

# 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

Package code

EM3 of 100mA version has no suffix "A".  
DTA123E of UMT package should be denoted as DTA123EUA.  
See table right for package code.

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

## EM3 · UMT · SST · SMT

### ● 100mA Specifications

PNP Type Fig.1 Part No.	NPN Type Fig.2 Part No.	Resistance value		Package				V <sub>CC</sub> (V)	I <sub>O</sub> (mA)	G <sub>I</sub>	V <sub>O</sub> (V)	I <sub>O</sub> (mA)
		R <sub>1</sub> (kΩ)	R <sub>2</sub> (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 Part No.	NPN Type Fig.4 Part No.	Resistance value R <sub>1</sub> (kΩ)	Package				V <sub>CE0</sub> (V)	I <sub>C</sub> (mA)	Min.	Typ.	Max.	h <sub>FE</sub>	
			EM3* Pd=150mW	UMT* Pd=200mW	SST Pd=200mW	SMT						V <sub>CE</sub> (V)	I <sub>C</sub> (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 Part No.	NPN Type Fig.6 Part No.	B-E Resistance R <sub>2</sub> (kΩ)	Package				V <sub>CE0</sub> (V)	I <sub>C</sub> (mA)	Min.	h <sub>FE</sub>		
			EM3* Pd=150mW	UMT* Pd=200mW	SST Pd=200mW	SMT				V <sub>CE</sub> (V)	I <sub>C</sub> (mA)	I <sub>C</sub> (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 Part No.	NPN Type Fig.6 Part No.	Resistance value		Package				V <sub>CC</sub> (V)	I <sub>O</sub> (mA)	G <sub>I</sub>	V <sub>O</sub> (V)	I <sub>O</sub> (mA)	V <sub>O</sub> (on) (V)		
		R <sub>1</sub> (kΩ)	R <sub>2</sub> (kΩ)	EM3* Pd=150mW	UMT* Pd=200mW	SST Pd=200mW	SMT						I <sub>O</sub> (mA)	I <sub>I</sub> (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	

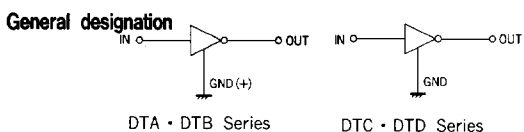
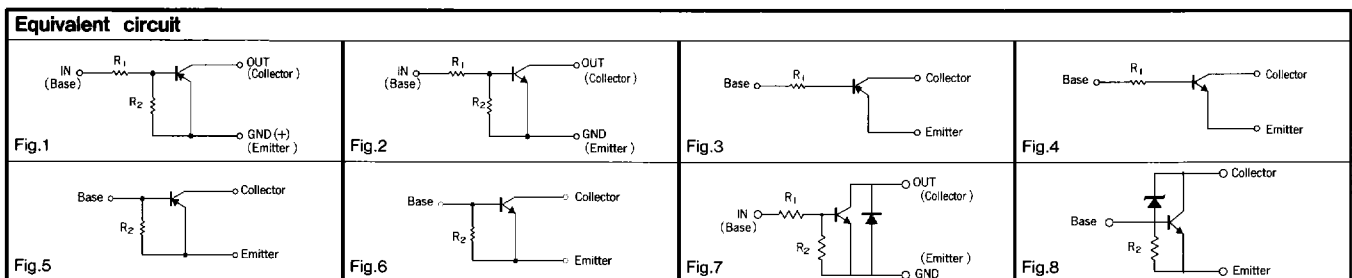
Note : \*Characteristics of component transistors.

●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.



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Lead pattern

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The Class and Basic ordering units for Standard and Semi-standard Products Units

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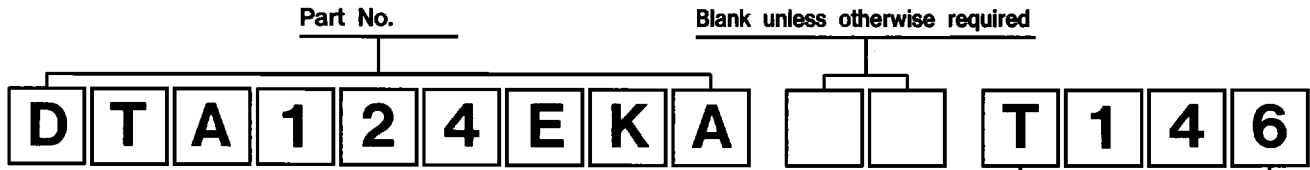
Part Marking

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# Digital Transistors

## ●Product Designation

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



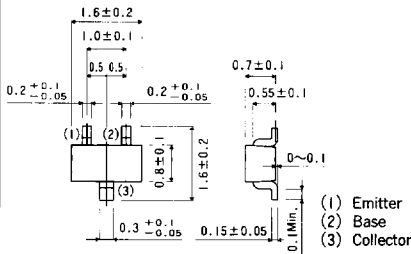
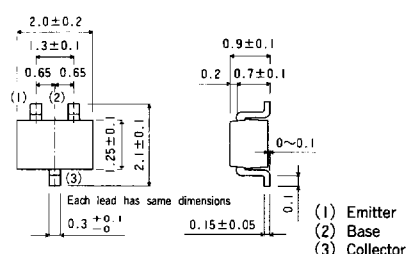
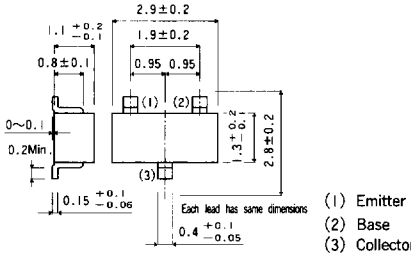



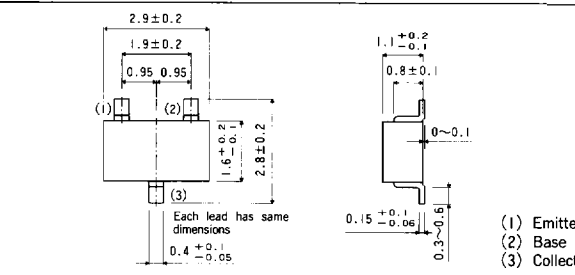
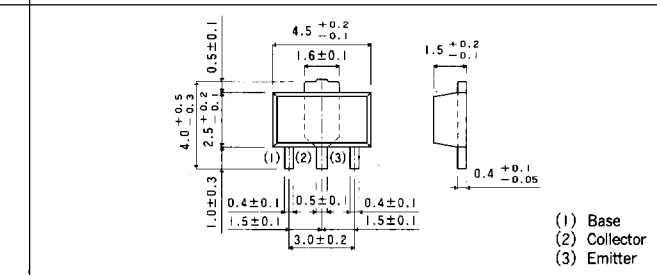

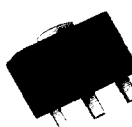
### Package code

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> </tr> </thead> <tbody> <tr> <td>EM3</td> <td>TR</td> </tr> <tr> <td>UMT</td> <td>T107</td> </tr> <tr> <td>SST</td> <td>T117</td> </tr> <tr> <td>SMT</td> <td>T147</td> </tr> </tbody> </table>	Package	Code	EM3	TR	UMT	T107	SST	T117	SMT	T147	<table border="1"> <thead> <tr> <th>Package</th> <th>Code</th> </tr> </thead> <tbody> <tr> <td>EM3</td> <td>TL</td> </tr> <tr> <td>UMT</td> <td>T106</td> </tr> <tr> <td>SST</td> <td>T116</td> </tr> <tr> <td>SMT</td> <td>T146</td> </tr> </tbody> </table>	Package	Code	EM3	TL	UMT	T106	SST	T116	SMT	T146			
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