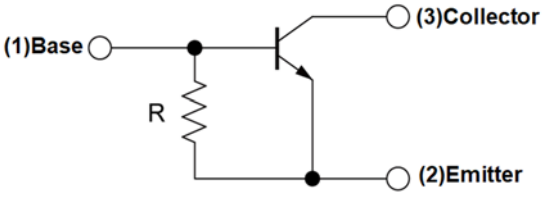
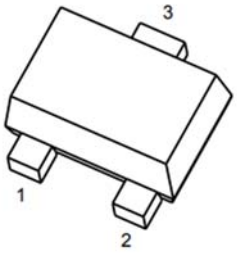
NPN Digital Transistors (Built-in Resistors)





SOT-723

Features

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

Application

- Signal amplification
- Switching circuit

Mechanical data

- **Package**: SOT-723
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102

■ **Maximum Ratings** (T_a=25℃ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Device marking code				03
Collector-base voltage	V_{CBO}	V	I_C =50uA,I_E=0	50
Collector-emitter voltage	V_{CEO}	V	I_C =1mA,I_B=0	50
Emitter-base voltage	V_{EBO}	V	I_E=50uA,I_C=0	5
Collector current	I_C	mA		100
Power dissipation	P_D	mW		100
Junction temperature	T_J	℃		-55 to +150
Storage temperature	T_{STG}	℃		-55 to +150

■ Electrical Characteristics (Ta=25℃ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	$V_{(BR)CBO}$	V	I_C=50uA,I_E=0	50		
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	V	I_C=1mA,I_B=0	50		
Emitter-base breakdown voltage	$V_{(BR)EBO}$	V	I_E=50uA,I_C=0	5		
Collector-base cutoff current	I_{CBO}	uA	V_{CB}=50V,I_E=0			0.5
Collector-emitter cutoff current	I_{EBO}	uA	V_{EB}=4V, I_C=0V			0.5
	h_{FE}		V_{CE}=5V, I_C=1mA	100		600
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	I_C=5mA,I_B=0.25mA			0.3
Input resistance	R_1	kΩ		3.29	4.7	6.11
Transition frequency	f_T	MHz	V_{CE}=10V,I_C=5mA,f=100MHz		250	

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	$R_{\theta J-A}$(1)	℃/W	1250
Thermal resistance, junction-to-case	$R_{\theta J-C}$(1)	℃/W	1000

Note: Thermal resistance from junction to ambient and from junction to case mounted on P.C.B. with 25.4mm*25.4mm copper pad areas

■Ordering Information

Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
DTC143TM	F2	Approximate 0.0013	8000	80000	320000	7" reel

■Characteristics

Fig 1：Static Characteristics

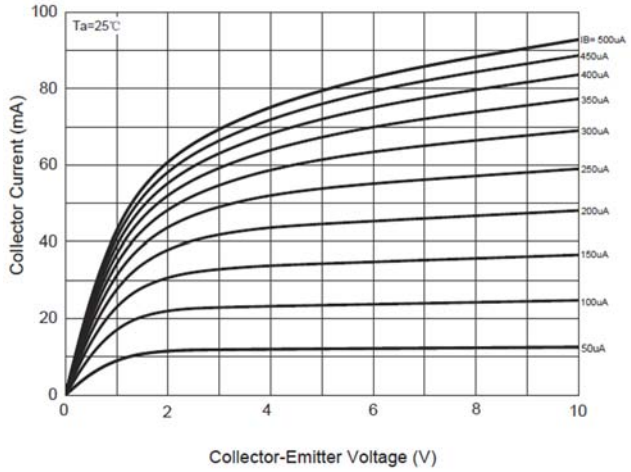


Fig 2：DC Current Gain Characteristics

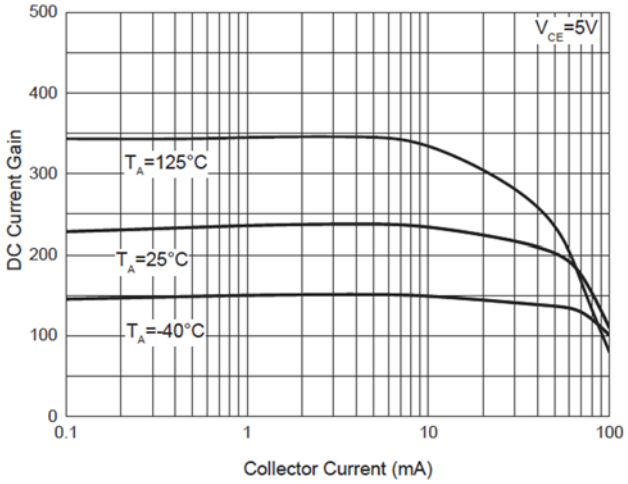


Fig 3：Collector-Emitter Saturation Voltage

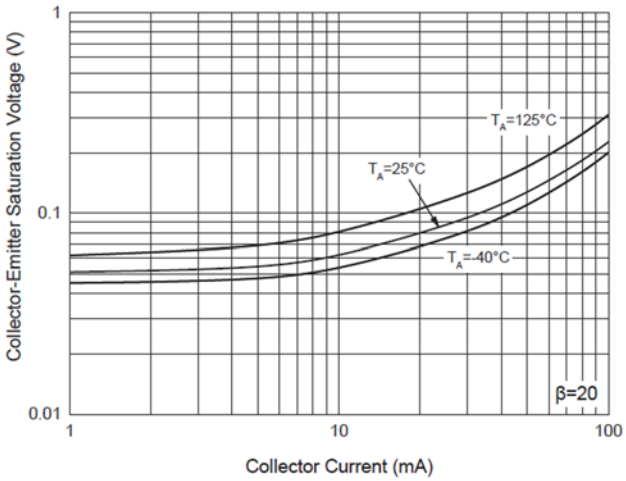


Fig 4：Base-Emitter Saturation Voltage

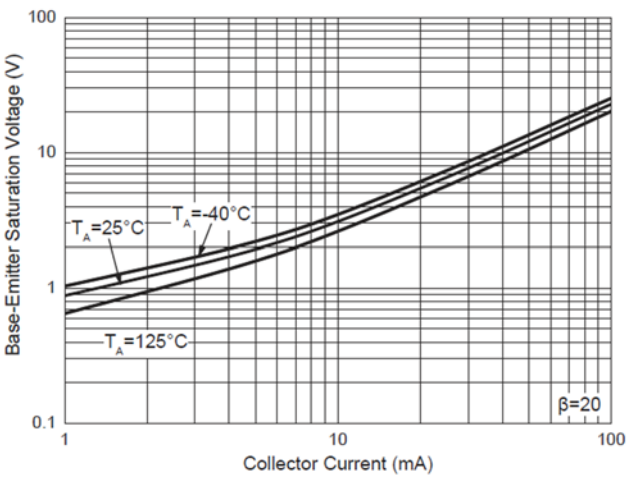


Fig 5：Base-Emitter Voltage

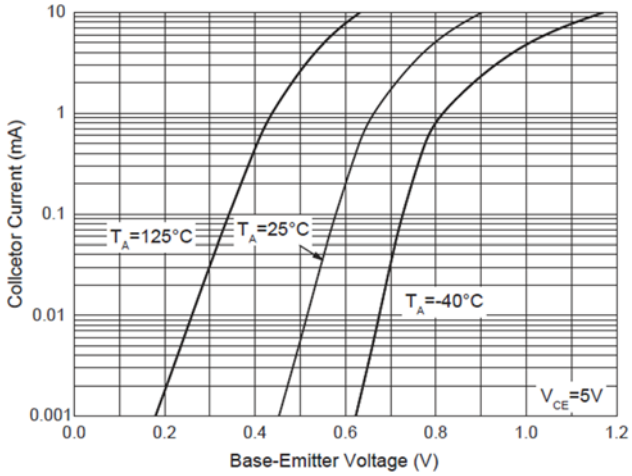
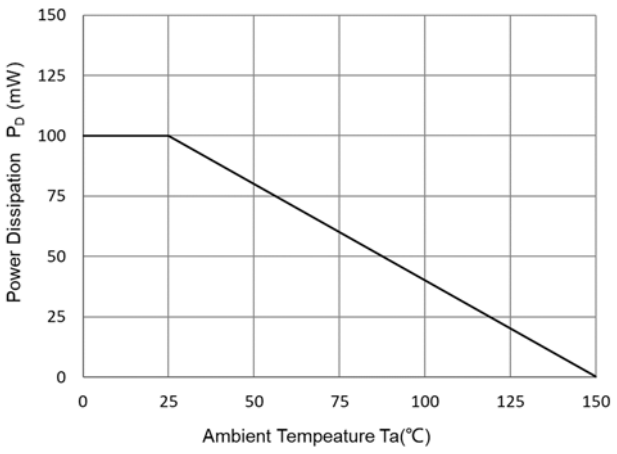
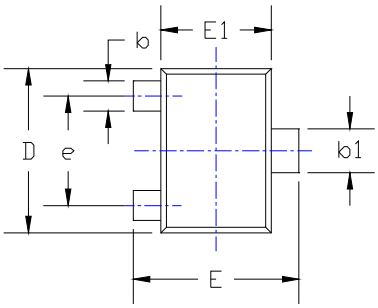


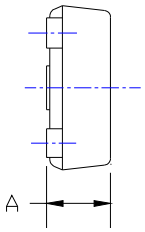
Fig 6：P_D-Ta Curve



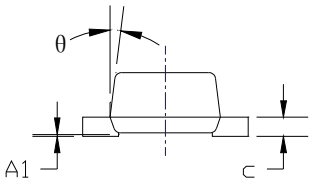
■ Outline Dimensions



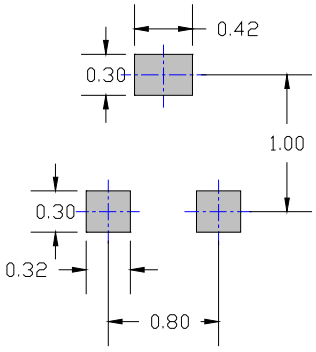
TOP VIEW



SIDE VIEW



SIDE VIEW



SUGGESTED SOLDER PAD LAYOUT

DIMENSIONS				
SYMBOL	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.017	0.022	0.430	0.550
A1	0.000	0.002	0.000	0.050
b	0.007	0.011	0.170	0.270
b1	0.011	0.015	0.270	0.370
c	0.003	0.008	0.080	0.200
D	0.045	0.049	1.150	1.250
E	0.045	0.049	1.150	1.250
E1	0.030	0.033	0.750	0.850
e	0.031TYP.		0.800TYP.	
θ	7°REF.		7°REF.	

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:
1. 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]
2. General tolerances: ±0.10mm unless otherwise specified.
[通用公差为±0.10mm，除非另有说明]
3. Dimensions and tolerances per ASME Y14.5M-2018.
[尺寸和公差遵循 ASME Y14.5M-2018 标准]
4.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]
5.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]
6.Dimensions D and E1are 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E1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]
7.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]
8. ★It is the key size.
[★ 标记为关键尺寸]

Notice

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