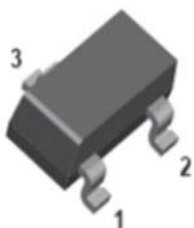
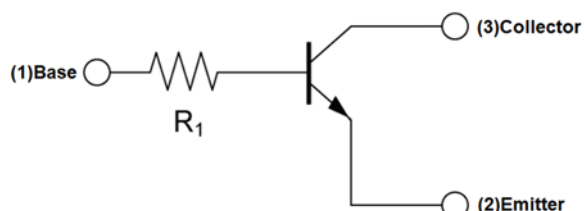


NPN Digital Transistors (Built-in Resistors)



SOT-23-3L



Features

- Moisture sensitivity level 1
- Halogen free and RoHS compliant
- Surface mount package ideally suited for automatic insertion

Application

- Signal amplification
- Switching circuit

Mechanical data

- **Package:** SOT-23-3L
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102

■ Maximum Ratings ($T_a=25^{\circ}\text{C}$ Unless otherwise specified)

Item	Symbol	Unit	Value
Device marking code			06
Collector-base voltage	V_{CBO}	V	50
Collector-emitter voltage	V_{CEO}	V	50
Emitter-base voltage	V_{EBO}	V	5
Collector current	I_C	mA	100
Power dissipation	P_D	mW	200
Operation junction temperature	T_J	$^{\circ}\text{C}$	-55 to +150
Storage temperature	T_{STG}	$^{\circ}\text{C}$	-55 to +150



DTC144TKA

RoHS
COMPLIANT

■ Electrical Characteristics (T_a=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base voltage	V _{CBO}	V	I _C =50uA	50		
Collector-emitter voltage	V _{CEO}	V	I _C =1mA	50		
Emitter-base voltage	V _{EBO}	V	I _E =50uA	5		
Collector-base cut-off current	I _{CBO}	uA	V _{CB} =50V			0.5
Emitter-base cut-off current	I _{EBO}	uA	V _{EB} =4V			0.5
DC current gain	h _{FE}		V _{CE} =5V, I _C =1mA	100		600
Input resistance	R _i	kΩ		33	47	61
Collector-emitter saturation voltage	V _{CE(sat)}	V	I _C =5mA, I _B =0.5mA			0.3
Transition frequency	f _T	MHz	V _{CE} =10V, I _E =5mA, f=100MHz		250	

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R _{θJ-A} ⁽¹⁾	°C/W	625
Thermal resistance, junction-to-case	R _{θJ-C} ⁽¹⁾	°C/W	500

Note:

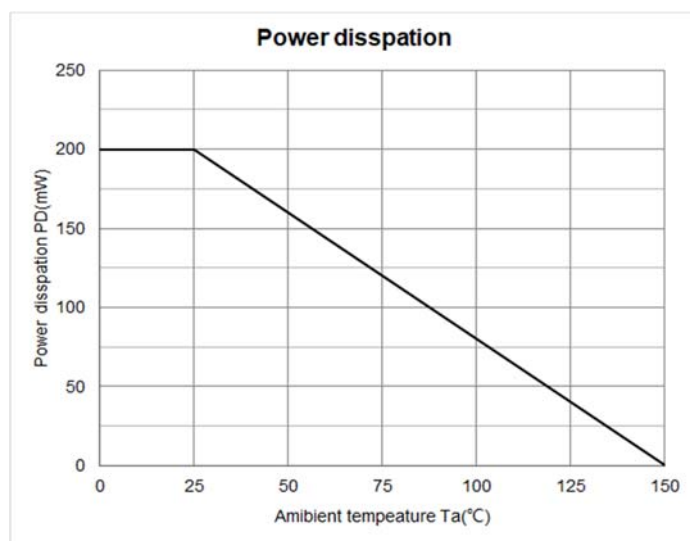
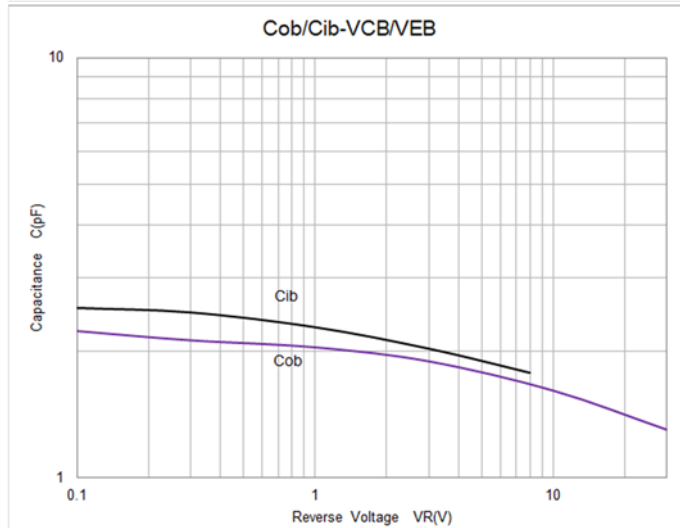
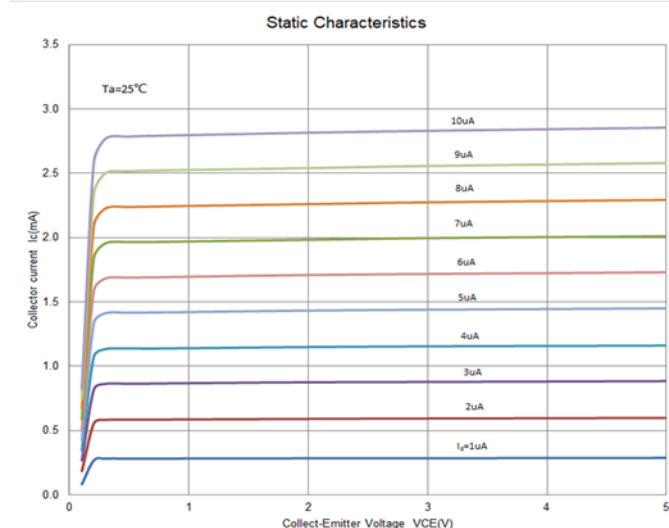
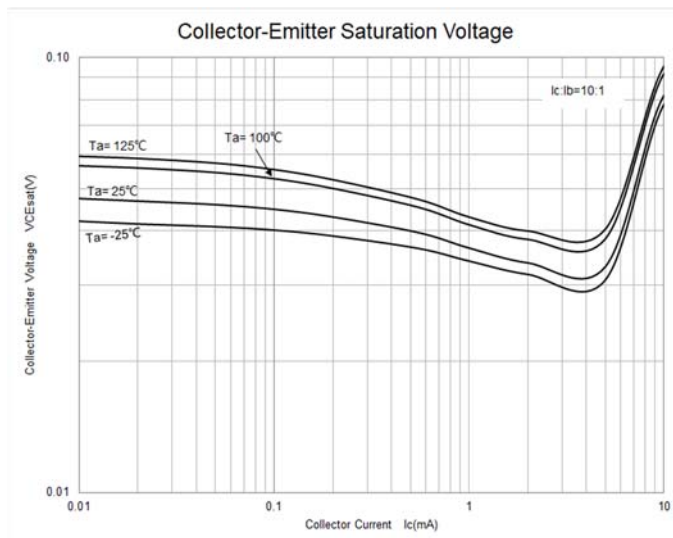
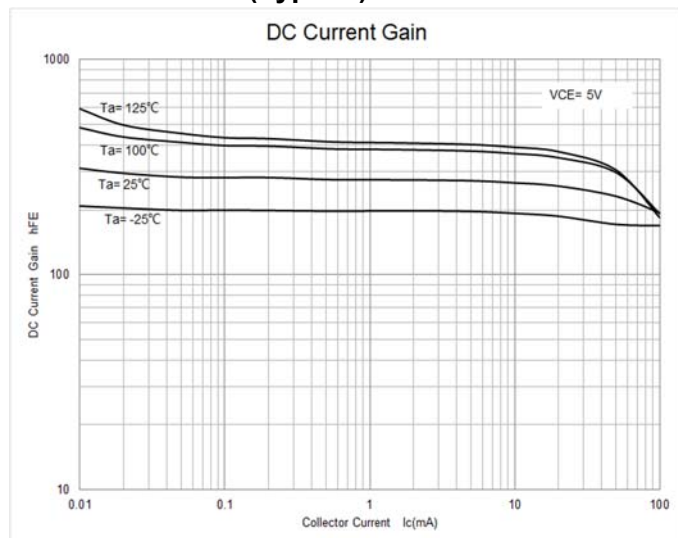
(1) Device mounted on PCB, single-sided copper, with standard footprint

■ Ordering Information

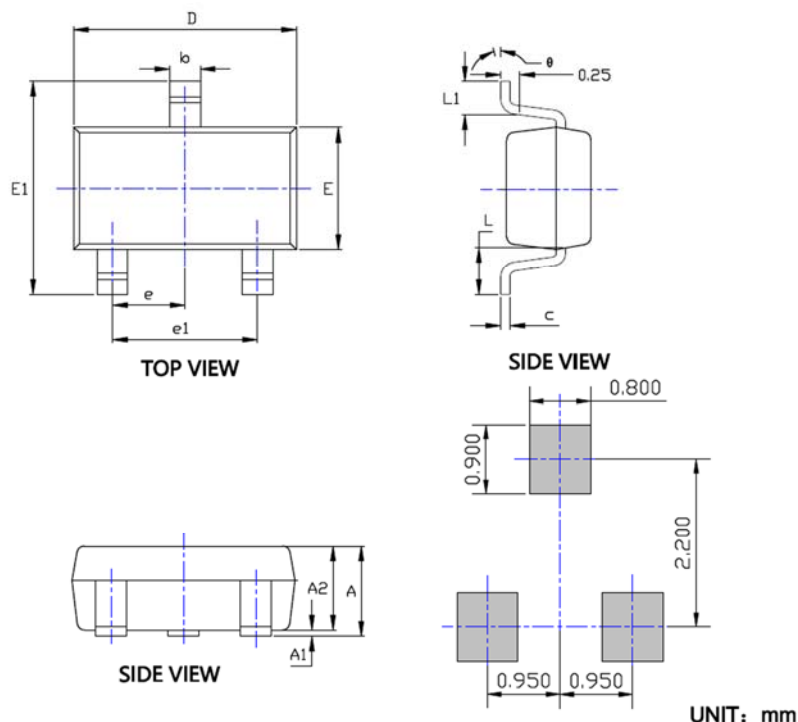
Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
DTC144TKA	F2	Approximate 0.014	3000	30000	120000	7" reel



■ Characteristics (Typical)



■ SOT-23-3L Package Outline Dimensions



SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.041	0.049	1.050	1.250
A1	0.000	0.008	0.000	0.200
A2	0.041	0.045	1.050	1.150
b	0.012	0.020	0.300	0.500
c	0.004	0.008	0.100	0.200
D	0.111	0.119	2.820	3.020
E	0.059	0.067	1.500	1.700
E1	0.104	0.116	2.650	2.950
e	0.037 TYP		0.950 TYP	
e1	0.071	0.079	1.800	2.000
L	0.024 REF		0.600 REF	
L1	0.012	0.024	0.300	0.600
φ	0°	8°	0°	8°

NOTE:
 1. PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
 2. TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.
 3. THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.

Note:

- All dimensions are in millimeters (mm) unless otherwise specified.
[所有尺寸均以毫米为单位, 除非另有说明]
- General tolerances: $\pm 0.10\text{mm}$ unless otherwise specified.
[通用公差为 $\pm 0.10\text{mm}$, 除非另有说明]
- Dimensions and tolerances per ASME Y14.5M-2018.
[尺寸和公差遵循 ASME Y14.5M-2018 标准]
- All dimensions shown are exclusive of burrs and gate residues. Burrs and gate vestiges shall not exceed 0.15 mm in maximum.
[所有尺寸均不包括毛刺和浇口残留。毛刺与浇口残留的尺寸最大不得超过 0.15mm]
- Dimension b does not include dambar protrusion of max 0.100 mm per side.
[尺寸b不包括单边最大0.100 MM的中筋凸出部分]
- Dimensions D and E are the overall extreme outer dimensions of the mold compound. These dimensions exclude mold flash, lead flash, protrusions and burrs but include the maximum allowable mold mismatch.
[D和E是塑封体的外部极限尺寸, 不包括包封溢料、内引线溢料、凸出部分以及胶体毛刺, 但是包含了包封错位的最大尺寸]
- Formed leads shall be planar with respect to one another within a maximum of 0.076 mm relative to the seating plane.
[成型的管脚应为同一平面, 共面性最大为0.1mm]
- ★It is the key size.
[★ 标记为关键尺寸]



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