

Digital Transistors

Transistors with built-in resistors.

Available in various packages with a variety of built-in resistors to meet a wide range of needs.

● Product Designation

DTA123E □ A														
Part No.	Suffix A (Except EM3)	Package code												
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Package</th> <th>Code</th> </tr> </thead> <tbody> <tr> <td>EM3</td> <td>E</td> </tr> <tr> <td>UMT</td> <td>U</td> </tr> <tr> <td>SST</td> <td>C</td> </tr> <tr> <td>SMT</td> <td>K</td> </tr> <tr> <td>MPT</td> <td>P</td> </tr> </tbody> </table>	Package	Code	EM3	E	UMT	U	SST	C	SMT	K	MPT	P
Package	Code													
EM3	E													
UMT	U													
SST	C													
SMT	K													
MPT	P													
<p>EM3 of 100mA version has no suffix " A ".</p> <p>DTA123E of UMT package should be denoted as DTA123EUA.</p> <p>See table right for package code.</p>														

EM3 · UMT · SST · SMT

● 100mA Specifications

PNP Type Fig.1	NPN Type Fig.2	Resistance value		Package				V _{CC} (V)	I _O (mA)	G _I	V _O (V)	I _O (mA)
		R ₁ (kΩ)	R ₂ (kΩ)	EM3* Pd=150mW	UMT* Pd=200mW	SST Pd=200mW	SMT					
DTA123E□A	DTC123E□A	2.2	2.2	○	○	○	○	50	100	20~	5	20
DTA143E□A	DTC143E□A	4.7	4.7	○	○	○	○	50	100	20~	5	10
DTA114E□A	DTC114E□A	10	10	○	○	○	○	50	50	30~	5	5
DTA124E□A	DTC124E□A	22	22	○	○	○	○	50	30	56~	5	5
DTA144E□A	DTC144E□A	47	47	○	○	○	○	50	30	68~	5	5
DTA115E□A	DTC115E□A	100	100	—	○	○	○	50	20	82~	5	5
DTA113Z□A	DTC113Z□A	1.0	10	○	○	○	○	50	100	33~	5	5
DTA123Y□A	DTC123Y□A	2.2	10	○	○	○	○	50	100	33~	5	10
DTA143Y□A	DTC143Y□A	4.7	22	—	○	○	○	50	100	56~	5	5
DTA123J□A	DTC123J□A	2.2	47	○	○	○	○	50	100	80~	5	10
DTA143X□A	DTC143X□A	4.7	10	○	○	○	○	50	100	30~	5	10
DTA143Z□A	DTC143Z□A	4.7	47	○	○	○	○	50	100	80~	5	10
DTA114W□A	DTC114W□A	10	4.7	○	○	○	○	50	100	24~	5	10
DTA114Y□A	DTC114Y□A	10	47	○	○	○	○	50	70	68~	5	5
DTA124X□A	DTC124X□A	22	47	○	○	○	○	50	50	68~	5	5
*DTA115U□	*DTC115U□	100	10	—	○	○	○	50	20	27~	5	5
DTA144V□A	DTC144V□A	47	10	—	○	○	○	50	70	33~	5	5
DTA144W□A	DTC144W□A	47	22	○	○	○	○	50	30	56~	5	5
DTA1D3R□A	DTC1D3R□A	2.7	1.0	—	○	○	○	50	30	20~	5	30
□ : Package code				E	U	C	K					

PNP Type Fig.3	NPN Type Fig.4	Resistance value R ₁ (kΩ)	Package				V _{CE0} (V)	I _C (mA)	Min.	Typ.	Max.	h _{FE}	
			EM3* Pd=150mW	UMT* Pd=200mW	SST Pd=200mW	SMT						V _{CE} (V)	I _C (mA)
DTA143T□A	DTC143T□A	4.7	○	○	○	○	50	100	100	250	600	5	1
DTA114T□A	DTC114T□A	10	○	○	○	○	50	100	100	250	600	5	1
DTA124T□A	DTC124T□A	22	○	○	○	○	50	100	100	250	600	5	1
DTA144T□A	DTC144T□A	47	○	○	○	○	50	100	100	250	600	5	1
DTA115T□A	DTC115T□A	100	—	○	○	○	50	100	100	250	600	5	1
*DTA125T□	*DTC125T□	200	—	○	○	○	50	100	100	250	600	5	1
DTA113T□A	—	1.0	○	○	○	○	50	100	100	250	600	5	1
□ : Package code			E	U	C	K							

PNP Type Fig.5	NPN Type Fig.6	B-E Resistance R ₂ (kΩ)	Package				V _{CE0} (V)	I _C (mA)	Min.	h _{FE}		
			EM3* Pd=150mW	UMT* Pd=200mW	SST Pd=200mW	SMT				V _{CE} (V)	I _C (mA)	I _C (mA)
DTA114G□A	DTC114G□A	10	○	○	○	○	50	100	30	5	5	5
DTA124G□A	DTC124G□A	22	○	○	○	○	50	100	56	5	5	5
DTA144G□A	DTC144G□A	47	○	○	○	○	50	100	68	5	5	5
DTA115G□A	DTC115G□A	100	—	○	○	○	50	100	82	5	5	5
□ : Package code			E	U	C	K						

- Notes : 1. *With recommended land pattern laid out.
 2. Specification codes for PNP and NPN are omitted.
 3. *Not for EM3.
 4. EM3 has no suffix " A ".

● Low ON output type

PNP Type Fig.1	NPN Type Fig.6	Resistance value		Package				V _{CC} (V)	I _O (mA)	G _I	V _O (V)	I _O (mA)	V _O (on) (V)		
		R ₁ (kΩ)	R ₂ (kΩ)	EM3* Pd=150mW	UMT* Pd=200mW	SST Pd=200mW	SMT						I _O (mA)	I _I (mA)	
DTA214Y□	—	10	47	—	○	○	○	30	70	68	5	5	0.3	50	2.5
□ : Package code				—	U	C	K								

SMT • MPT • SST

●500mA Specifications

PNP Type Fig.1	NPN Type Fig.2	Resistance value		Vcc (V)	Ic Max.* (mA)	Gi	Vo (V)	Io (mA)	Package
		R1 (kΩ)	R2 (kΩ)						
DTB113E□	DTD113E□	1.0	1.0	50	500	33~	5	50	SMT SST
DTB123E□	DTD123E□	2.2	2.2	50	500	39~	5	50	
DTB143E□	DTD143E□	4.7	4.7	50	500	47~	5	50	
DTB114E□	DTD114E□	10	10	50	500	56~	5	50	
DTB122J□	DTD122J□	0.22	4.7	50	500	47~	5	50	
DTB113Z□	DTD113Z□	1.0	10	50	500	56~	5	50	
DTB123Y□	DTD123Y□	2.2	10	50	500	56~	5	50	
DTB133H□	DTD133H□	3.3	10	50	500	56~	5	50	

PNP Type Fig.3	NPN Type Fig.4	Resistance value R1 (kΩ)	VCE0 (V)	Ic (mA)	Min.	Typ.	hFE Max.	VCE (V)	Ic (mA)	Package
DTB143T□	DTD143T□	4.7	40	500	100	250	600	5	50	
DTB163T□	DTD163T□	6.8	40	500	100	250	600	5	50	
DTB114T□	DTD114T□	10	40	500	100	250	600	5	50	

PNP Type Fig.5	NPN Type Fig.6	BE Resistance R2 (kΩ)	VCE0 (V)	Ic (mA)	Min.	hFE Max.	VCE (V)	Ic (mA)	Package

Notes : 1. *Characteristics of component transistors.
2. Specification codes for PNP and NPN are omitted.

●For Muting

PNP Type -	NPN Type Fig.2	Resistance value		Vcc (V)	Ic Max.* (mA)	Gi	Vo (V)	Io (mA)	Ron (Ω) Typ.	Package
		R1 (kΩ)	R2 (kΩ)							
-	DTC363E□	6.8	6.8	20	600	70~	5	50	1.0	SMT • SST

PNP Type -	NPN Type Fig.4	Resistance value R1 (kΩ)	VCE0 (V)	Ic (mA)	Min.	Typ.	hFE Max.	VCE (V)	Ic (mA)	Ron (Ω) Typ.	Package
-	DTC343T□	4.7	15	600	100	250	600	5	50	0.95	
-	DTC363T□	6.8	15	600	100	250	600	5	50	1.25	
-	DTC314T□	10	15	600	100	250	600	5	50	1.5	

Note : *Characteristics of component transistors.

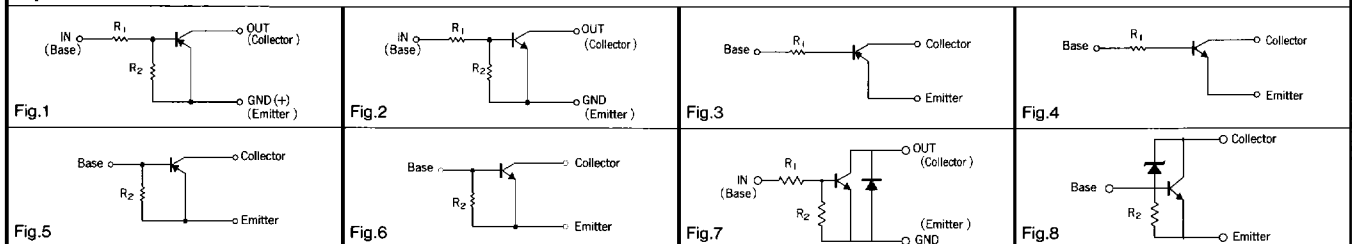
●For Semipower

Fig.7 Part No.	Resistance value		Vcc (V)	Ic (A)	Pd* (W)	Gi	Vo (V)	Io (A)	Package
	R1 (Ω)	R2 (kΩ)							
DTDM12ZP	100	1	30	3	1.5	68~	2	0.5	MPT

Fig.8 Part No.	BE Resistance R2 (kΩ)	VCE0 (V)	Ic (A)	Pd* (W)	hFE	VCE (V)	Ic (A)	Package

Note : *Characteristics of component transistors.

Equivalent circuit



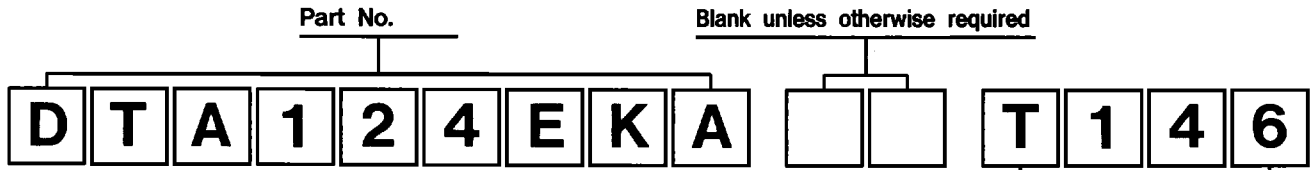
General designation



Digital Transistors

● Product Designation

Specify part No., package specification code and h_{FE} ranking code.



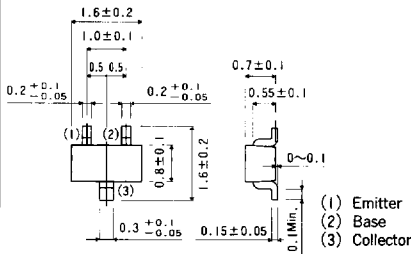
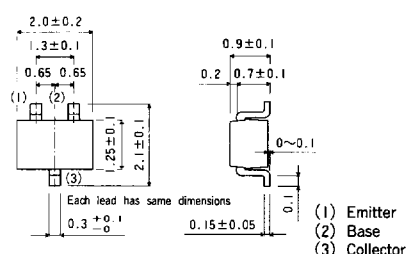
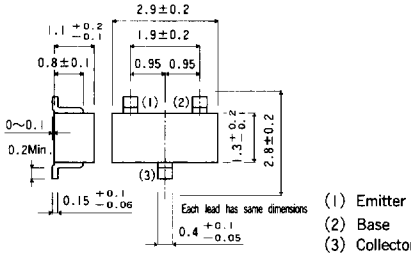



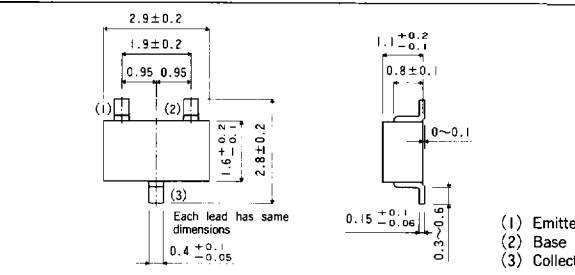
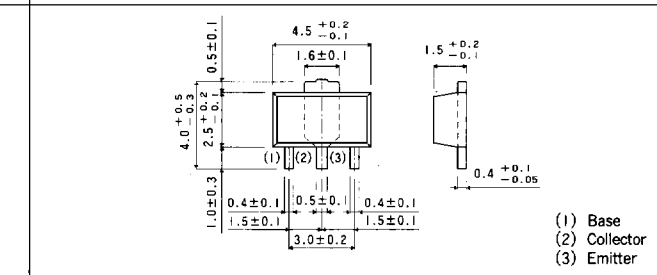

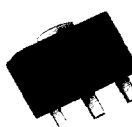
Package code

Package	EM3	UMT	SST	SMT	MPT
Code	E	U	C	K	P

Packaging specification code

Package	EM3	UMT	SST	SMT	MPT
Code	TL	T106	T116	T146	T100
	TR	T107	T117	T147	T101

(Unit : mm)

Package	EM3	UMT	SST (U. S. /European SOT-23)
	Package code E	Package code U	Package code C
Dimensions	 <p>(1) Emitter (2) Base (3) Collector</p>	 <p>(1) Emitter (2) Base (3) Collector</p>	 <p>(1) Emitter (2) Base (3) Collector</p>
Actual size	-	-	-
Enlarged (×3.0)			
Package	SMT (SC-59/Japanese SOT-23)	MPT (SOT-89)	
	Package code K	Package code P	
Dimensions	 <p>(1) Emitter (2) Base (3) Collector</p>	 <p>(1) Base (2) Collector (3) Emitter</p>	
Actual size	-	-	
Enlarged (×3.0)			

●Packaging

Package	Packaging type	Packaging style	Direction	Code	Quantity/Package (pcs)	Quantity/Unit (pcs)
EM3	Taping	Embossed reel tape	Pin 1 side on sprocket hole side	TL	3,000	-
			Pin 2 side on sprocket hole side	TR		
UMT	Taping	Embossed reel tape	Pin 1 side on sprocket hole side	T106	3,000	-
			Pin 2 side on sprocket hole side	T107		
SST	Taping	Embossed reel tape	Pin 1 side on sprocket hole side	T116	3,000	-
			Pin 2 side on sprocket hole side	T117		
SMT	Taping	Embossed reel tape	Pin 1 side on sprocket hole side	T146	3,000	-
			Pin 2 side on sprocket hole side	T147		
MPT	Taping	Embossed reel tape	Pin 3 side on sprocket hole side	T100	1,000	-
			Fin on sprocket hole side	T101		

●Packaging Specifications

(Unit : mm)

Reel	Tape																																										
EM3 · UMT · SST · SMT																																											
	<table border="1"> <thead> <tr> <th>Package</th> <th>Code</th> <th>Package</th> <th>Code</th> <th colspan="3">Size</th> </tr> <tr> <th></th> <th></th> <th></th> <th></th> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>EM3</td> <td>TR</td> <td>EM3</td> <td>TL</td> <td>1.8±0.1</td> <td>1.8±0.1</td> <td>0.9±0.2</td> </tr> <tr> <td>UMT</td> <td>T107</td> <td>UMT</td> <td>T106</td> <td>2.2±0.1</td> <td>2.4±0.1</td> <td>1.15±0.1</td> </tr> <tr> <td>SST</td> <td>T117</td> <td>SST</td> <td>T116</td> <td>3.15±0.1</td> <td>2.85±0.1</td> <td>1.4±0.1</td> </tr> <tr> <td>SMT</td> <td>T147</td> <td>SMT</td> <td>T146</td> <td>3.1±0.1</td> <td>3.2±0.1</td> <td>1.35±0.1</td> </tr> </tbody> </table>	Package	Code	Package	Code	Size							A	B	C	EM3	TR	EM3	TL	1.8±0.1	1.8±0.1	0.9±0.2	UMT	T107	UMT	T106	2.2±0.1	2.4±0.1	1.15±0.1	SST	T117	SST	T116	3.15±0.1	2.85±0.1	1.4±0.1	SMT	T147	SMT	T146	3.1±0.1	3.2±0.1	1.35±0.1
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