

SOT-89-3L Plastic-Encapsulate Transistors TRANSISTOR (NPN)

FEATURES

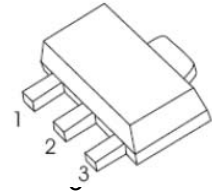
- High Current
- Complements the BSR33
- AEC-Q101 qualified (Automotive grade with suffix "Q".)

MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V _{CB0}	Collector-Base Voltage	90	V
V _{CEO}	Collector-Emitter Voltage	80	V
V _{EBO}	Emitter-Base Voltage	5	V
I _C	Collector Current -Continuous	1	A
P _C	Collector Power Dissipation	500	mW
T _J , T _{stg}	Operation Junction and Storage Temperature Range	-55~150	°C

SOT-89-3L

1. BASE
2. COLLECTOR
3. EMITTER



ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =100μA, I _E =0	90			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C = 1mA, I _B =0	80			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =100μA, I _C =0	5			V
Collector cut-off current	I _{CBO}	V _{CB} =60V, I _E =0			0.1	μA
Emitter cut-off current	I _{EBO}	V _{EB} =5V, I _C =0			0.1	μA
DC current gain	h _{FE(1)}	V _{CE} = 5V, I _C =0.1mA	30			
	h _{FE(2)}	V _{CE} = 5V, I _C =100mA	100		300	
	h _{FE(3)}	V _{CE} = 5V, I _C =500mA	50			
Collector-emitter saturation voltage *	V _{CE(sat)}	I _C =500mA, I _B =50mA			0.5	V
Transition frequency	f _T	V _{CE} =10V, I _C =50mA, f=100MHz		100		MHz
Output capacitance	C _{ob}	V _{CB} =10V, I _E =0, f=1MHz			12	pF

* Measured using pulse current.

Typical Characteristics

Fig. 1 - Static Characteristics

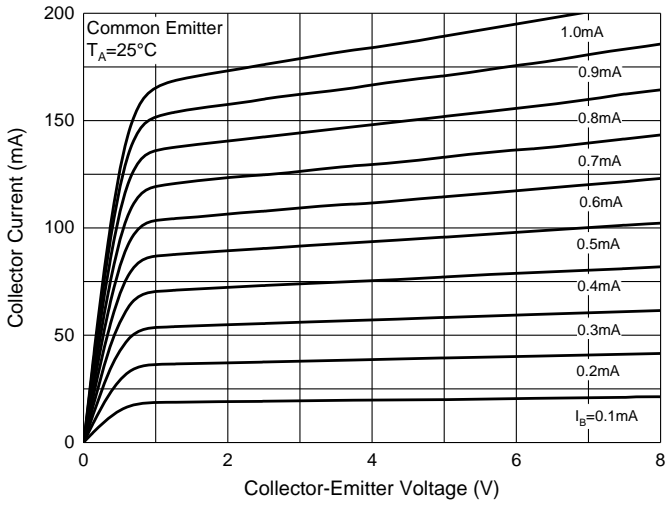


Fig. 2 - DC Current Gain Characteristics

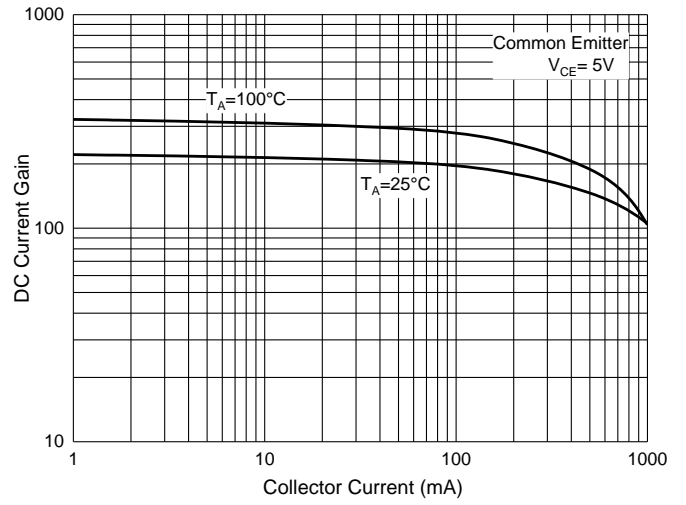


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

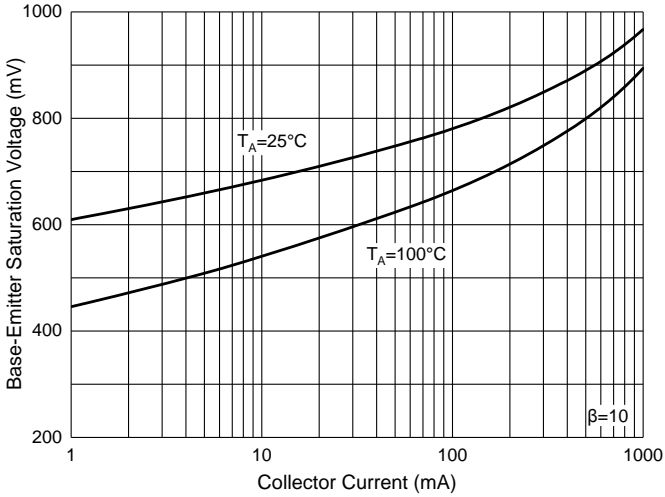


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

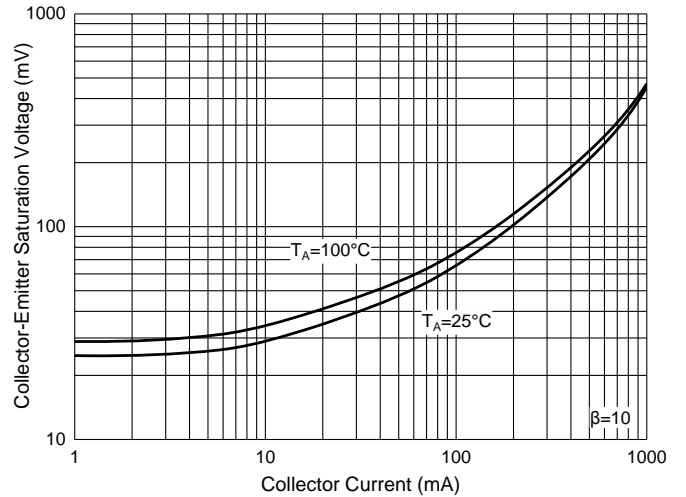


Fig. 5 - Base-Emitter Voltage Characteristics

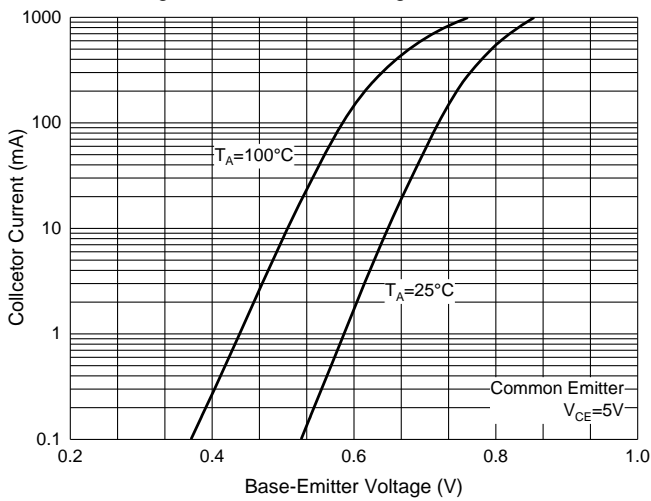
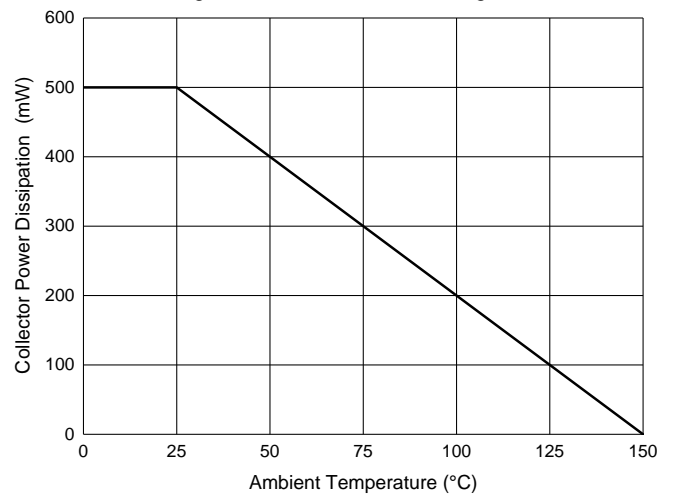
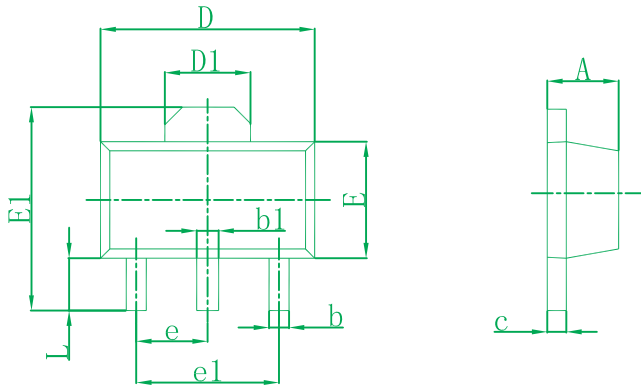


Fig. 6 - Collector Power Derating Curve

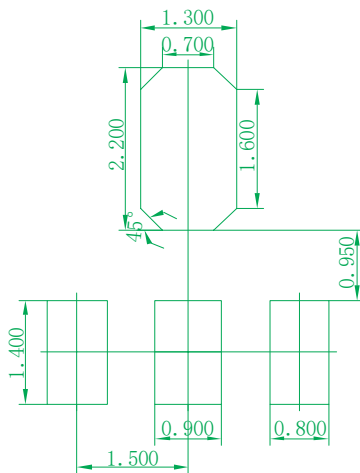


SOT-89-3L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047

SOT-89-3L Suggested Pad Layout



- Note:
1. Controlling dimension: in millimeters.
 2. General tolerance: $\pm 0.05\text{mm}$.
 3. The pad layout is for reference purposes only.

Ordering information

Device	Package	Reel
BSR43	SOT-89	1000/Tape