

Features

- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings @ 25°C Unless Otherwise Specified

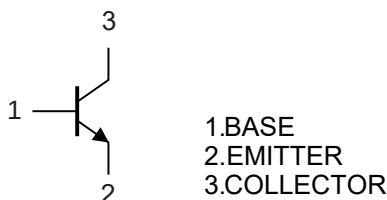
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 417°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CEO}	25	V
Emitter-Base Voltage	V_{EBO}	5	V
Continuous Collector Current	I_C	500	mA
Power Dissipation	P_D	300	mW

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

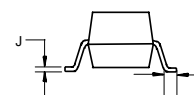
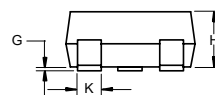
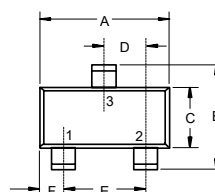
Marking: J3

Internal Structure



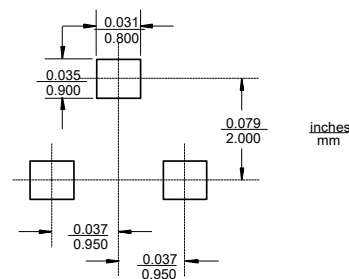
NPN Silicon Plastic-Encapsulate Transistor

SOT-23



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.110	0.120	2.80	3.04	
B	0.083	0.104	2.10	2.64	
C	0.047	0.055	1.20	1.40	
D	0.034	0.041	0.85	1.05	
E	0.067	0.083	1.70	2.10	
F	0.018	0.024	0.45	0.60	
G	0.0004	0.006	0.01	0.15	
H	0.035	0.043	0.90	1.10	
J	0.003	0.007	0.08	0.18	
K	0.012	0.020	0.30	0.51	
L	0.007	0.020	0.20	0.50	

Suggested Solder Pad Layout



Electrical Characteristics @ T_A=25°C Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	V _{(BR)CBO}	40			V	I _C =100μA, I _E =0
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	25			V	I _C =1mA, I _B =0
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	5			V	I _E =100μA, I _C =0
Collector-Base Cutoff Current	I _{CBO}			0.1	μA	V _{CB} =40V, I _E =0
Collector Cutoff Current	I _{CEO}			0.1	μA	V _{CE} =20V, I _B =0
Emitter-Base Cutoff Current	I _{EBO}			0.1	μA	V _{EB} =5V, I _C =0
DC Current Gain	h _{FE(1)}	120		350		V _{CE} =1V, I _C =50mA
	h _{FE(2)}	40				V _{CE} =1V, I _C =500mA
Collector-Emitter Saturation Voltage	V _{CE(sat)}			0.6	V	I _C =500mA, I _B =50mA
Base-Emitter Saturation Voltage	V _{BE(sat)}			1.2	V	I _C =500mA, I _B =50mA
Base-Emitter Voltage	V _{BE}			1.4	V	I _E =100mA
Transition Frequency	f _T	150			MHz	V _{CE} =6V, I _C =20mA, f=30MHz

Classification of h_{FE(1)}

Rank	L	H
Range	120-200	200-350

Curve Characteristics

Fig. 1 - Static Characteristics

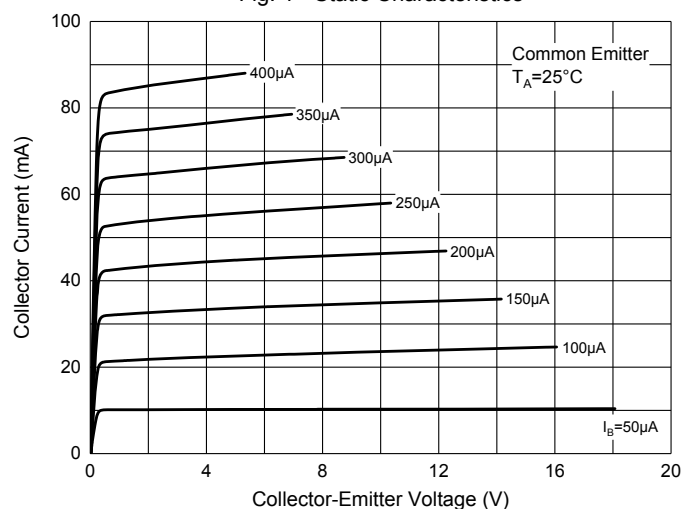


Fig. 2 - DC Current Gain Characteristics

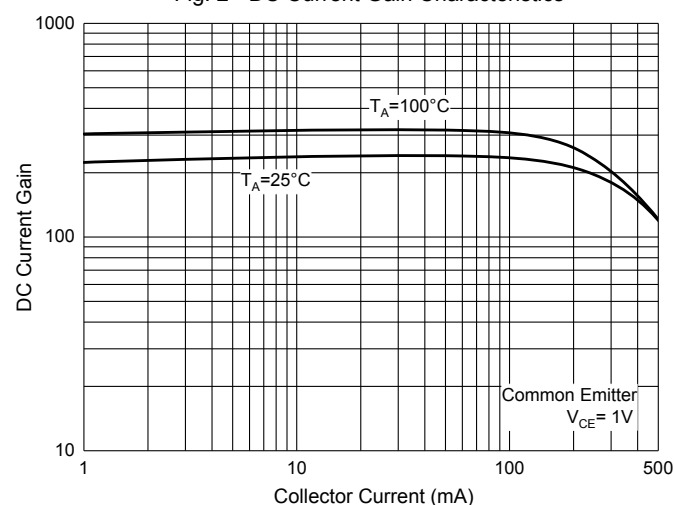


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

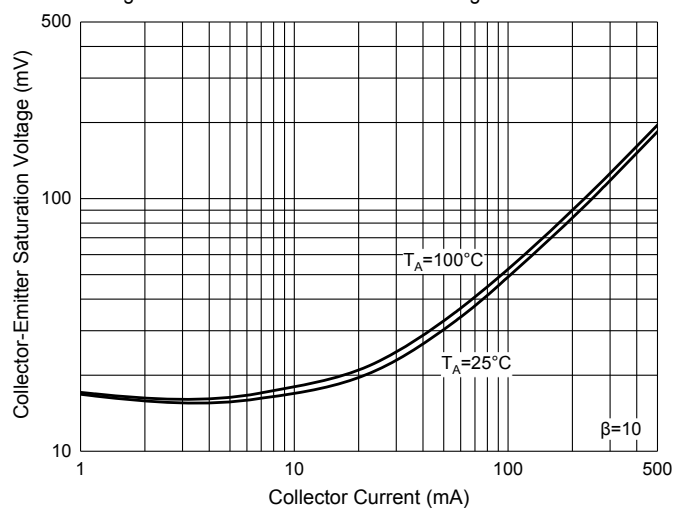


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

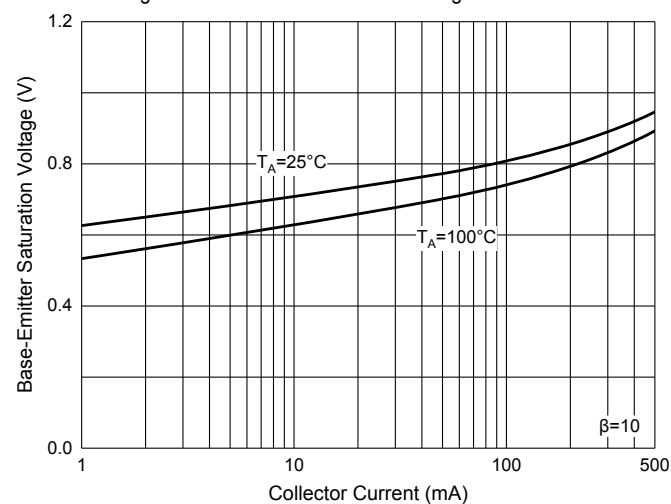


Fig. 5 - Base-Emitter Voltage Characteristics

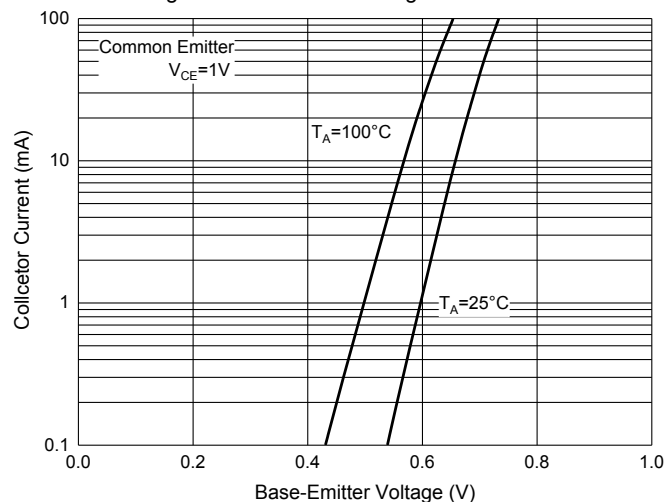
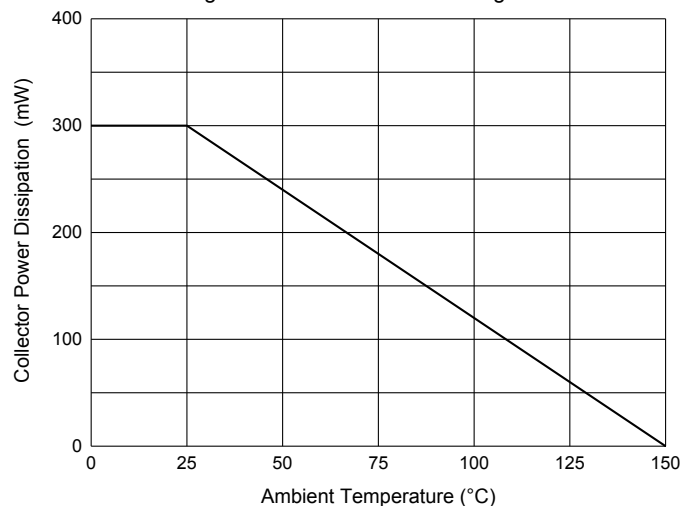


Fig. 6 - Collector Power Derating Curve



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

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