

### 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)

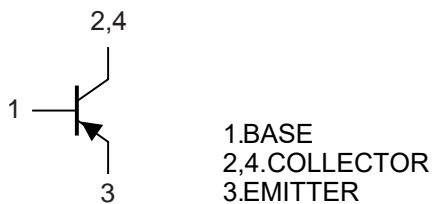
### Maximum Ratings @ 25°C Unless Otherwise Specified

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 250°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	-45	V
Collector-Emitter Voltage	$V_{CEO}$	-45	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Collector Current	$I_C$	-1	A
Base Current	$I_B$	-100	mA
Peak Base Current	$I_{BM}$	-200	mA
Power Dissipation	$P_D$	500	mW

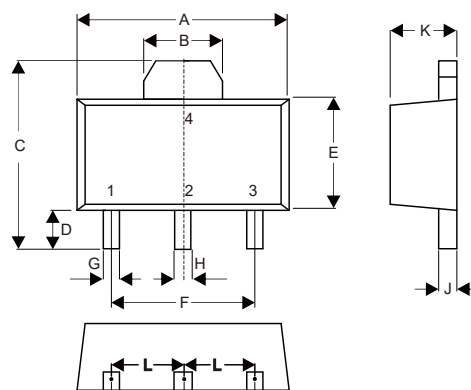
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

### Internal Structure



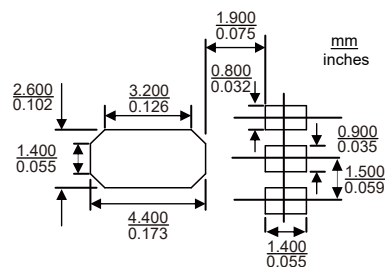
# PNP Plastic-Encapsulate Transistors

### SOT-89



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.169	0.185	4.30	4.70	
B	0.061		1.55		TYP.
C	0.154	0.171	3.91	4.35	
D	0.031	0.047	0.80	1.20	
E	0.089	0.104	2.25	2.65	
F	0.118		3.00		TYP.
G	0.013	0.020	0.33	0.52	
H	0.015	0.021	0.38	0.53	
J	0.014	0.017	0.35	0.44	
K	0.055	0.063	1.40	1.60	
L	0.059		1.50		TYP.

### Suggested Solder Pad Layout



**Electrical Characteristics @ T<sub>A</sub>=25°C Unless Otherwise Specified**

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	-45			V	I <sub>C</sub> =-100μA, I <sub>E</sub> =0
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	-45			V	I <sub>C</sub> =-1mA, I <sub>B</sub> =0
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	-5			V	I <sub>E</sub> =-10μA, I <sub>C</sub> =0
Collector-Base Cutoff Current	I <sub>CBO</sub>			-0.1	μA	V <sub>CB</sub> =-30V, I <sub>E</sub> =0
Emitter-Base Cutoff Current	I <sub>EBO</sub>			-0.1	μA	V <sub>EB</sub> =-5V, I <sub>C</sub> =0
DC Current Gain	h <sub>FE(1)</sub>	63		250		V <sub>CE</sub> =-2V, I <sub>C</sub> =-150mA
	h <sub>FE(2)</sub>	63				V <sub>CE</sub> =-2V, I <sub>C</sub> =-5mA
	h <sub>FE(3)</sub>	40				V <sub>CE</sub> =-2V, I <sub>C</sub> =-500mA
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>			-0.5	V	I <sub>C</sub> =-500mA, I <sub>B</sub> =-50mA
Base-Emitter Voltage	V <sub>BE(on)</sub>			-1.0	V	I <sub>C</sub> =-500mA, V <sub>CE</sub> =-2V
Transition Frequency	f <sub>T</sub>	50			MHz	V <sub>CE</sub> =-5V, I <sub>C</sub> =-10mA, f=100MHz

**Classification of h<sub>FE(1)</sub>**

Rank	BCX51	BCX51-10	BCX51-16
Range	63~250	63~160	100~250
Marking	AA	AC	AD

**Curve Characteristics**

Fig. 1 - Static Characteristics

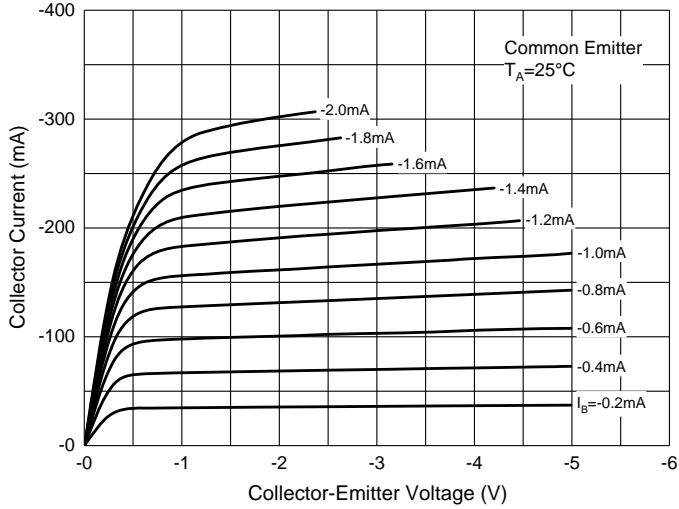


Fig. 2 - DC Current Gain Characteristics

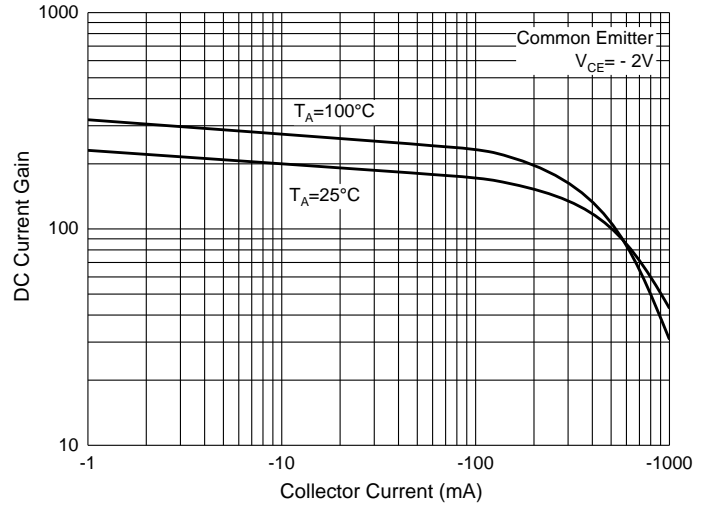


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

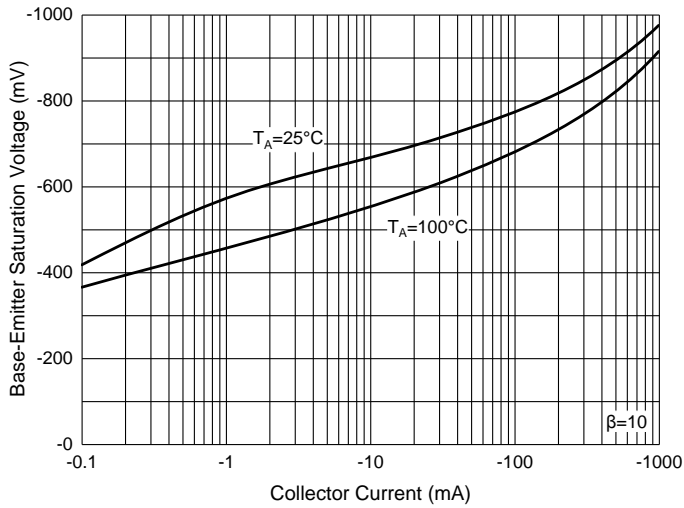


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

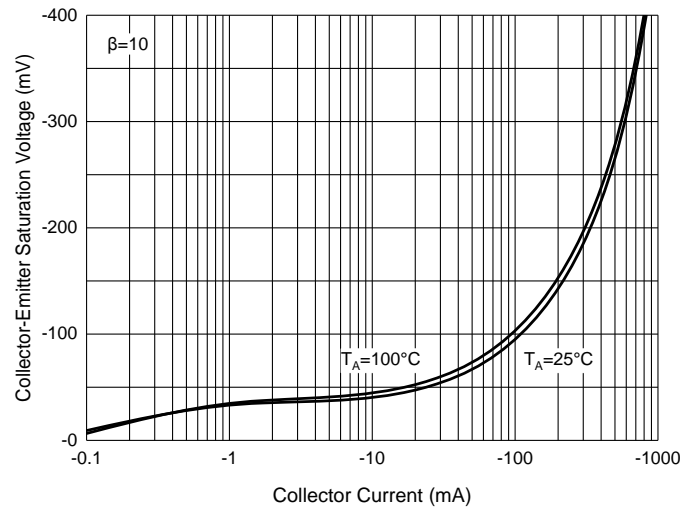


Fig. 5 - Base-Emitter Voltage Characteristics

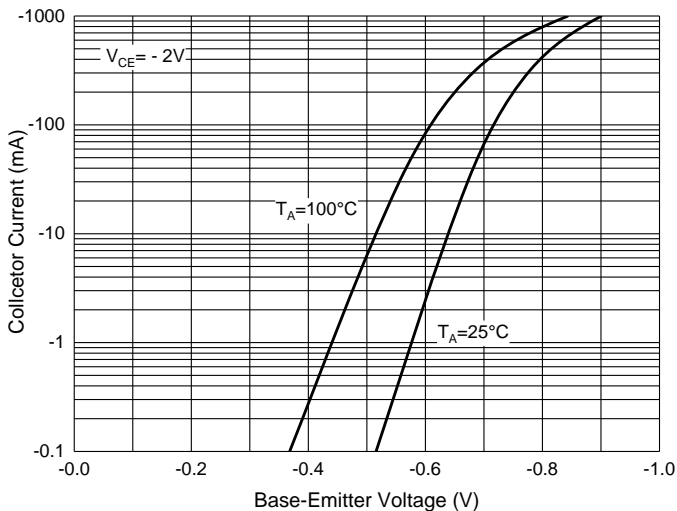
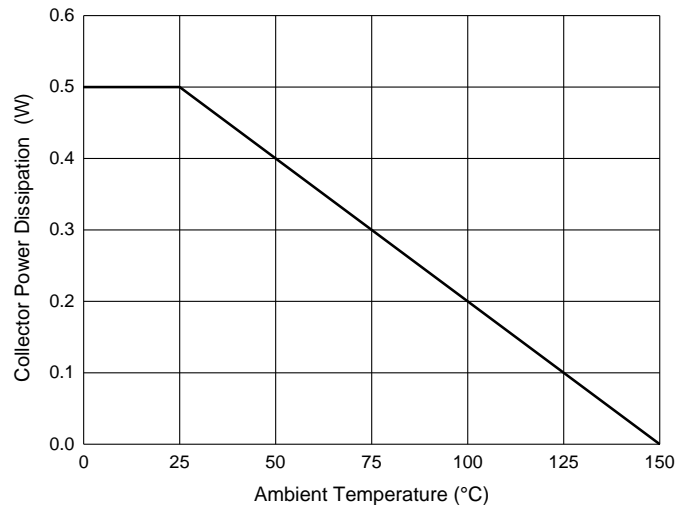


Fig. 6 - Collector Power Derating Curve



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 1Kpcs/Reel

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