

## Features

- Low Collector Saturation Voltage
- Excellent Current to Gain Characteristics
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- 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

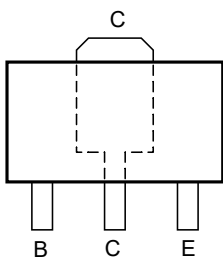
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 250°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	-30	V
Collector-Emitter Voltage	$V_{CEO}$	-20	V
Emitter-Base Voltage	$V_{EBO}$	-6.0	V
Collector Current	$I_C$	-5.0	A
Pulsed Collector Current	$I_{CP}$	-10	A
Collector Power Dissipation	$P_C$	500	mW

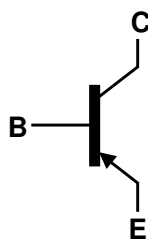
## Classification Of $h_{FE}$

Rank	P	Q	R
Range	82-180	120-270	180-390
Marking	BHP	BHQ	BHR

Pin Configuration - Top View

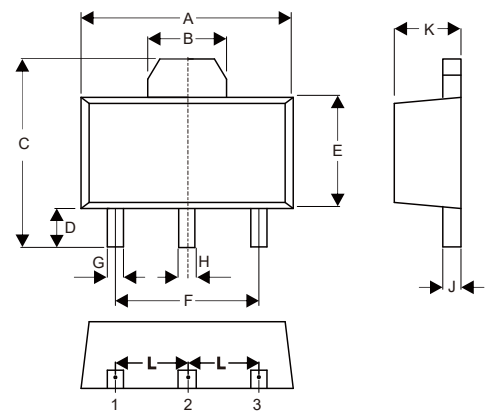


Internal Structure



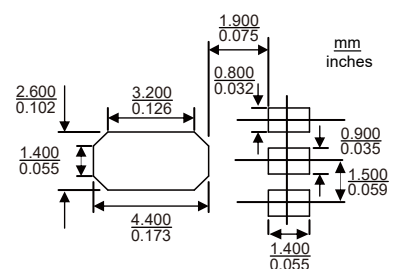
# PNP Silicon Epitaxial Transistors

## 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 @ 25°C Unless Otherwise Specified**

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CEO}$	-30			V	$I_C = -50\mu A, I_E = 0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-20			V	$I_C = -1mA, I_B = 0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-6			V	$I_E = -50\mu A, I_C = 0$
Collector-Base Cutoff Current	$I_{CBO}$			-0.5	$\mu A$	$V_{CB} = -20V, I_E = 0$
Emitter-Base Cutoff Current	$I_{EBO}$			-0.5	$\mu A$	$V_{EB} = -5V, I_C = 0$
DC Current Gain	$h_{FE}$	82		390		$V_{CE} = -2V, I_C = -0.5A$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			-1.0	V	$I_C = -4A, I_B = -0.1A$
Transition Frequency	$f_T$		120		MHz	$V_{CE} = -6V, I_C = -50mA, f = 30MHz$
Collector Output Capacitance	$C_{ob}$		60		pF	$V_{CB} = -20V, I_E = 0, f = 1.0MHz$

**Curve Characteristics**

Fig. 1 - Static Characteristics

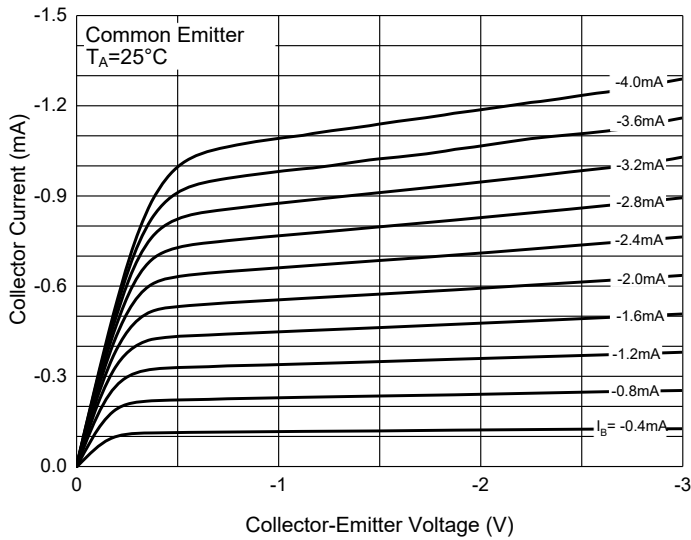


Fig. 2 - DC Current Gain Characteristics

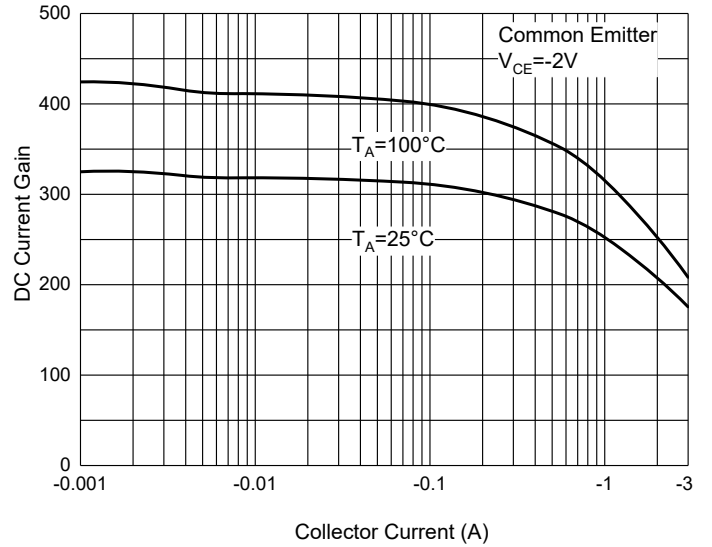


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

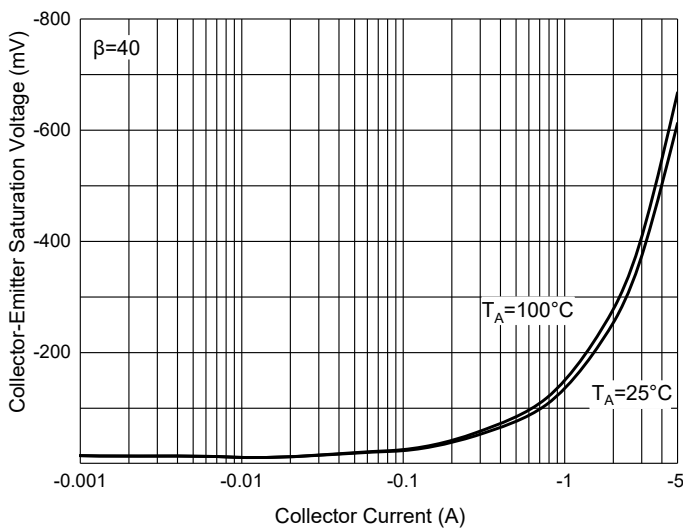


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

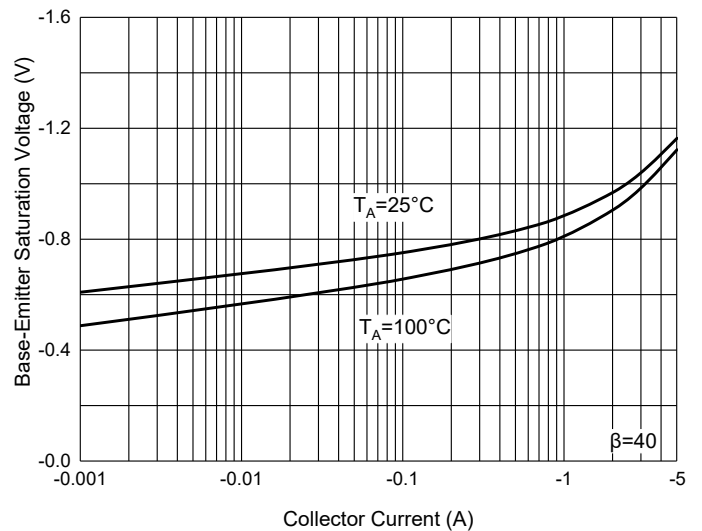


Fig. 5 - Base-Emitter Voltage Characteristics

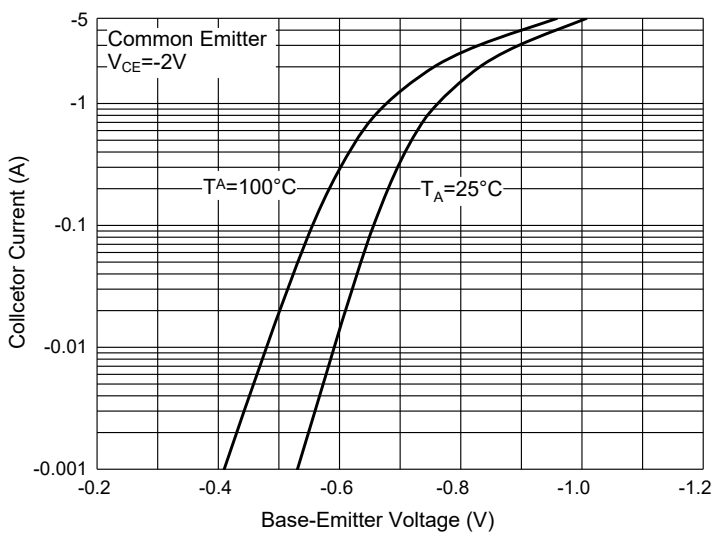
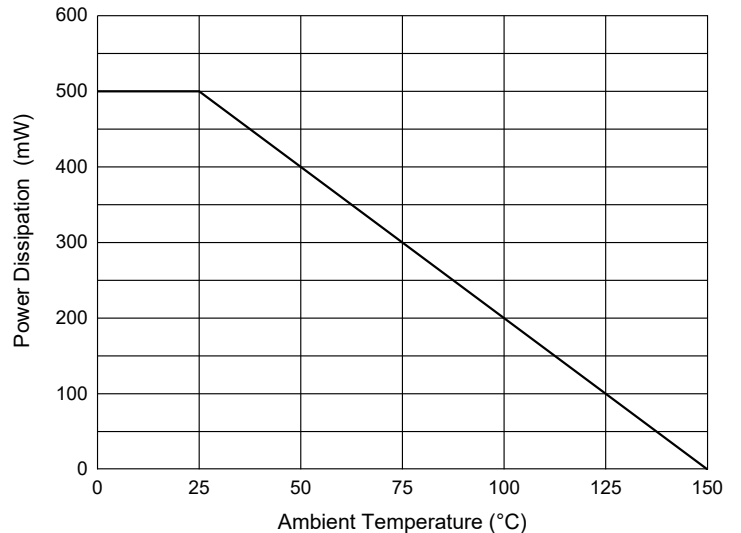


Fig. 6 - Power Derating Curve



## Ordering Information

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

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-TP-HF

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