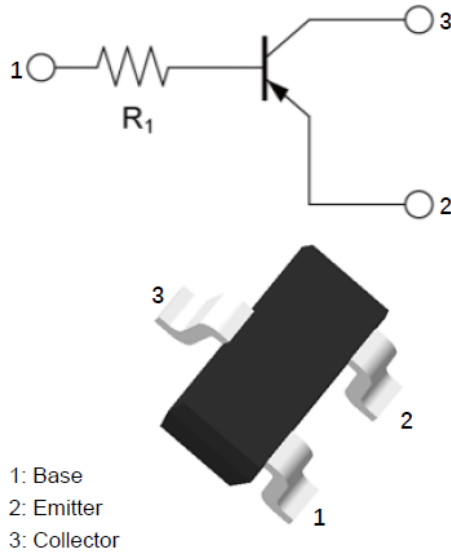


## PNP Digital Transistors (Built-in Resistors)



### 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-523
- **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	Conditions	Value
Device marking code				93
Collector-base voltage	$V_{CBO}$	V	$I_C=-50\mu\text{A}, I_E=0$	-50
Collector-emitter voltage	$V_{CEO}$	V	$I_C=-1\text{mA}, I_B=0$	-50
Emitter-base voltage	$V_{EBO}$	V	$I_E=-50\mu\text{A}, I_C=0$	-5
Collector current	$I_C$	mA		-100
Power dissipation	$P_D$	mW		150
Operation junction temperature	$T_J$	$^{\circ}\text{C}$		-55 to +150
Storage temperature	$T_{STG}$	$^{\circ}\text{C}$		-55 to +150



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### ■ Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	V	I <sub>C</sub> =-50μA, I <sub>E</sub> =0	-50		
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	V	I <sub>C</sub> =-1mA, I <sub>B</sub> =0	-50		
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	V	I <sub>E</sub> =-50μA, I <sub>C</sub> =0	-5		
Collector-base cut-off current	I <sub>CBO</sub>	uA	V <sub>CB</sub> =-50V			-0.5
Emitter-base cut-off current	I <sub>EBO</sub>	uA	V <sub>EB</sub> =-4V	-		-0.5
DC current gain	h <sub>FE</sub>		V <sub>CE</sub> =-5V, I <sub>C</sub> =-1mA	100		600
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	V	I <sub>C</sub> =-5mA, I <sub>B</sub> =-0.25mA			-0.3
Input resistance	R <sub>i</sub>	kΩ		3.3	4.7	6.1
Transition frequency	f <sub>T</sub>	MHz	V <sub>CE</sub> =-10V, I <sub>C</sub> =-5mA		250	

### ■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R <sub>θJ-A</sub> <sup>(1)</sup>	°C/W	833
Thermal resistance, junction-to-case	R <sub>θJ-C</sub> <sup>(1)</sup>	°C/W	666

Note:

(1) 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

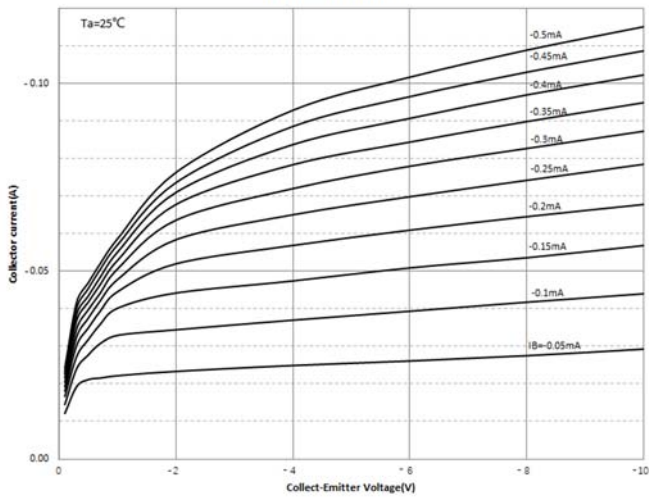
Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
DTA143TE	F2	Approximate 0.0027	3000	30000	120000	7" reel



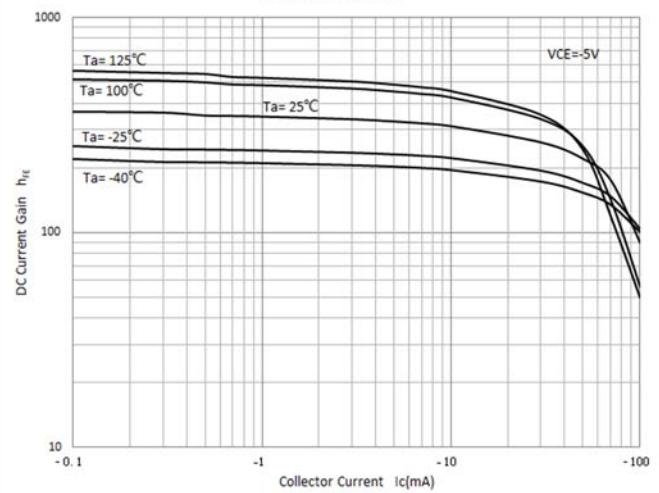
# DTA143TE

## ■ Characteristics

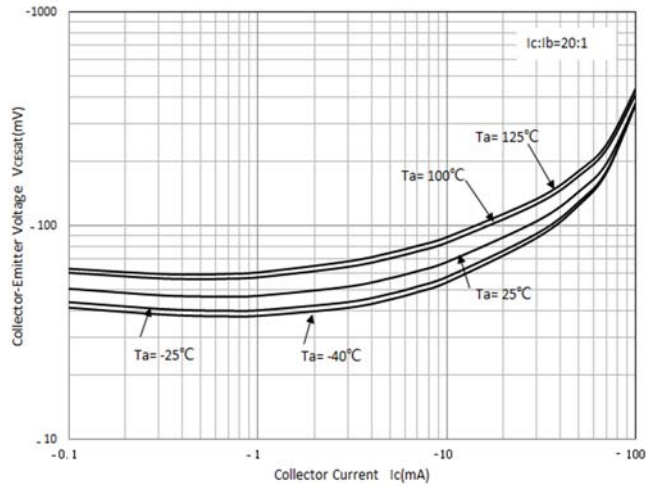
Static Characteristics



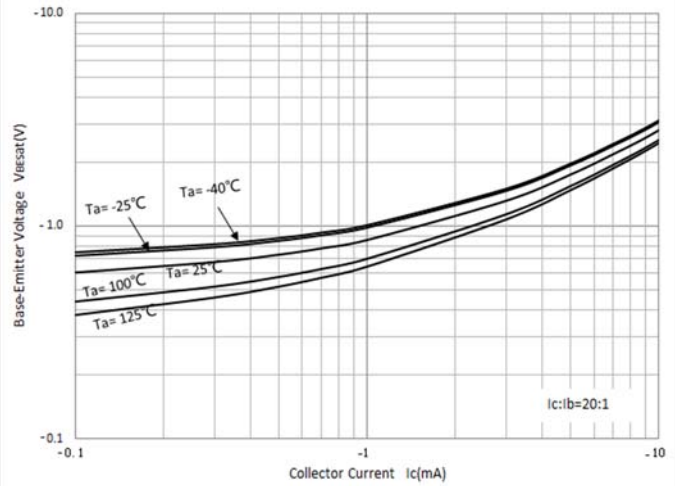
DC Current Gain



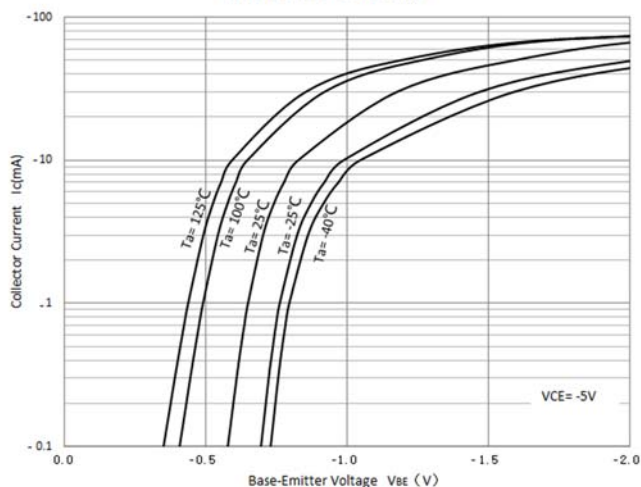
Collector-Emitter Saturation Voltage



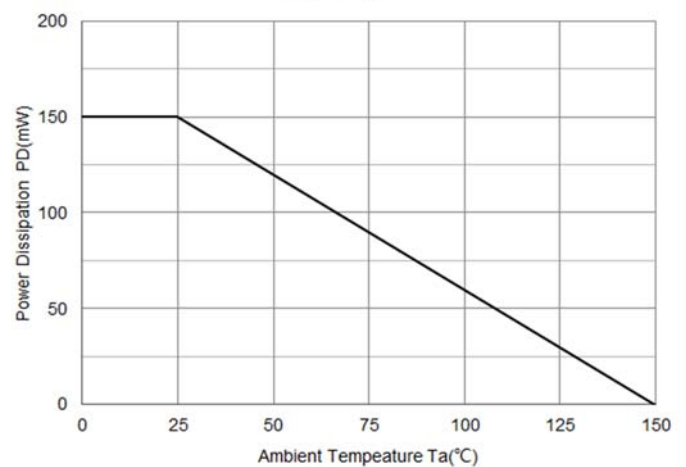
Base-Emitter Saturation Voltage



Base-Emitter On Voltage



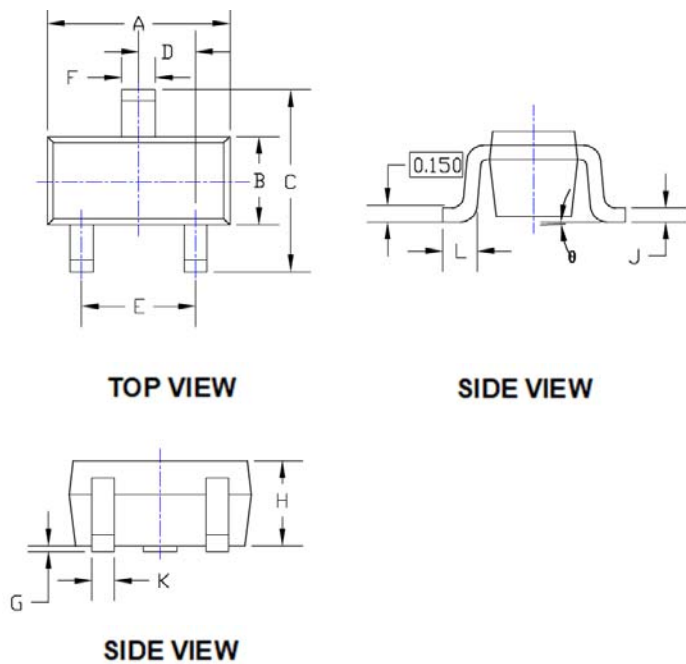
$P_D$ ----- $T_A$





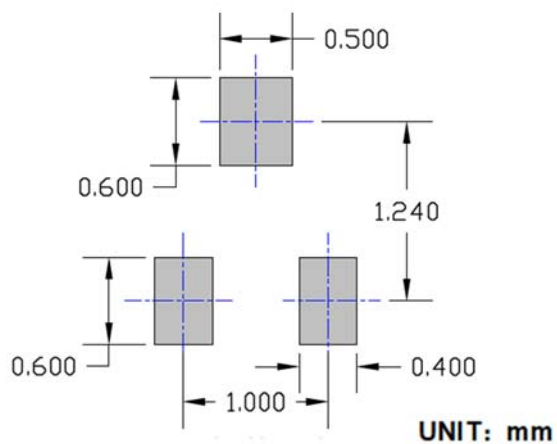
## DTA143TE

### ■ Outline Dimensions



SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.059	0.067	1.500	1.700
B	0.030	0.033	0.750	0.850
C	0.057	0.069	1.450	1.750
D	0.020TYP		0.500TYP	
E	0.035	0.043	0.900	1.100
F	0.010	0.018	0.250	0.450
G	0.000	0.004	0.000	0.100
H	0.024	0.031	0.600	0.800
J	0.004	0.008	0.100	0.200
K	0.006	0.014	0.150	0.350
L	0.010	0.018	0.260	0.460
$\theta$	0°	8°	0°	8°

### ■ Suggested Pad Layout





## DTA143TE

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