm 12.5$ | 3.3 | 824 ~ 849MHz : 56 | |
| *KHX3681B01 | CDMA | Tx : 836.5 | $f_0 \pm 12.5$ | 3.0 | 869 ~ 894MHz : 40 | 3.3 × 15.8 × 9.5 |
| | | Rx : 881.5 | $f_0 \pm 12.5$ | 4.0 | 824 ~ 849MHz : 55 | |
| *KHX6555A01 | K-PCS | Tx : 1765 | $f_0 \pm 15$ | 3.0 | 1840 ~ 1870MHz : 40 | 2.3 × 13.9 × 7.6 |
| | | Rx : 1855 | $f_0 \pm 15$ | 3.5 | 1750 ~ 1780MHz : 54 | |
| *KHX8060A01 | US-PCS | TX:1880 | $f_0 \pm 30$ | 3.6 | 1930 ~ 1990MHz : 40 | 4.1 × 26.5 × 7.2 |
| | | RX:1960 | $f_0 \pm 30$ | 4.2 | 1850 ~ 1910MHz : 50 | |
| *KHX5040A01 | IMT2000 | Tx : 1950 | $f_0 \pm 30$ | 3.0 | 2110 ~ 2170MHz : 42 | 2.6 × 15.5 × 6.7 |
| | | Rx : 2140 | $f_0 \pm 30$ | 3.5 | 1850 ~ 1910MHz : 55 | |

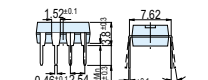

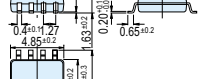
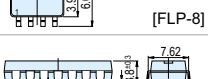
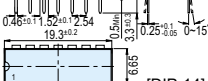
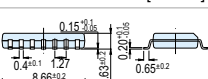
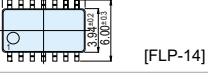
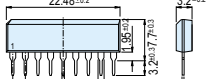
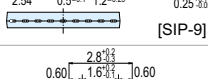
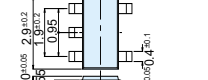
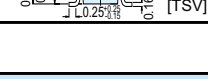
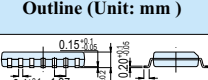
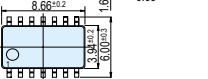
Note) * : Under development

■ Dielectric Resonator

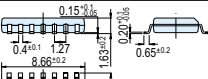
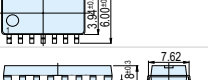
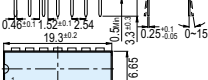
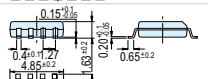
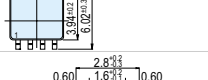
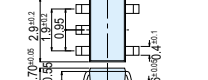
| Part No. | Dielectric Resonator | | Support | | Resonant Frequency Range (GHz) |
|------------|----------------------|----------------|---------------|----------------|--------------------------------|
| | Diameter (mm) | Thickness (mm) | Diameter (mm) | Thickness (mm) | |
| KHR0515A01 | 10.80 | 4.10 | 7.40 | 2.00 | 5.00 ~ 5.50 |
| KHR0575A01 | 10.80 | 2.80 | 7.40 | 2.60 | 5.50 ~ 6.00 |
| KHR0975A01 | 5.60 | 2.00 | 3.80 | 1.40 | 9.35 ~ 9.85 |
| KHR1060A01 | 4.70 | 2.20 | 3.20 | 1.00 | 10.20 ~ 10.80 |
| KHR1075A01 | 4.70 | 2.00 | 3.20 | 1.00 | 10.50 ~ 11.00 |
| KHR1130A01 | 4.70 | 1.70 | 3.20 | 1.00 | 11.00 ~ 11.50 |

Industrial & General Purpose ICs

OP Amp.

| Type No. | Function | Operating Voltage(V) | Package | Outline (Unit: mm) |
|------------|--------------------------|----------------------|---------|--|
| KIA324F | Quad OP Amp. | ± 18 or 36 | FLP-14 |  |
| KIA324P | Quad OP Amp. | ± 18 or 36 | DIP-14 |  [DIP-8] |
| KIA358F | Dual OP Amp. | ± 18 or 36 | FLP-8 |  |
| KIA75S358F | Single OP Amp. | ± 18 or 36 | TSV |  [FLP-8] |
| KIA358P | Dual OP Amp. | ± 18 or 36 | DIP-8 |  |
| KIA358S | Dual OP Amp. | ± 18 or 36 | SIP-9 |  [DIP-14] |
| KIA4558F | Dual Low Noise OP Amp. | ± 18 or 36 | FLP-8 |  |
| KIA75S558F | Single Low Noise OP Amp. | ± 18 or 36 | TSV |  [FLP-14] |
| KIA4558P | Dual Low Noise OP Amp. | ± 18 or 36 | DIP-8 |  |
| KIA4558S | Dual Low Noise OP Amp. | ± 18 or 36 | SIP-9 |  [SIP-9] |
| KIA4559F | Dual Low Noise OP Amp. | ± 18 or 36 | FLP-8 |  |
| KIA4559P | Dual Low Noise OP Amp. | ± 18 or 36 | DIP-8 |  |
| KIA4559S | Dual Low Noise OP Amp. | ± 18 or 36 | SIP-9 |  [TSV] |

Comparator

| Type No. | Function | Operating Voltage(V) | Package | Outline (Unit: mm) |
|------------|---------------------------|----------------------|---------|---|
| KIA339F | Quad Voltage Comparator | ± 18 or 36 | FLP-14 |  |
| KIA339P | Quad Voltage Comparator | ± 18 or 36 | DIP-14 |  [DIP-14] |
| KIA393F | Dual Voltage Comparator | ± 18 or 36 | FLP-8 |  |
| KIA75S393F | Single Voltage Comparator | ± 18 or 36 | TSV |  [DIP-8] |
| KIA393P | Dual Voltage Comparator | ± 18 or 36 | DIP-8 |  |
| KIA393S | Dual Voltage Comparator | ± 18 or 36 | SIP-9 |  [SIP-9] |

Integrated Circuit

■ 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 | |
| * KIA431BF | 3C | Shunt Regulator | 0.5 | 2.5 ~ 36 | SOT-89 | |
| * KIA2431BP | - | Shunt Regulator | 0.5 | 2.5 ~ 36 | TO-92 | |
| * KIA2431BS | 24C | Shunt Regulator | 0.5 | 2.5 ~ 36 | TSM | |
| * KIA2431BT | 24C | Shunt Regulator | 0.5 | 2.5 ~ 36 | TSV | |
| KIA431A | - | Shunt Regulator | 1 | 2.5 ~ 36 | TO-92 | |
| KIA431AF | 3B | Shunt Regulator | 1 | 2.5 ~ 36 | SOT-89 | |
| * KIA2431AP | - | Shunt Regulator | 1 | 2.5 ~ 36 | TO-92 | |
| * KIA2431AS | 24B | Shunt Regulator | 1 | 2.5 ~ 36 | TSM | |
| * KIA2431AT | 24B | Shunt Regulator | 1 | 2.5 ~ 36 | TSV | |
| * KIA2431P | - | Shunt Regulator | 1.5 | 2.5 ~ 36 | TO-92 | |
| * KIA2431S | 24A | Shunt Regulator | 1.5 | 2.5 ~ 36 | TSM | |
| * KIA2431T | 24A | Shunt Regulator | 1.5 | 2.5 ~ 36 | TSV | |
| KIA431 | - | Shunt Regulator | 2.2 | 2.5 ~ 36 | TO-92 | |
| KIA431F | 3A | Shunt Regulator | 2.2 | 2.5 ~ 36 | SOT-89 | |

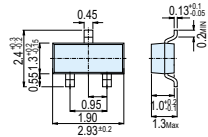
Note) * : Under development

Low Current Type Voltage Detector (Active Low)

| Type No. | Max. Ratings | | | Detecting Volts. Vs (V) | | | Low-Level Output Volts VOL(V) | | Hysteresis Volts. ΔVs (mV) | | | Circuit Current at On. IccL(μA) | | Circuit Current at Off. IccH(μA) | | Package | Outline (Unit: mm) | |
|------------|--------------|------------|---------|-------------------------|------|------|-------------------------------|------|----------------------------|------|------|---------------------------------|------|----------------------------------|--------|---------|--------------------|--|
| | Mark | VCC (V) | Pd (mW) | (RL=470Ω, VOL ≤ 0.4V) | | | RL=470Ω | | RL=470Ω | | | VCC=Vsmín-0.05V | | VCC=Vsmáx+0.1V | | | | |
| | | | | Min. | Typ. | Max. | Max. | Min. | Typ. | Max. | Typ. | Max. | Typ. | Max. | | | | |
| * KIA7219S | 72A | -0.3~+10.0 | 350 | 1.75 | 1.9 | 2.05 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | SOT-23 | | | |
| * KIA7221S | 72B | -0.3~+10.0 | 350 | 1.95 | 2.1 | 2.25 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7223S | 72C | -0.3~+10.0 | 350 | 2.15 | 2.3 | 2.45 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7225S | 72D | -0.3~+10.0 | 350 | 2.35 | 2.5 | 2.65 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7227S | 72E | -0.3~+10.0 | 350 | 2.55 | 2.7 | 2.85 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7229S | 72F | -0.3~+10.0 | 350 | 2.75 | 2.9 | 3.05 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7231S | 72G | -0.3~+10.0 | 350 | 2.95 | 3.1 | 3.25 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7232S | 72H | -0.3~+10.0 | 350 | 3.05 | 3.2 | 3.35 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7233S | 72J | -0.3~+10.0 | 350 | 3.15 | 3.3 | 3.45 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7234S | 72K | -0.3~+10.0 | 350 | 3.25 | 3.4 | 3.55 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7235S | 72L | -0.3~+10.0 | 350 | 3.35 | 3.5 | 3.65 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7236S | 72M | -0.3~+10.0 | 350 | 3.45 | 3.6 | 3.75 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7239S | 72N | -0.3~+10.0 | 350 | 3.75 | 3.9 | 4.05 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7242S | 72P | -0.3~+10.0 | 350 | 4.05 | 4.2 | 4.35 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7245S | 72R | -0.3~+10.0 | 350 | 4.35 | 4.5 | 4.65 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7219F | 2A | -0.3~+10.0 | 500 | 1.75 | 1.9 | 2.05 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | SOT-89 | |
| * KIA7221F | 2B | -0.3~+10.0 | 500 | 1.95 | 2.1 | 2.25 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7223F | 2C | -0.3~+10.0 | 500 | 2.15 | 2.3 | 2.45 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7225F | 2D | -0.3~+10.0 | 500 | 2.35 | 2.5 | 2.65 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7227F | 2E | -0.3~+10.0 | 500 | 2.55 | 2.7 | 2.85 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7229F | 2F | -0.3~+10.0 | 500 | 2.75 | 2.9 | 3.05 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7231F | 2G | -0.3~+10.0 | 500 | 2.95 | 3.1 | 3.25 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7232F | 2H | -0.3~+10.0 | 500 | 3.05 | 3.2 | 3.35 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7233F | 2J | -0.3~+10.0 | 500 | 3.15 | 3.3 | 3.45 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7234F | 2K | -0.3~+10.0 | 500 | 3.25 | 3.4 | 3.55 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7235F | 2L | -0.3~+10.0 | 500 | 3.35 | 3.5 | 3.65 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7236F | 2M | -0.3~+10.0 | 500 | 3.45 | 3.6 | 3.75 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7239F | 2N | -0.3~+10.0 | 500 | 3.75 | 3.9 | 4.05 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7242F | 2P | -0.3~+10.0 | 500 | 4.05 | 4.2 | 4.35 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7245F | 2R | -0.3~+10.0 | 500 | 4.35 | 4.5 | 4.65 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7219P | - | -0.3~+10.0 | 400 | 1.75 | 1.9 | 2.05 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | TO-92 | | | |
| * KIA7221P | - | -0.3~+10.0 | 400 | 1.95 | 2.1 | 2.25 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7223P | - | -0.3~+10.0 | 400 | 2.15 | 2.3 | 2.45 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7225P | - | -0.3~+10.0 | 400 | 2.35 | 2.5 | 2.65 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7227P | - | -0.3~+10.0 | 400 | 2.55 | 2.7 | 2.85 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7229P | - | -0.3~+10.0 | 400 | 2.75 | 2.9 | 3.05 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7231P | - | -0.3~+10.0 | 400 | 2.95 | 3.1 | 3.25 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7232P | - | -0.3~+10.0 | 400 | 3.05 | 3.2 | 3.35 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7233P | - | -0.3~+10.0 | 400 | 3.15 | 3.3 | 3.45 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7234P | - | -0.3~+10.0 | 400 | 3.25 | 3.4 | 3.55 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7235P | - | -0.3~+10.0 | 400 | 3.35 | 3.5 | 3.65 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7236P | - | -0.3~+10.0 | 400 | 3.45 | 3.6 | 3.75 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7239P | - | -0.3~+10.0 | 400 | 3.75 | 3.9 | 4.05 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7242P | - | -0.3~+10.0 | 400 | 4.05 | 4.2 | 4.35 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |
| * KIA7245P | - | -0.3~+10.0 | 400 | 4.35 | 4.5 | 4.65 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 3.5 | | | | |

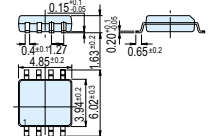
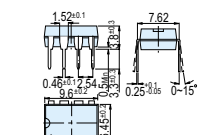
Note) * : Under development

■ Low Current Type Voltage Detector (Vs ≒ ±2%) (Active Low)

| Type No. | Mark | Max. Ratings | | Detecting Volts. Vs (V) | | | Low-Level Output Volts. Vol (V) | Hysteresis Volts. ΔVs (mV) | | | Circuit Current at on. IccL(μA) | | Circuit Current at off. IccH(μA) | | Package | Outline (Unit: mm) |
|------------|------|--------------|---------|-------------------------|------|-------|---------------------------------|----------------------------|------|------|---------------------------------|------|----------------------------------|------|---------|---|
| | | VCC (V) | Pd (mW) | (RL=470Ω, VOL ≤ 0.4V) | | | Max. | RL=470Ω | | | VCC=VsmIn-0.05V | | VCC=VsmAx+0.1V | | | |
| | | | | Min. | Typ. | Max. | | Min. | Typ. | Max. | Typ. | Max. | Typ. | Max. | | |
| * KIA7719S | 77A | -0.3 ~ +10.0 | 350 | 1.862 | 1.9 | 1.938 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | SOT-23 |  |
| * KIA7721S | 77B | -0.3 ~ +10.0 | 350 | 2.058 | 2.1 | 2.142 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7723S | 77C | -0.3 ~ +10.0 | 350 | 2.254 | 2.3 | 2.346 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7725S | 77D | -0.3 ~ +10.0 | 350 | 2.45 | 2.5 | 2.55 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7727S | 77E | -0.3 ~ +10.0 | 350 | 2.646 | 2.7 | 2.754 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7729S | 77F | -0.3 ~ +10.0 | 350 | 2.842 | 2.9 | 2.958 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7731S | 77G | -0.3 ~ +10.0 | 350 | 3.038 | 3.1 | 3.162 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7732S | 77H | -0.3 ~ +10.0 | 350 | 3.136 | 3.2 | 3.264 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7733S | 77J | -0.3 ~ +10.0 | 350 | 3.234 | 3.3 | 3.366 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7734S | 77K | -0.3 ~ +10.0 | 350 | 3.332 | 3.4 | 3.468 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7735S | 77L | -0.3 ~ +10.0 | 350 | 3.43 | 3.5 | 3.57 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7736S | 77M | -0.3 ~ +10.0 | 350 | 3.528 | 3.6 | 3.672 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7739S | 77N | -0.3 ~ +10.0 | 350 | 3.822 | 3.9 | 3.978 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7742S | 77P | -0.3 ~ +10.0 | 350 | 4.116 | 4.2 | 4.284 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7745S | 77R | -0.3 ~ +10.0 | 350 | 4.41 | 4.5 | 4.59 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7719P | - | -0.3 ~ +10.0 | 400 | 1.862 | 1.9 | 1.938 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7721P | - | -0.3 ~ +10.0 | 400 | 2.058 | 2.1 | 2.142 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7723P | - | -0.3 ~ +10.0 | 400 | 2.254 | 2.3 | 2.346 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7725P | - | -0.3 ~ +10.0 | 400 | 2.45 | 2.5 | 2.55 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7727P | - | -0.3 ~ +10.0 | 400 | 2.646 | 2.7 | 2.754 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7729P | - | -0.3 ~ +10.0 | 400 | 2.842 | 2.9 | 2.958 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7731P | - | -0.3 ~ +10.0 | 400 | 3.038 | 3.1 | 3.162 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7732P | - | -0.3 ~ +10.0 | 400 | 3.136 | 3.2 | 3.264 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7733P | - | -0.3 ~ +10.0 | 400 | 3.234 | 3.3 | 3.366 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7734P | - | -0.3 ~ +10.0 | 400 | 3.332 | 3.4 | 3.468 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7735P | - | -0.3 ~ +10.0 | 400 | 3.43 | 3.5 | 3.57 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7736P | - | -0.3 ~ +10.0 | 400 | 3.528 | 3.6 | 3.672 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7739P | - | -0.3 ~ +10.0 | 400 | 3.822 | 3.9 | 3.978 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7742P | - | -0.3 ~ +10.0 | 400 | 4.116 | 4.2 | 4.284 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |
| * KIA7745P | - | -0.3 ~ +10.0 | 400 | 4.41 | 4.5 | 4.59 | 0.4 | 20 | 50 | 100 | 100 | 150 | 1 | 2.5 | | |

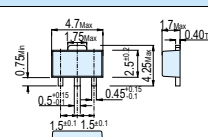
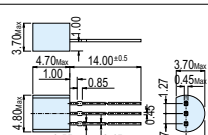
Note) *: Under development

■ 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. | 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.

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

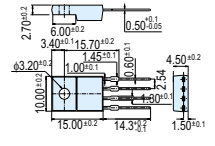
| Type No. | Mark | Max. Ratings | | | VOUT (V) | | | Reg. Line (mV) | | | Reg. Load (mV) | | | VDRIP(V) | | Package | Outline (Unit: mm) | | |
|---------------|------|--------------|---------|------------------|-----------|------|------|------------------|------|------|----------------|------|------|----------|------|---------|--------------------|--------|---|
| | | VIN (V) | Io (mA) | Pd(mW) (Ta=25°C) | (Tj=25°C) | | | VIN(V) (Tj=25°C) | | | Tj=25°C | | | Tj=25°C | | | | | |
| | | | | | Min. | Typ. | Max. | Min. | Max. | Max. | Min. | Max. | Max. | Min. | Max. | | | Typ. | Iout (mA) |
| * 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

■ 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) | | |
| * KIA78R25PI | 15 | 1 | 15 | 2.438 | 2.5 | 2.562 | 4.2 | 2.5 | 3.2 | 10 | 2 | 5 | 1 | 0.5 | 0.95Vo | |
| * KIA78R30PI | 15 | 1 | 15 | 2.925 | 3 | 3.075 | 4.7 | 2.5 | 3.7 | 10 | 2 | 5 | 1 | 0.5 | 0.95Vo | |
| KIA78R33PI | 15 | 1 | 15 | 3.22 | 3.3 | 3.38 | 5 | 2.5 | 4 | 10 | 2 | 5 | 1 | 0.5 | 0.95Vo | |
| * KIA78R35PI | 15 | 1 | 15 | 3.413 | 3.5 | 3.587 | 5.2 | 2.5 | 4.2 | 10 | 2 | 5 | 1 | 0.5 | 0.95Vo | |
| * KIA78R37PI | 15 | 1 | 15 | 3.608 | 3.7 | 3.792 | 5.4 | 2.5 | 4.4 | 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 | |

TO-220IS-4

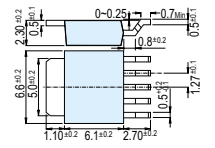


Note) * : Under development

■ 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) | | VIN (V) | | | |
| | | | | Min. | Typ. | Max. | | Max. | Min. | | Max. | Max. | | Min.(mA) | | |
| * KIA78R25F | 15 | 1 | 8 | 2.438 | 2.5 | 2.562 | 4.2 | 2.5 | 3.2 | 10 | 2 | 5 | 1 | 0.5 | 0.95Vo | |
| * KIA78R30F | 15 | 1 | 8 | 2.925 | 3 | 3.075 | 4.7 | 2.5 | 3.7 | 10 | 2 | 5 | 1 | 0.5 | 0.95Vo | |
| * KIA78R33F | 15 | 1 | 8 | 3.22 | 3.3 | 3.38 | 5 | 2.5 | 4 | 10 | 2 | 5 | 1 | 0.5 | 0.95Vo | |
| * KIA78R35F | 15 | 1 | 8 | 3.413 | 3.5 | 3.587 | 5.2 | 2.5 | 4.2 | 10 | 2 | 5 | 1 | 0.5 | 0.95Vo | |
| * KIA78R37F | 15 | 1 | 8 | 3.608 | 3.7 | 3.792 | 5.4 | 2.5 | 4.4 | 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 | |

DPAK-5

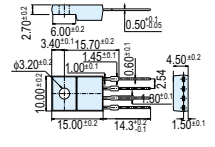


Note) * : Under development

■ 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) | | VIN (V) | | | |
| | | | | Min. | Typ. | Max. | | Max. | Min. | | Max. | Max. | | Min.(mA) | | |
| * KIA278R25PI | 15 | 2 | 15 | 2.438 | 2.5 | 2.562 | 4.2 | 2.5 | 3.2 | 10 | 2 | 5 | 2 | 0.5 | 0.95Vo | |
| * KIA278R30PI | 15 | 2 | 15 | 2.925 | 3 | 3.075 | 4.7 | 2.5 | 3.7 | 10 | 2 | 5 | 2 | 0.5 | 0.95Vo | |
| KIA278R33PI | 15 | 2 | 15 | 3.22 | 3.3 | 3.38 | 5 | 2.5 | 4 | 10 | 2 | 5 | 2 | 0.5 | 0.95Vo | |
| * KIA278R35PI | 15 | 2 | 15 | 3.143 | 3.5 | 3.587 | 5.2 | 2.5 | 4.2 | 10 | 2 | 5 | 2 | 0.5 | 0.95Vo | |
| * KIA278R37PI | 15 | 2 | 15 | 3.608 | 3.7 | 3.792 | 5.4 | 2.5 | 4.4 | 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 | |

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Note) * : Under development

■ 0.15A 3-Terminal Voltage Regulators (Negative)

| Type No. | Mark | Max. Ratings | | | VOUT (V) | | | Reg. Line (mV) | | | Reg. Load (mV) | | | VDR0P(V) | | Package | Outline (Unit: mm) |
|--------------|------|--------------|--------|---------------------|-----------|------|-------|----------------|-----------|------|----------------|-----------|------|-----------|-----------|---------|--------------------|
| | | VIN (V) | IO (A) | Pd(mW) (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. | | | | |
| KIA79L05F | 9A | -35 | 0.15 | 500 | -5.2 | -5 | -4.8 | -10 | 150 | -20 | -7 | 60 | 1 | 100 | 1.7 | 40 | |
| 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 | |
| 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 | |
| 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) | | | VDR0P(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. | | | | |
| KIA79M05P | -35 | 0.5 | 20.8 | -4.8 | -5 | -5.2 | -10 | 50 | -7 | -25 | 100 | 5 | 500 | 1.1 | 500 | |
| KIA79M08P | -35 | 0.5 | 20.8 | -7.7 | -8.0 | -8.3 | -14 | 80 | -10 | -25 | 160 | 5 | 500 | 1.1 | 500 | |
| KIA79M12P | -35 | 0.5 | 20.8 | -11.5 | -12 | -12.5 | -19 | 80 | -14.5 | -30 | 240 | 5 | 500 | 1.1 | 500 | |
| KIA79M15P | -35 | 0.5 | 20.8 | -14.4 | -15 | -15.6 | -23 | 80 | -17.5 | -30 | 240 | 5 | 500 | 1.1 | 500 | |
| 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 | |

■ 1A 3-Terminal Voltage Regulators (Negative)

| Type No. | Max. Ratings | | | VOUT (V) | | | Reg. Line (mV) | | | Reg. Load (mV) | | | VDR0P(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. | | | | |
| 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 | |
| KIA7905P | -35 | 1 | 20.8 | -5.2 | -5 | -4.8 | -10 | 50 | -12 | -8 | 100 | 5 | 1.5 | 2 | 1 | |
| KIA7906P | -35 | 1 | 20.8 | -6.25 | -6 | -5.75 | -11 | 60 | -13 | -9 | 120 | 5 | 1.5 | 2 | 1 | |
| KIA7908P | -35 | 1 | 20.8 | -8.3 | -8 | -7.7 | -14 | 80 | -17 | -11 | 160 | 5 | 1.5 | 2 | 1 | |
| KIA7909P | -35 | 1 | 20.8 | -9.3 | -9 | -8.7 | -15 | 90 | -19 | -13 | 150 | 5 | 1.5 | 2 | 1 | |
| KIA7910P | -35 | 1 | 20.8 | -10.4 | -10 | -9.6 | -16 | 100 | -20 | -14 | 180 | 5 | 1.5 | 2 | 1 | |
| KIA7912P | -35 | 1 | 20.8 | -12.5 | -12 | -11.5 | -18 | 120 | -22 | -16 | 240 | 5 | 1.5 | 2 | 1 | |
| KIA7915P | -35 | 1 | 20.8 | -15.6 | -15 | -14.4 | -23 | 150 | -26 | -20 | 300 | 5 | 1.5 | 2 | 1 | |
| KIA7918P | -40 | 1 | 20.8 | -18.7 | -18 | -17.3 | -27 | 180 | -30 | -24 | 360 | 5 | 1.5 | 2 | 1 | |
| KIA7920P | -40 | 1 | 20.8 | -20.8 | -20 | -19.2 | -30 | 180 | -32 | -26 | 360 | 5 | 1.5 | 2 | 1 | |
| KIA7924P | -40 | 1 | 20.8 | -25 | -24 | -23 | -33 | 240 | -36 | -30 | 480 | 5 | 1.5 | 2 | 1 | |

■ 1A 3-Terminal Voltage Regulators (Negative)

| Type No. | Max. Ratings | | | V _{OUT} (V) | | | | Reg. Line (mV) | | | Reg. Load (mV) | | | V _{DROP} (V) | | Package | Outline (Unit: mm) |
|-----------|---------------------|--------------------|---|------------------------|------|-------|---------------------|------------------------|------|---------------------|------------------------|---|----------------------|-----------------------|---|----------|--------------------|
| | V _{IN} (V) | I _O (A) | P _D (W) (T _a =25°C) | (T _j =25°C) | | | V _{IN} (V) | (T _j =25°C) | | V _{IN} (V) | (T _j =25°C) | | I _{OUT} (A) | | | | |
| | | | | Min. | Typ. | Max. | | Max. | Min. | | Max. | | | | | | |
| KIA7905PI | -35 | 1 | 20.8 | -5.2 | -5 | -4.8 | -10 | 50 | -12 | -8 | 100 | 5 | 1.5 | 2 | 1 | TO-220IS | |
| 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 | | |

■ Transistor Array & Interface Driver ICs

| Type No. | Function | Unit | Clamp Diode | V _{OUT} (V) | I _{OUT} (mA) | System V _{CC} (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 | | |
| 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 | SIP-9 | |
| 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 | | |
| KID65502P | Single Driver (Common Emitter) | 7 | | 35 | 200 | 14~25 | DIP-16 | |
| 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 | SIP-9 | |
| KID65507P | Single Driver (Isolated) | 5 | | 35 | 200 | Free | | |
| KID65551S | Single Driver (Common Emitter) | 4 | | 25 | 150 | Free | | |
| KID65553S | Single Driver (Common Emitter) | 4 | | 25 | 150 | 5 | | |
| KID65554S | Single Driver (Common Emitter) | 4 | | 25 | 150 | 6~15 | FLP-20 | |
| KID65555S | Single Driver (Common Emitter) | 4 | | 25 | 150 | 14~20 | | |
| 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.) | |
|----------|--------------------------|----------------------|---------|---------------------------|---------|
| KIA6401F | Tone Ringer | ~29 | FLP-8 | | |
| KIA6402F | Tone Ringer | ~29 | FLP-8 | | |
| KIA6401P | Tone Ringer | ~29 | DIP-8 | | [FLP-8] |
| KIA6402P | Tone Ringer | ~29 | DIP-8 | | [FLP-8] |
| KIA6419F | 55 mW AF Power Amplifier | ~29 | FLP-8 | | |
| KIA6419P | 55 mW AF Power Amplifier | ~29 | DIP-8 | | [DIP-8] |

Automobiles ICs

| Type No. | Function | Operating Voltage(V) | Package | Outline (Unit: mm) |
|---------------|--|----------------------|---------|--------------------|
| KIA4210SV | Lamp Fail Indicator | 8.0 ~24 | SIP-9 | |
| 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 | |
| KIA78DS05BPV | 5V/30 mA Low Drop Regulator | ~29 | TO-92 | |
| * KIA78L05BPV | 5V/0.15A Regulator | ~35 | TO-92L | |
| * KIA78L06BPV | 6V/0.15A Regulator | | | |
| * KIA78L08BPV | 8V/0.15A Regulator | | | |
| * KIA78L09BPV | 9V/0.15A Regulator | | | |
| * KIA78L10BPV | 10V/0.15A Regulator | | | |
| * KIA78L12BPV | 12V/0.15A Regulator | | | |
| * KIA78L15BPV | 15V/0.15A Regulator | | | |
| * KIA78L18BPV | 18V/0.15A Regulator | | | |
| * KIA78L20BPV | 20V/0.15A Regulator | | | |
| * KIA78L24BPV | 24V/0.15A Regulator | | | |
| * KID65001AFV | Darlington TR Array(7-Circuit) | ~50 | FLP-16 | |
| * KID65002AFV | | | | |
| * KID65003AFV | | | | |
| * KID65004AFV | | | | |
| * KID65001APV | Darlington TR Array(7-Circuit) | ~50 | DIP-16 | |
| * KID65002APV | | | | |
| * KID65003APV | | | | |
| * KID65004APV | | | | |

Note) *: Under development

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 | |

Integrated Circuit

Logic MOS ICs

| Type No. | Mark | Max. Ratings | | | | | Function | Package | Outline (Unit: mm) |
|--------------|------|------------------------------------|--------------------------------------|--|---|---------------------------------------|---------------------------------|---------|--------------------|
| | | Supply Voltage V _{CC} (V) | DC Input Voltage V _{IN} (V) | DC Output Voltage V _{OUT} (V) | DC Output Current I _{OUT} (mA) | Power Dissipation P _d (mW) | | | |
| KIC7S00FU | SP | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±12.5 | 200 | 2 Input NAND Gate | USV | |
| KIC7S02FU | SQ | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±12.5 | 200 | 2 Input NOR Gate | | |
| KIC7S04FU | SR | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±12.5 | 200 | Inverter Gate | | |
| KIC7S08FU | ST | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±12.5 | 200 | 2 Input AND Gate | | |
| KIC7S14FU | SU | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±12.5 | 200 | Schmitt Trigger Inverter | | |
| KIC7S32FU | SV | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±12.5 | 200 | 2 Input OR Gate | | |
| KIC7S66FU | SW | -0.5 ~ 10 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±12.5 | 200 | Analog Switch | | |
| KIC7S86FU | SX | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±12.5 | 200 | Exclusive OR Gate | | |
| * KIC7SH04FU | VR | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±25 | 200 | Inverter | | |
| * KIC7SH08FU | VT | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±25 | 200 | 2 Input AND Gate | | |
| KIC7SU04FU | SS | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±12.5 | 200 | Inverter Gate (Unbuffer) | | |
| * KIC7W00FU | 000 | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±25 | 300 | Dual 2 Input NAND Gate | SM8 | |
| KIC7W04FU | 004 | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±25 | 300 | Triple Inverter Gate | | |
| KIC7W08FU | 008 | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±25 | 300 | Dual 2 Input AND Gate | | |
| * KIC7W14FU | 014 | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±25 | 300 | Triple Schmitt Trigger Inverter | | |
| KIC7W32FU | 032 | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±25 | 300 | Dual 2 Input OR Gate | | |
| KIC7W53FU | 053 | -0.5 ~ 10 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±25 | 300 | 2 Channel Multiplexer | | |
| KIC7W66FU | 066 | -0.5 ~ 10 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±25 | 300 | Dual Analog Switch | | |
| * KIC7W74FU | 074 | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±25 | 300 | D Flip Flop | | |
| KIC7W125FU | 125 | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±35 | 300 | Dual 3 State Buffer | | |
| KIC7W126FU | 126 | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±35 | 300 | Dual 3 State Buffer | | |
| KIC7W241FU | 241 | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±35 | 300 | Dual 3 State Buffer | | |
| * KIC7WU04FU | U04 | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±25 | 300 | Triple Inverter Gate (Unbuffer) | | |
| * KIC7W00FK | 00 | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±25 | 200 | Dual 2 Input NAND Gate | US8 | |
| * KIC7W04FK | 04 | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±25 | 200 | Triple Inverter Gate | | |
| * KIC7W08FK | 08 | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±25 | 200 | Dual 2 Input AND Gate | | |
| * KIC7W14FK | 14 | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±25 | 200 | Triple Schmitt Trigger Inverter | | |
| * KIC7W32FK | 32 | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±25 | 200 | Dual 2 Input OR Gate | | |
| * KIC7W53FK | 53 | -0.5 ~ 10 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±25 | 200 | 2 Channel Multiplexer | | |
| * KIC7W66FK | 66 | -0.5 ~ 10 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±25 | 200 | Dual Analog Switch | | |
| * KIC7W74FK | 74 | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±25 | 200 | D Flip Flop | | |
| * KIC7W125FK | 125 | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±35 | 200 | Dual 3 State Buffer | | |
| * KIC7W126FK | 126 | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±35 | 200 | Dual 3 State Buffer | | |
| * KIC7W241FK | 241 | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±35 | 200 | Dual 3 State Buffer | | |
| * KIC7WU04FK | U04 | -0.5 ~ 7 | -0.5 ~ V _{CC} +0.5 | -0.5 ~ V _{CC} +0.5 | ±25 | 200 | Triple Inverter Gate (Unbuffer) | | |

Note) * : Under development

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 | |
| * KIA2951P | Micro Power Voltage Regulator | 30 | DIP-8 | |
| * KIA2951F | Micro Power Voltage Regulator | 30 | FLP-8 | |
| KIA6801K | Bi-directional DC Motor driver | 6.0 ~ 18 | SSIP-10 | |
| KIA6901F | DC Motor Speed Controller | 1.8 ~ 8 | FLP-8 | |
| KIA6901P | | | DIP-8 | |
| KIA6903P | | | DIP-16 | |
| KIA6987P | Rx Demodulator | 3.5 ~ 12 | DIP-16 | |
| KIA6988P | CDI Controllers | 8.8 | DIP-14 | |
| * KIA7102AP | SYSTEM IC (Dual OP-Amp + Dual Comparator+ Shunt Regulator) | 36 | DIP-16 | |
| * KIA7102AF | SYSTEM IC (Dual OP-Amp + Dual Comparator+ Shunt Regulator) | 36 | FLP-16 | |
| KIA8000S | 5V Voltage Regulator with Watchdog Timer | 6.0 ~ 40 | SIP-9 | |

Note) * : Under development

| Type No. | Maker | KEC | Type No. | Maker | KEC | Type No. | Maker | KEC |
|--------------|------------|-------------------|----------------|------------|-------------------|-------------------|----------|--------------------|
| AN1324 | Matsushita | KIA324P/F | LM336 | N/S | KIA431/F/A/AF | TA75S558F | Toshiba | KIA75S558F |
| AN1393/S | Matsushita | KIA393P/S/F | LM339/N | N/S | KIA339P/F | TA76431S/F | Toshiba | KIA431/F |
| AN1431T | Matsushita | KIA431 | LM358 | Motorola | KIA358P/S/F | TA76494P | Toshiba | KIA494AP/AF |
| AN4558/S | Matsushita | KIA4558P/S/F | LM393/N | N/S | KIA393P/S/F | TA7805 ~ 24S/SB | Toshiba | KIA7805 ~ 24API |
| AN6553/S | Matsushita | KIA4559P/S/F | LM555/CN | Mitsubishi | KIA555P/F | TA78xxF | Toshiba | KIA78xxAF |
| AN6612/S | Matsushita | KIA6901P/F | LM7900CT | N/S | KIA7900P/PI | TA78DL05 ~ 15S | Toshiba | KIA78DL05 ~ 15PI |
| AN6650/S | Matsushita | KIA6901P/F | LP2951N/M | N/S | KIA2951P/F | TA78DLxxAF | Toshiba | KIA78DLxxF |
| AN6651 | Matsushita | KIA6903P | M51943 | Mitsubishi | KIA7042AP/AF | TA78DS05BP | Toshiba | KIA78DS05BP |
| AN6912/S | Matsushita | KIA339P/F | M51944 | Mitsubishi | KIA7442P/F | TA78L005 ~ 24AP/F | Toshiba | KIA78L05 ~ 24BP/F |
| AN7805-24 | Matsushita | KIA7805-24AP/API | M51957B | Mitsubishi | KIA7125F/FV | TA78L05 ~ 24S | Toshiba | KIA78S05 ~ 24P |
| AN78L05-24 | Matsushita | KIA78S05-24P | M54563P | Mitsubishi | KID65783AP | TA78M05 ~ 24S/SB | Toshiba | KIA78M05 ~ 24PI |
| AN7900F | Matsushita | KIA7900P | M5F7900 | Mitsubishi | KIA7900P/PI | TA79005 ~ 24S/SB | Toshiba | KIA7905 ~ 24PI |
| AS431LAN/AMI | Alpha | KIA431BP/BF | MB4210 | Fujitsu | KIA4210S/SV | TA79L05 ~ 24P/F | Toshiba | KIA79L05 ~ 24BP/F |
| BA033 ~ 15FP | Rohm | KIA78D33 ~ 15F | MB4213 | Shindengen | KIA6988P | TA79M05 ~ 24S/SB | Toshiba | KIA79M05 ~ 24P/PI |
| BA222 | Rohm | KIA555P/F | MC1455/D | Motorola | KIA555P/F | TA8000S | Toshiba | KIA8000S |
| BA223 | Rohm | KIA555P/F | MC34063AP/AD | Motorola | KIA34063A/AF | TC7S**FU | Toshiba | KIC7S**FU |
| BA4558/F/N | Rohm | KIA4558P/F/S | MC34119P/D | Motorola | KIA6419P/F | TC7W**FU | Toshiba | KIC7W**FU |
| BA6220 | Rohm | KIA6903P | MC4558C | Motorola | KIA4558P/S/F | TC7SH04FU | Toshiba | KIC7SH04FU |
| BA6235/F | Rohm | KIA6901P/F | MC7805-24CT | Motorola | KIA7805 ~ 24AP | TC7SH08FU | Toshiba | KIC7SH08FU |
| BA6209N | Rohm | KIA6801K | MC78L05-24AC/C | Motorola | KIA78S05 ~ 24P | TC7W**FK | Toshiba | KIC7W**FK |
| BA10324/F | Rohm | KIA324P/F | MC7900CT | Motorola | KIA7900P/PI | TD62001 ~ 4P/AP | Toshiba | KID65001 ~ 4AP |
| BA10339/F | Rohm | KIA339P/F | MJM2901D/M | JRC | KIA339P/F | TD62083AP/AF | Toshiba | KID65083AP/AF |
| BA10358/F/N | Rohm | KIA358P/F/S | MN1280 | Matsushita | KIA7019 ~ 45AP/AF | TD62084AP/AF | Toshiba | KID65084AP/AF |
| BA10393/F/N | Rohm | KIA393P/F/S | NC7S**P5X | Fairchild | KIC7S**FU | TD62501 ~ 7P | Toshiba | KID65501 ~ 7P |
| BMR0301* | Kodenshi | KIA7219 ~ 45P/S/F | NJM431L/U | JRC | KIA431/F/A/AF | TD62551 ~ 5S | Toshiba | KID65551 ~ 5S |
| HA17431P/UA | Hitachi | KIA431/F | NJM555D/M | JRC | KIA555P/F | TD62783AP/AF | Toshiba | KID65783AP/AF |
| KA278R** | Fairchild | KIA278R**PI | NJM22360AD/AM | NJRC | KIA34063A/AF | TL431 | Motorola | KIA431/F/A/AF |
| KA34063A/AD | Fairchild | KIA34063A/AF | NJM2614D | NJRC | KIA6987P | TL431 | TI | KIA431/F/A/AF |
| KA8602F | Fairchild | KIA6419F | NJM2902D | JRC | KIA324P/F | TL494 | Motorola | KIA494AP/AF |
| KA78R** | Fairchild | KIA78R**PI | NJM2903D/M | JRC | KIA393P/S/F | TLV431LP | TI | KIA2431P/AP/BP |
| L5431 | Sanyo | KIA431 | NJM4558D/S/M | JRC | KIA4558P/S/F | TLV431DBV | TI | KIA2431T/AT/BT |
| L78M00T | Sanyo | KIA78M00P/PI | NJM4559D/S/M | JRC | KIA4559P/S/F | TSM102AM/AD | SGS-T | KIA7102AP/AF |
| L79M00T | Sanyo | KIA79M00P/PI | NJM78xxDLA | NJRC | KIA78xxAF | UDN2981A | Sprague | KID65783AP |
| LA5527 | Sanyo | KIA6901P | NJM7900A/FA | JRC | KIA7900P/PI | ULN2001 ~ 4A | Motorola | KID65001 ~ 4AP |
| LA5528 | Sanyo | KIA6901P | PQ3RD13 | Sharp | KIA78R33PI | ULN2803/4 | Motorola | KID65083/84AP |
| LA6324N/NM | Sanyo | KIA324P/F | PQ3RD23 | Sharp | KIA278R33PI | XC61AC**** | Torex | KIA7719 ~ 45P/S |
| LA6339/M | Sanyo | KIA339P/F | PQ3RF23 | Sharp | KIA278R33PI | XC74UL** | Torex | KIC7S**FU |
| LA6358N/NM | Sanyo | KIA358P/F | PQ**RF11 | Sharp | KIA78R05PI ~ 15PI | μA431 | NEC | KIA431/F/A/AF |
| LA6393D/M | Sanyo | KIA393P/F | PQ**RF21 | Sharp | KIA278R**PI | μA7805 ~ 24 | NEC | KIA7805 ~ 24AP/API |
| LA6458/D/M | Sanyo | KIA4558P/S/F | PST523 | Mitsumi | KIA7019 ~ 45AP/AF | μA7900C | NEC | KIA7900P/PI |
| LA8501 | Sanyo | KIA6401P/F | PST524 | Mitsumi | KIA7019 ~ 45AP/AF | μA7900CKC | NEC | KIA7900P/PI |
| LB1211 | Sanyo | KID65501P | PST93** | Mitsumi | KIA7719 ~ 45P/S | μPA2981C | NEC | KID65783AP |
| LB1212 | Sanyo | KID65502P | RX5VL** | Richo | KIA7719 ~ 45P/S | μPC324C | NEC | KIA324P/F |
| LB1213/M | Sanyo | KID65503P/F | S805* | Seikoins | KIA7719 ~ 45P/S | μPC339C/G | NEC | KIA393P/F |
| LB1214 | Sanyo | KID65504P | SN74AHCT1G** | TI | KIC7S**FU | μPC393C/G | NEC | KIA393P/F |
| LB1215 | Sanyo | KID65505P | TA31001P/F | Toshiba | KIA6401P/F | μPC494/C | NEC | KIA494AP/AF |
| LB1216 | Sanyo | KID65506P | TA31002P/F | Toshiba | KIA6402P/F | μPC1093J/T | NEC | KIA431/F/A/AF |
| LB1217 | Sanyo | KID65507P | TA75339P | Toshiba | KIA339P | μPC1555C | NEC | KIA555P/F |
| LB1231 | Sanyo | KID65001AP | TA75393P | Toshiba | KIA393P | μPC4558C/G | NEC | KIA4558P/F |
| LB1232 | Sanyo | KID65002AP | TA75558P | Toshiba | KIA4558P/S/F | μPC4559C/G | NEC | KIA4559P/F |
| LB1233 | Sanyo | KID65003AP | TA75559P | Toshiba | KIA4559P/S/F | μPC7805 ~ 24A | NEC | KIA7805 ~ 24AP/API |
| LB1234 | Sanyo | KID65004AP | TA7555P/F | Toshiba | KIA555P/F | μPC78L05 ~ 15J | NEC | KIA78L05 ~ 15F |
| LB8555D/M | Sanyo | KIA555P/F | TA75S01F | Toshiba | KIA75S358F | μPC78M05 ~ 24A | NEC | KIA78M05 ~ 24PI |
| LM324/N | Motorola | KIA324P/F | TA75S393F | Toshiba | KIA75S393F | μPC7900A | NEC | KIA7900P/PI |

Integrated Circuit

Audio Analog ICs

RF, IF, MPX System ICs

| Type No. | Function | Recommended Application | | | | | Operating Voltage (V) | Package |
|-------------|---|-------------------------|-------------------|---------|----|-----------|-----------------------|---------|
| | | Car Stereo | Portable Cassette | Walkman | TV | Universal | | |
| KIA6035P | AM Tuner (ETR) | ● | | | | | 7.5 ~ 12 | DIP-20 |
| KIA6040P | AM/FM IF | | ● | | | | 3.0 ~ 8.0 | DIP-16 |
| KIA6043S | FM Stereo MPX. | ● | ● | | | | 3.5 ~ 12 | SIP-9 |
| KIA6058F | FM Front End, Very Low Spurious Radiation | | ● | ● | | | 1.6 ~ 6.0 | FLP-8 |
| KIA6058S/AS | FM Front End, Very Low Spurious Radiation | | ● | ● | | | 1.6 ~ 6.0 | SIP-9 |

Pre-Amp, Power Amp ICs

| Type No. | Function | Recommended Application | | | | | Operating Voltage (V) | Package |
|--------------|---------------------------------|-------------------------|-------------------|---------|----|-----------|-----------------------|-----------------------|
| | | Car Stereo | Portable Cassette | Walkman | TV | Universal | | |
| KIA6225P/S | Pre-Amp. | ● | ● | | | | 6.0 ~ 16 | DIP-8 / SIP-9 |
| KIA6259P/S | Dual Pre-Amp., Very Low Noise | ● | ● | | | ● | ±1.5 ~ ±1.8 | DIP-8 / SIP-9 |
| KIA6268P | Dual Pre-Amp. with Built-in ALC | | ● | | | | 6.0 ~ 15 | DIP-16 |
| KIA6213S | 0.5W Single Power Amp | | ● | | ● | | 4.0 ~ 14 | SIP-9 |
| KIA6278P/S/F | 1W Single Power Amp. | | ● | ● | ● | ● | 2.0 ~ 10 | DIP-8 / SIP-9 / FLP-8 |
| KIA6269P | 1.2W Dual Power Amp | | ● | | ● | | 4.5 ~ 9.0 | DIP-16 |
| KIA6282K | 4.6W Dual Power Amp. | | ● | | | | 6.0 ~ 15 | SSIP-12 |
| KIA6283K | 4.6W Dual Power Amp. | | ● | | | | 6.0 ~ 15 | SSIP-12 |
| KIA7217AP | 5.8W Single Power Amp. | | ● | | | ● | 9.0 ~ 18 | SSIP-10 |
| KIA6240K | 6W Dual Power Amp. | | | | ● | ● | 8 ~ 26 | SSIP-10 |

Motor Driver ICs

| Type No. | Function | Operating Voltage (V) | Package |
|----------|--|-----------------------|---------|
| KIA6801K | Bidirectional Motor Driver With Brake (1Motor) | 6.0 ~ 18 | SSIP-10 |

Miscellaneous ICs

| Type No. | Function | Operating Voltage (V) | Package |
|------------|------------------------------|-----------------------|---------------|
| KIA6901P/F | DC Motor Speed Controller | 1.8 ~ 8.0 | DIP-8 / FLP-8 |
| KIA6903P | DC Motor Speed Controller | 3.5 ~ 18.0 | DIP-8 |
| KIA6924S | Muting | - | SIP-9 |
| KIA6966S | 5 Dot LED Level Meter Driver | 4.0 ~ 12 | SIP-9 |