

Features

- Halogen Free. "Green" Device^(Note1)
- AEC-Q101 Qualified
- 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)

**NPN
Plastic-Encapsulate
Transistors**

Maximum Ratings @ 25°C Unless Otherwise Specified

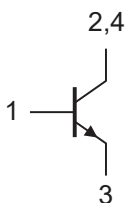
Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V _{CBO}	100	V
Collector-Emitter Voltage	V _{CEO}	80	V
Emitter-Base Voltage	V _{EBO}	5	V
Collector Current	I _C	1	A
Power Dissipation	P _D	1.5	W

Thermal characteristics

Parameter	Symbol	Rating	Unit
Junction Temperature Range	T _J	-55~+150	°C
Storage Temperature Range	T _{STG}	-55~+150	°C
Thermal Resistance from Junction to Ambient ^(Note2)	R _{th(J-A)}	83.3	°C/W
Thermal Resistance from Junction to Solder Point ^(Note2)	R _{th(J-SP)}	16	°C/W
Thermal Resistance from Junction to Case ^(Note3)	R _{th(J-C)}	58.7	°C/W
Thermal Resistance from Junction to Solder Point ^(Note3)	R _{th(J-SP)}	27.4	°C/W

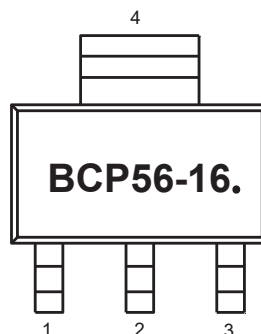
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 2. Device mounted on FR-4 PCB 1.575 x 1.575 x 0.0625 inch; mounting pad for collector = 0.93 sq in
 3. Device mounted on FR-4 PCB 1.0 x 1.0 x 0.0625 inch; and standard footprint.

Internal Structure

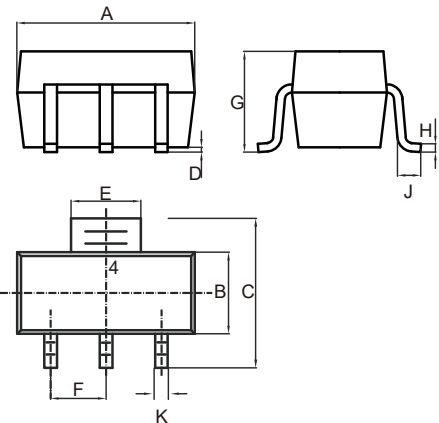


1.Base
2,4.Collector
3.Emitter

Marking Code



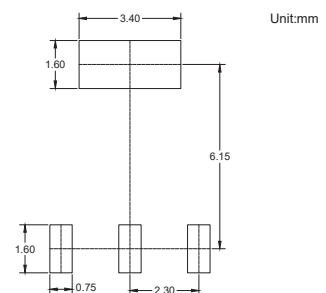
SOT-223



DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.248	0.264	6.30	6.70	
B	0.130	0.146	3.30	3.70	
C	0.264	0.287	6.70	7.30	
D	0.001	0.004	0.02	0.10	
E	0.114	0.122	2.90	3.10	
F	0.091		2.30		TYP.
G	---	0.071	---	1.80	
H	0.009	0.014	0.23	0.35	
J	0.030	---	0.75	---	
K	0.026	0.033	0.66	0.84	

Suggested Solder Pad Layout



Electrical Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	100			V	$I_C=100\mu A, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	80			V	$I_C=10mA, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	$I_E=10\mu A, I_C=0$
Collector-Base Cutoff Current	I_{CBO}			100	nA	$V_{CB}=30V, I_E=0$
DC Current Gain	h_{FE1}	25				$V_{CE}=2V, I_C=5mA$
	h_{FE2}	100		250		$V_{CE}=2V, I_C=150mA$
	h_{FE3}	25				$V_{CE}=2V, I_C=500mA$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.5	V	$I_C=500mA, I_B=50mA$
Base-Emitter Voltage	V_{BE}			1	V	$V_{CE}=2V, I_C=500mA$
Transition Frequency	f_T	100			MHz	$V_{CE}=10V, I_C=50mA, f=100MHz$

Curve Characteristics

Fig. 1 - Static Characteristics

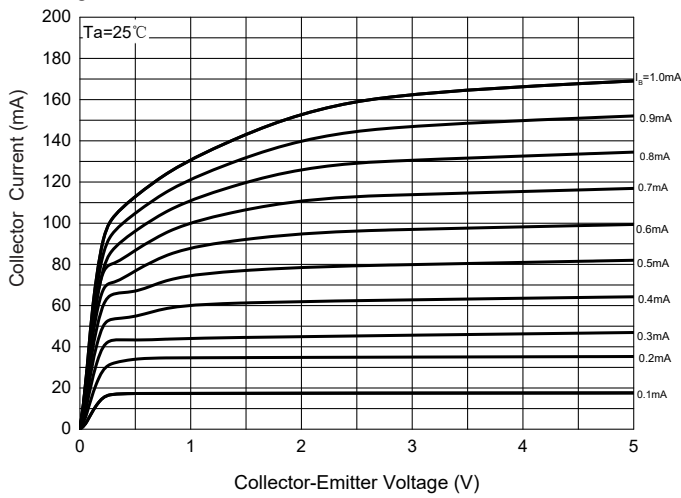


Fig. 2 - DC Current Gain Characteristics

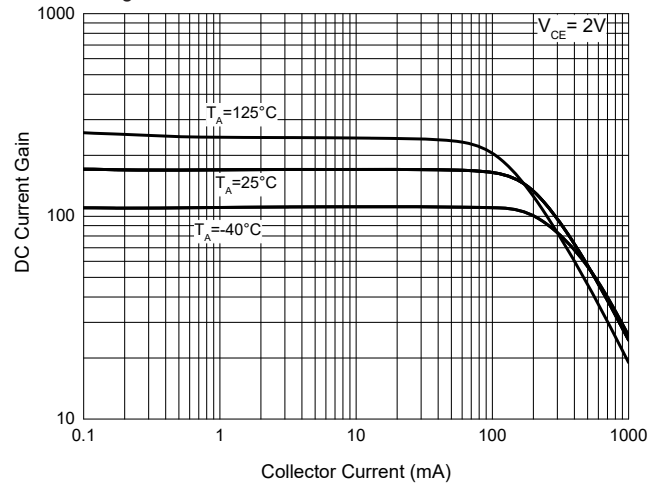


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

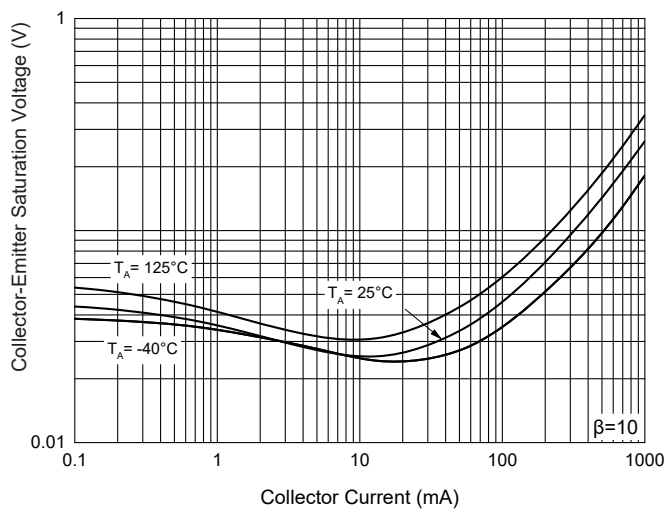


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

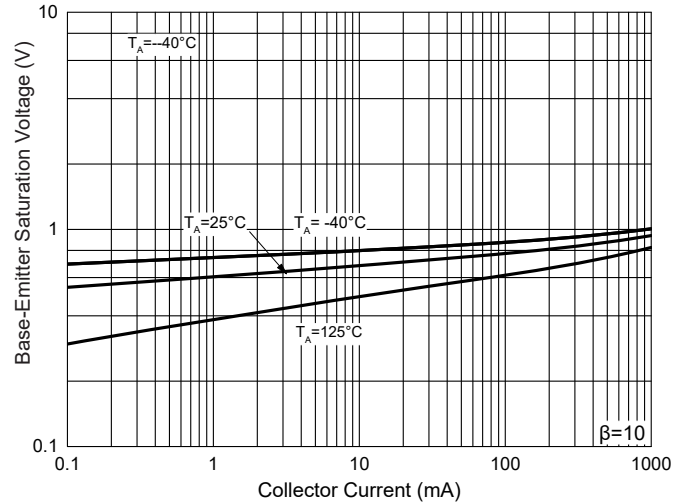


Fig. 5 - Base-Emitter Voltage Characteristics

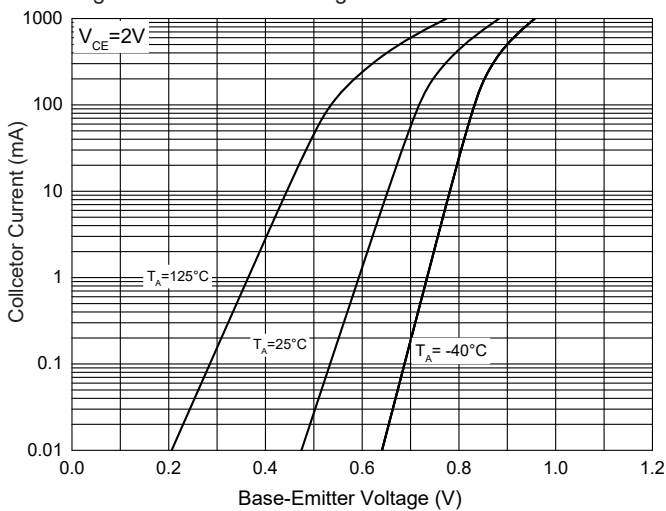
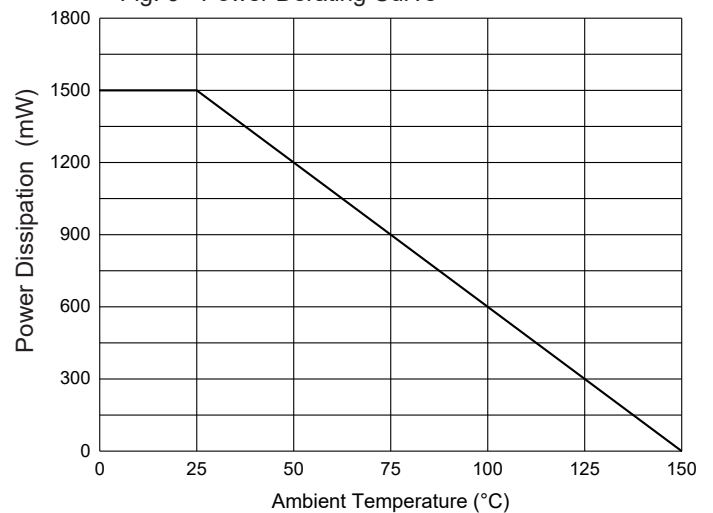


Fig. 6 - Power Derating Curve



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel; 2.5Kpcs/Reel

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