

Features

- High Current
- Complement to BSR33
- 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

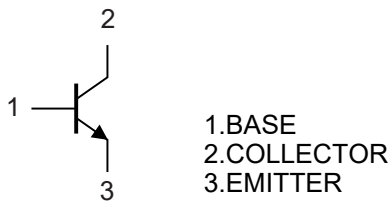
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 250°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	90	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	5	V
Continuous Collector Current	I_C	1	A
Power Dissipation	P_D	0.5	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.

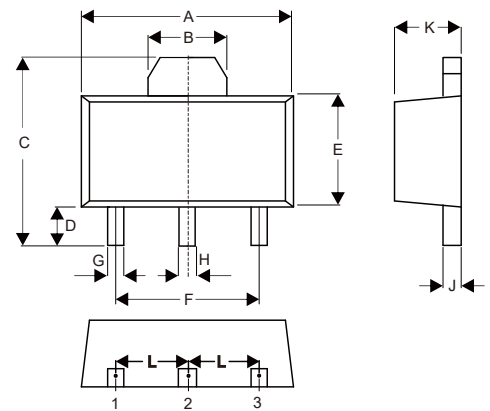
Marking: AR4

Internal Structure



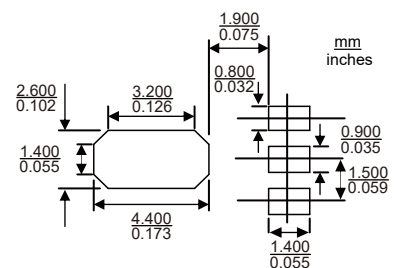
**Silicon
NPN epitaxial planer
Transistors**

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_A=25°C Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	V _{(BR)CBO}	90			V	I _C =100μA, I _E =0
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	80			V	I _C =1mA, I _B =0
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	5			V	I _E =100μA, I _C =0
Collector Cutoff Current	I _{CBO}			0.1	μA	V _{CB} =60V, I _E =0
Emitter Cutoff Current	I _{EBO}			0.1	μA	V _{EB} =5V, I _C =0
DC Current Gain	h _{FE(1)}	30				V _{CE} =5V, I _C =0.1mA
	h _{FE(2)}	100		300		V _{CE} =5V, I _C =100mA
	h _{FE(3)}	50				V _{CE} =5V, I _C =0.5A
Collector-Emitter Saturation Voltage	V _{CE(sat)}			0.25	V	I _C =150mA, I _B =15mA
				0.5	V	I _C =500mA, I _B =50mA
Base-Emitter Saturation Voltage	V _{BE(sat)}			1.0	V	I _C =150mA, I _B =15mA
				1.2	V	I _C =500mA, I _B =50mA
Transition Frequency	f _T	100			MHz	V _{CE} =10V, I _C =50mA, f=100MHz
Collector output capacitance	C _{ob}			12	pF	V _{CB} =10V, I _E =0, f=1MHz
Emitter input capacitance	C _{ib}			90	pF	V _{BE} =0.5V, I _C =0, f=1MHz

Curve Characteristics

Fig. 1 - Static Characteristics

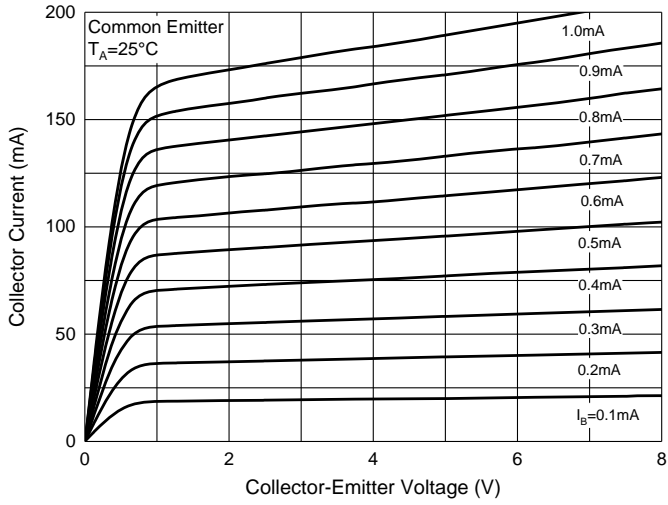


Fig. 2 - DC Current Gain Characteristics

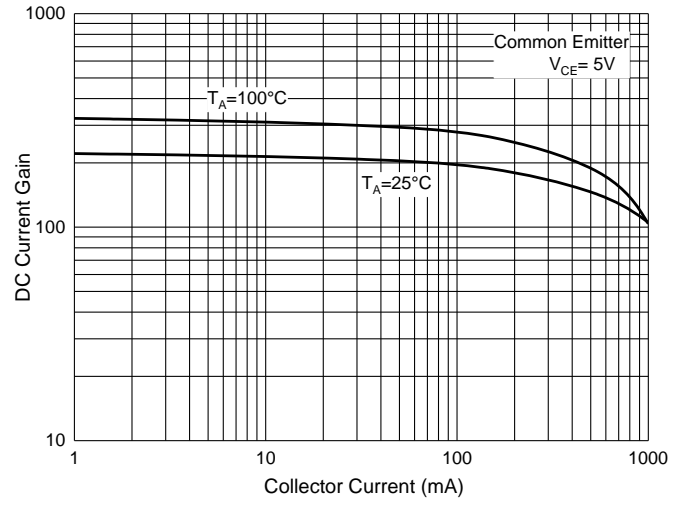


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

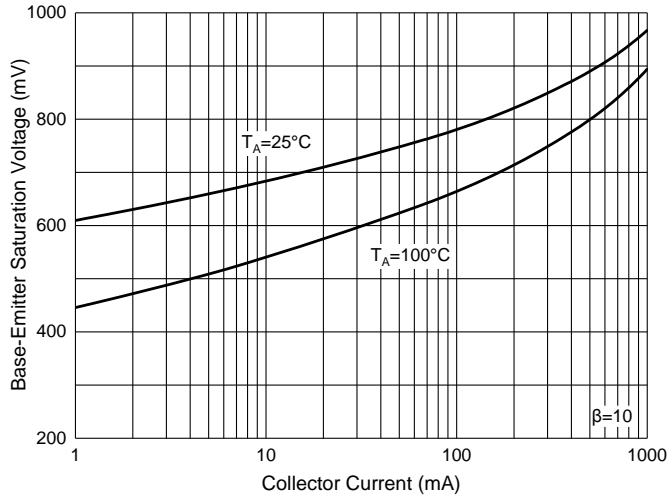


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

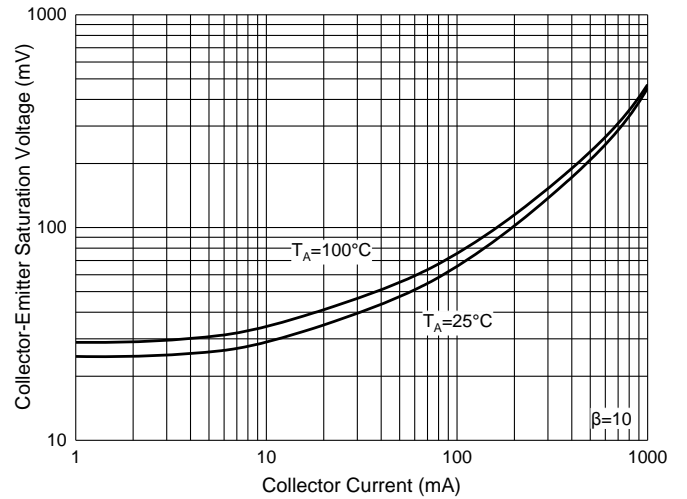


Fig. 5 - Base-Emitter Voltage Characteristics

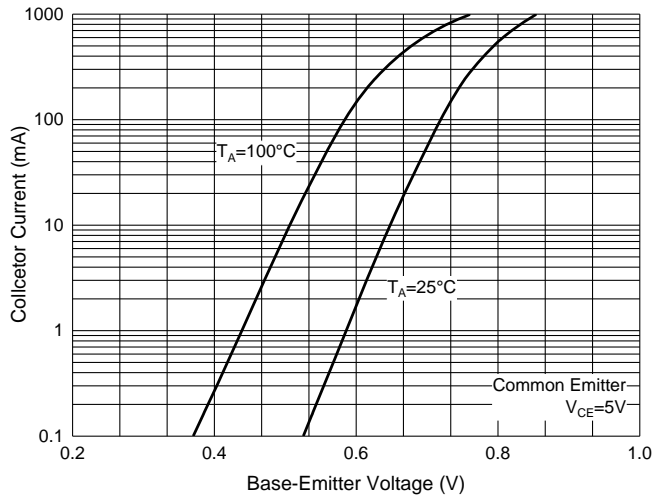
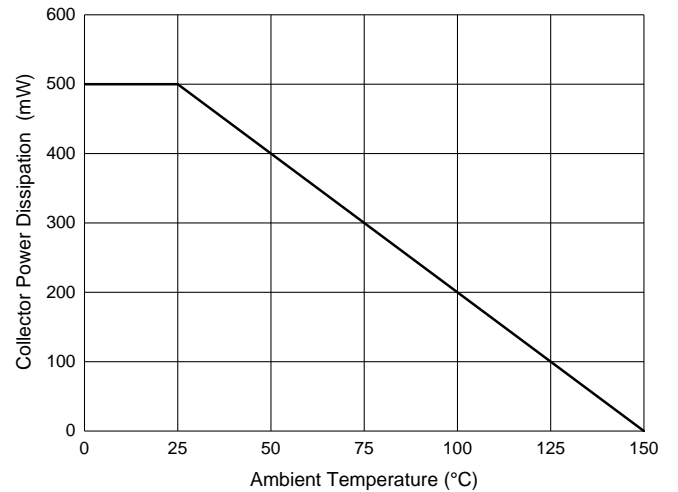


Fig. 6 - Collector Power Derating Curve



Ordering Information

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

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