

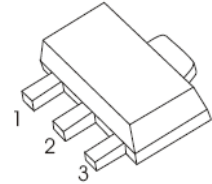
TRANSISTOR (NPN)

FEATURES

- High Breakdown Voltage and Current
- Excellent DC Current Gain Linearity
- Low Collector-Emitter Saturation Voltage

SOT-89-3L

1. BASE
2. COLLECTOR
3. EMITTER



MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	100	V
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	1	A
P_C	Collector Power Dissipation	500	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	250	$^{\circ}\text{C}/\text{W}$
T_j	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55~+150	$^{\circ}\text{C}$

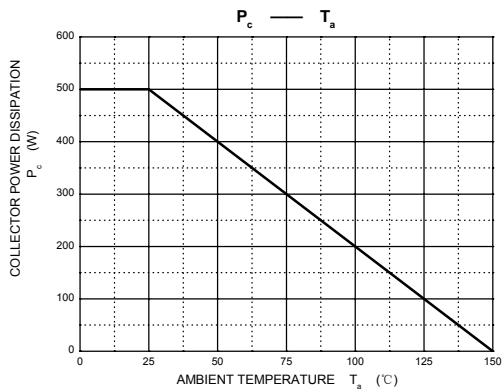
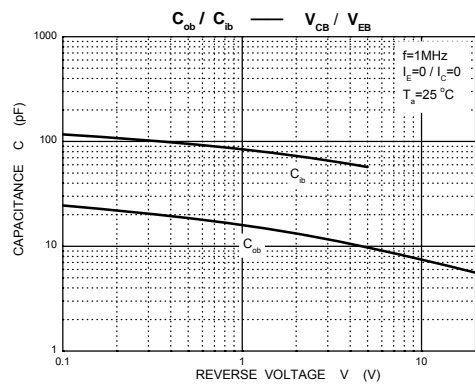
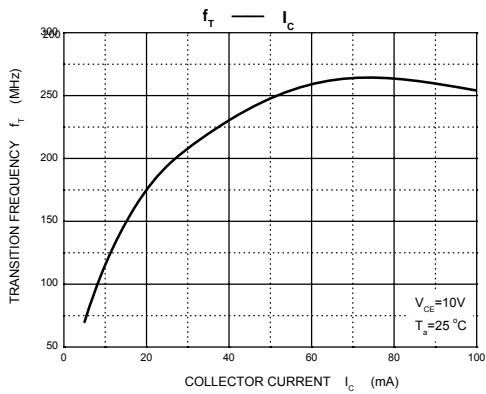
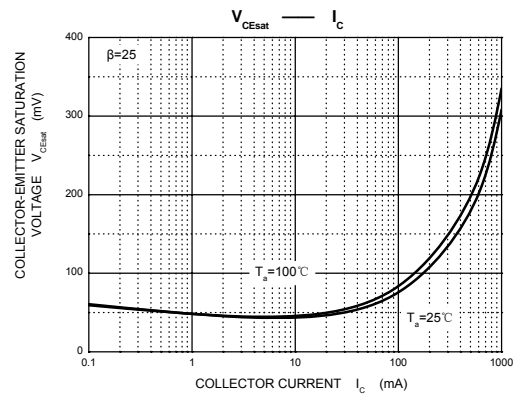
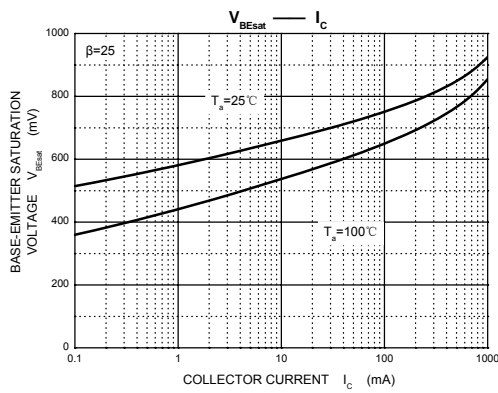
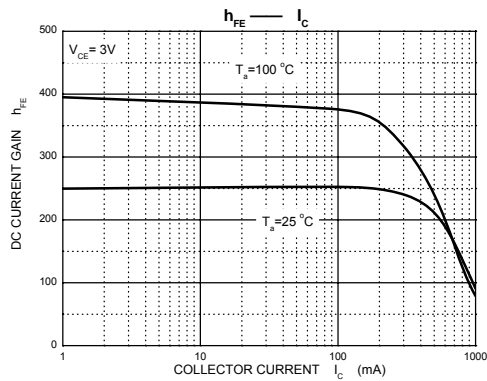
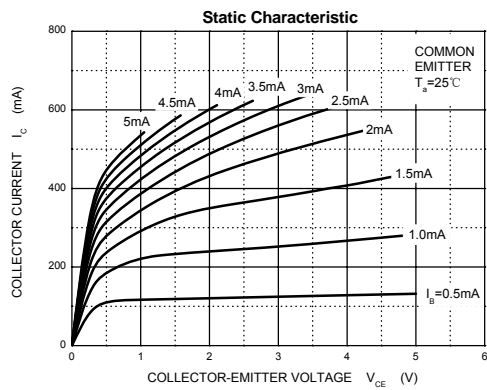
ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=50\mu\text{A}, I_E=0$	100			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	80			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=50\mu\text{A}, I_C=0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB}=80\text{V}, I_E=0$			1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0$			1	μA
DC current gain	h_{FE}	$V_{CE}=3\text{V}, I_C=500\text{mA}$	70		400	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=500\text{mA}, I_B=20\text{mA}$			0.4	V
Transition frequency	f_T	$V_{CE}=10\text{V}, I_C=50\text{mA}, f=100\text{MHz}$		100		MHz
Collector output capacitance	C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$		20		pF

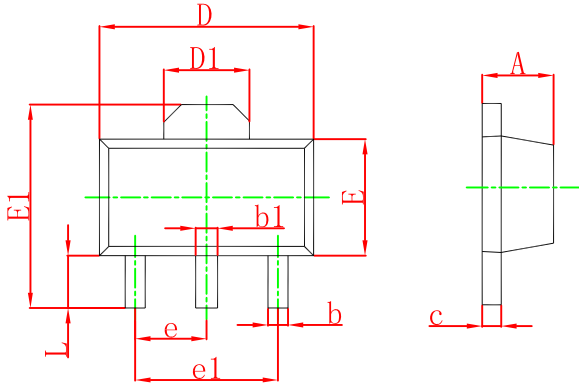
CLASSIFICATION OF h_{FE}

RANK	O	Y	GR
RANGE	70 - 140	120 - 240	200 - 400
MARKING	Z		

Typical Characteristics

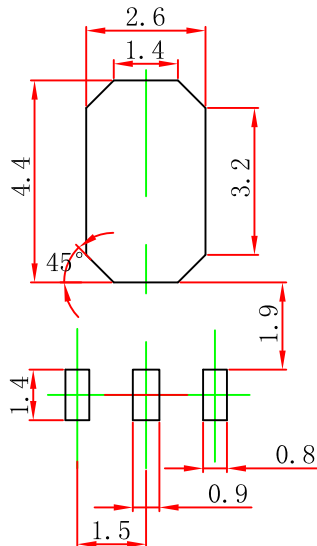


SOT-89-3L Package Outline Dimensions



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.