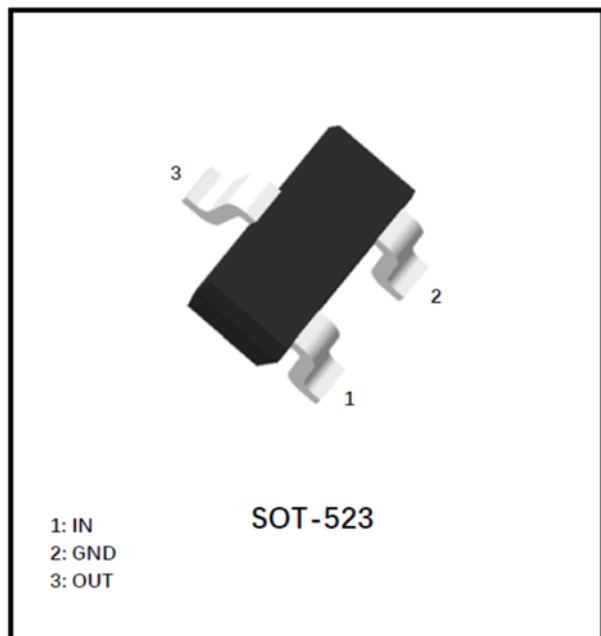


NPN Digital Transistors (Built-in Resistors)



Features

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

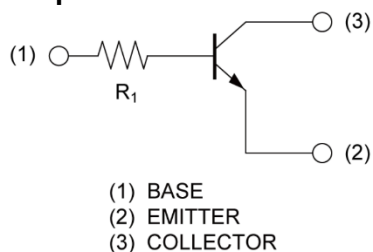
Application

- Signal amplification
- Switching circuit

Mechanical data

- **Package:** SOT-523
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102

■Equivalent circuit



■ Maximum Ratings (Ta=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Device Marking Code				N16
Collector-Base Voltage	V_{CBO}	V		50
Collector-Emitter Voltage	V_{CEO}	V		50
Emitter-Base Voltage	V_{EBO}	V		5
Output Current	I_O	mA		100
Power Dissipation	P_D	mW		150
Junction Temperature	T_J	°C		-55 to +150
Storage Temperature	T_{STG}	°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 _{CBO}	V	I _C =1mA	50		
Collector-Emitter Breakdown Voltage	V _{CEO}	V	I _C =1mA	50		
Emitter-Base Breakdown Voltage	V _{EBO}	V	I _E =50uA	5		
Collector Cut-off Current	I _{CBO}	uA	V _{CB} =50V			0.5
Emitter 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		15.4	22	28.6
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	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

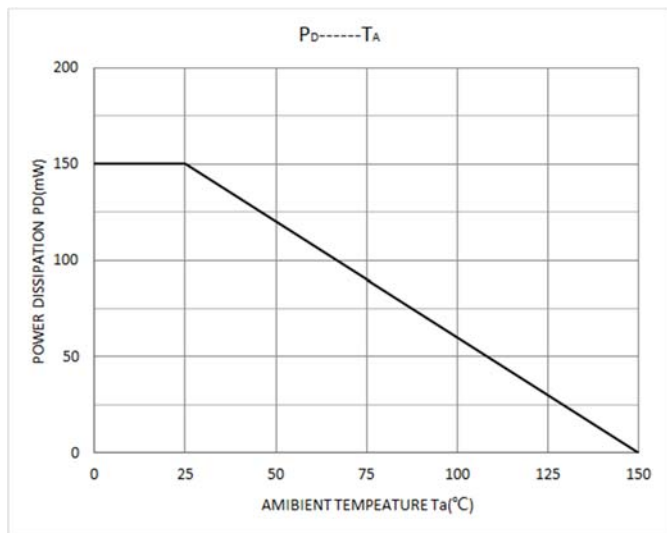
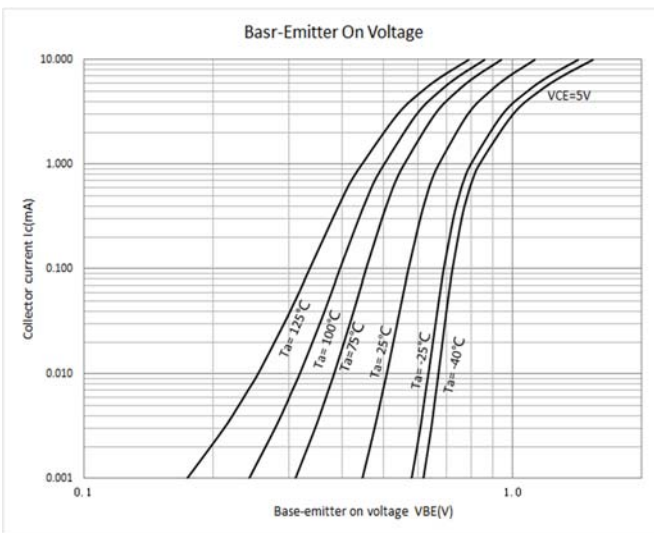
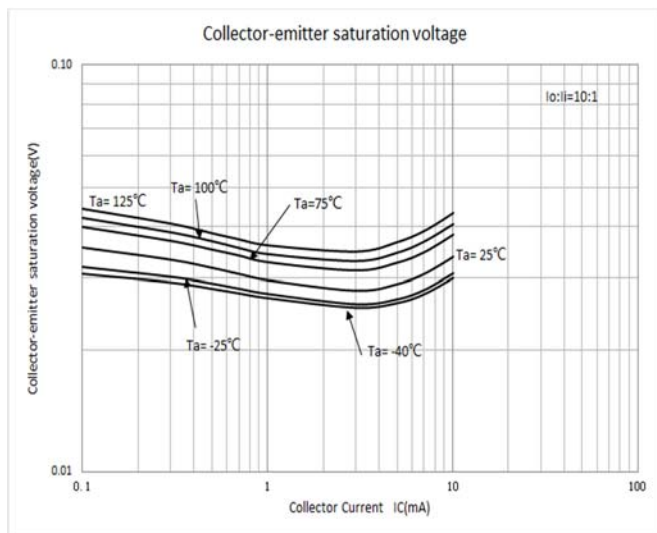
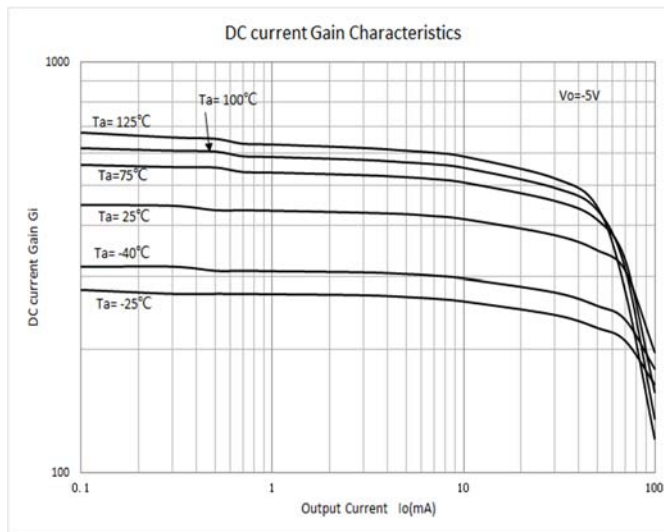
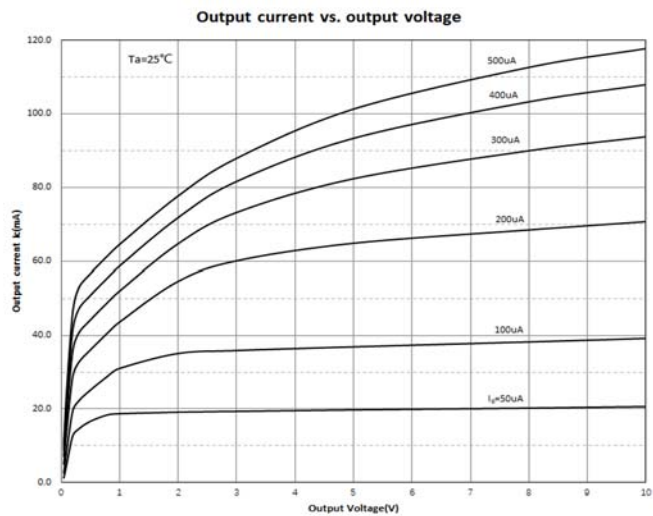
■ Ordering Information

Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
DTC124TE	F2	Approximate 0.0027	3000	30000	120000	7" reel



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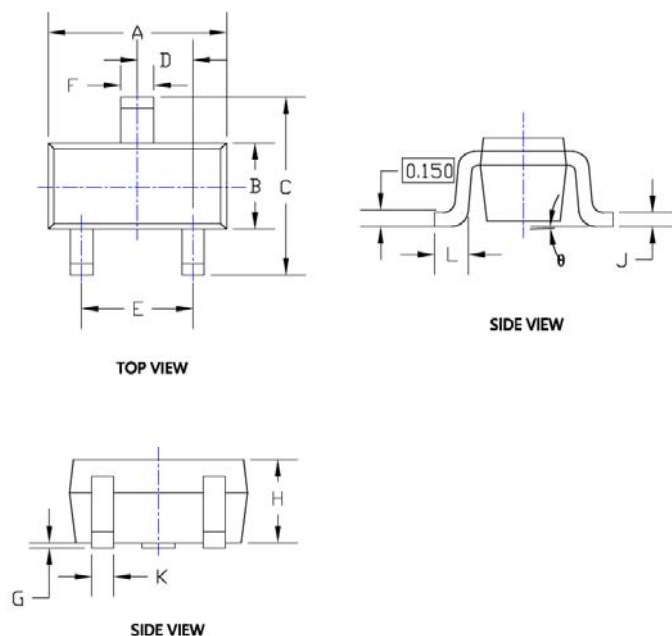
■ Characteristics(Typical)





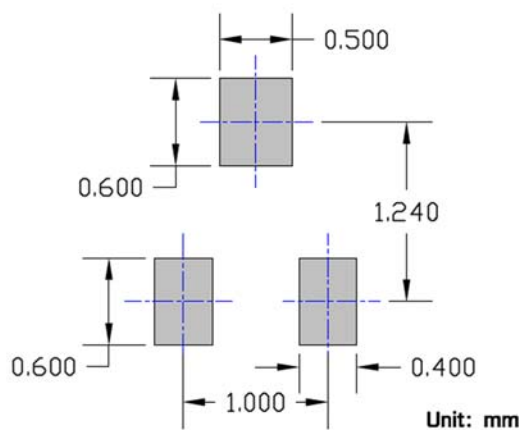
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■ Outline Dimensions



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





DTC124TE

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