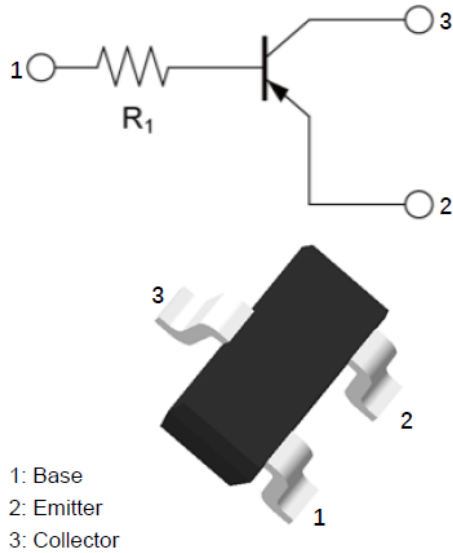


PNP Digital Transistors (Built-in Resistors)



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				94
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_a=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	V _{(BR)CBO}	V	I _C =-50μA, 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 =-50μA, I _C =0	-5		
Collector-base cut-off current	I _{CBO}	μA	V _{CB} =-50V			-0.5
Emitter-base cut-off current	I _{EBO}	μA	V _{EB} =-4V	-		-0.5
DC current gain	h _{FE}		V _{CE} =-5V, I _C =-1mA	100		600
Collector-emitter saturation voltage	V _{CE(sat)}	V	I _C =-10mA, I _B =-1mA			-0.3
Input resistance	R ₁	kΩ		7	10	13
Transition frequency	f _T	MHz	V _{CE} =-10V, I _C =-5mA		250	

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R _{θJ-A} ⁽¹⁾	°C/W	833
Thermal resistance, junction-to-case	R _{θJ-C} ⁽¹⁾	°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



■ Characteristics

Fig 1: Static Characteristics

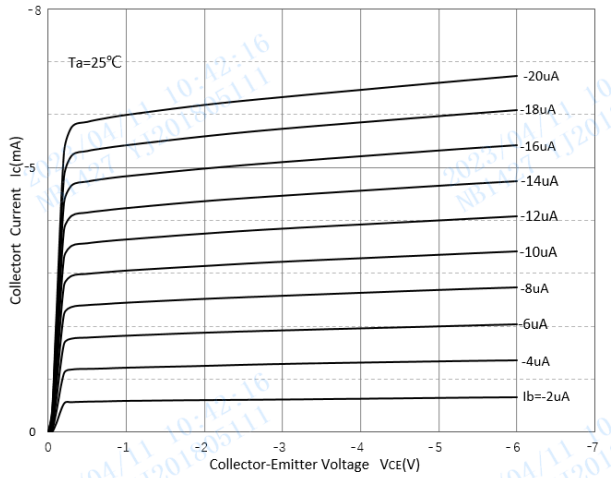


Fig 2: DC Current Gain

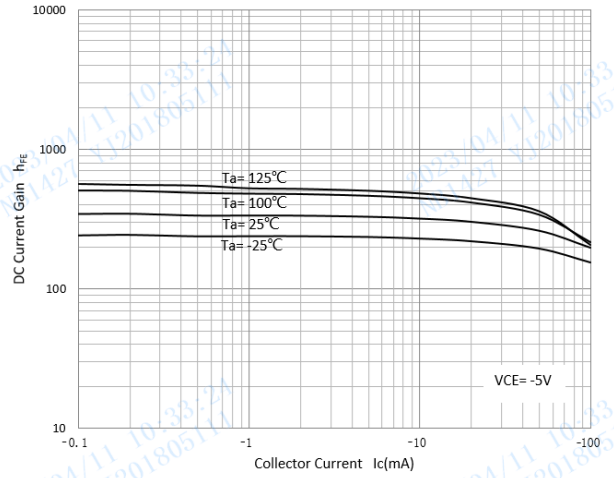


Fig 3: Collector-Emitter Saturation Voltage

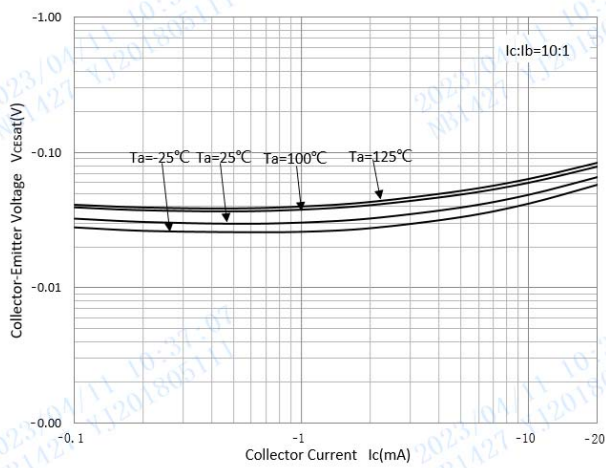


Fig 4: Base-Emitter Saturation Voltage

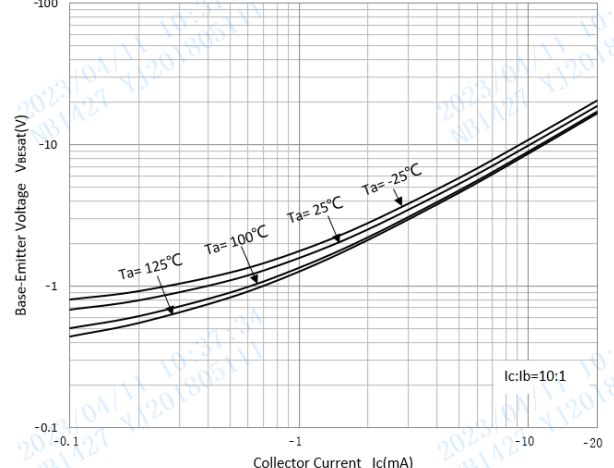


Fig 5: Base-Emitter On Voltage

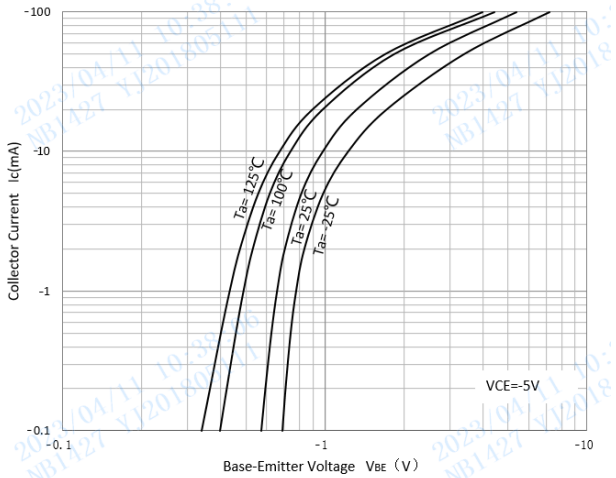


Fig 6: Cob/Cib-VCB/VEB

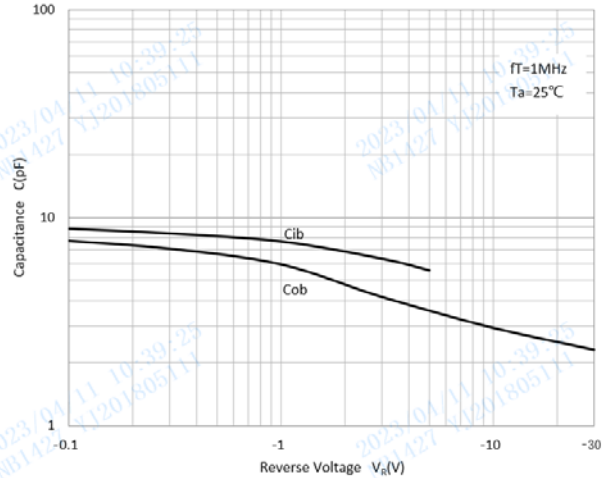
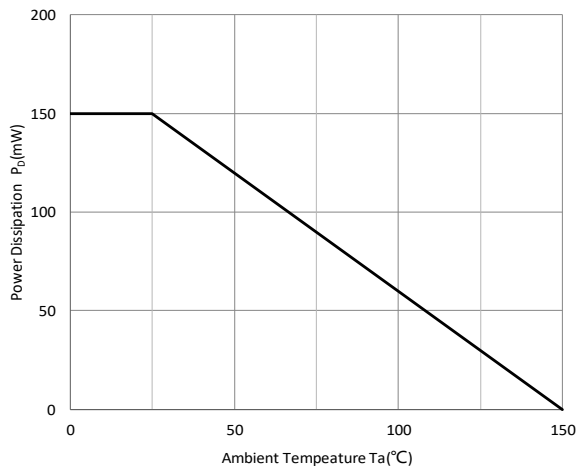




Fig 5: P_D-T_a Curve





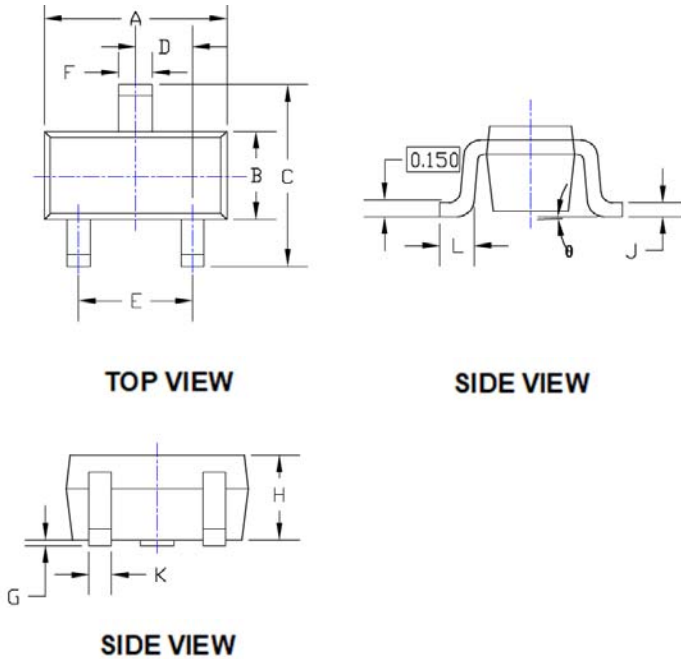
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■ Ordering Information

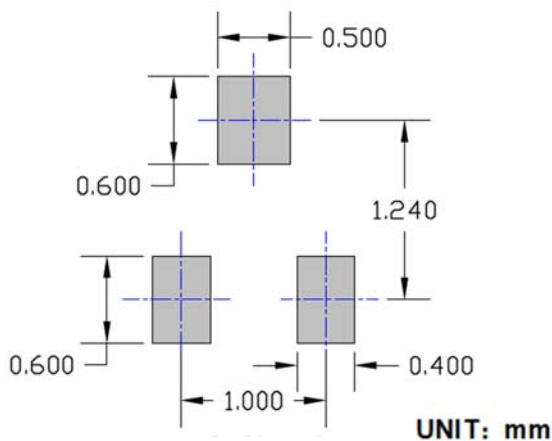
Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
DTA114TE	F2	Approximate 0.0027	3000	30000	120000	7" reel

■ 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
θ	0°	8°	0°	8°

■ Suggested Pad Layout



**DTA114TE****Disclaimer**

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