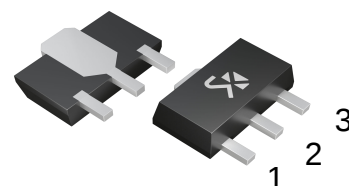


NPN Silicon Epitaxial Planar Transistor

Applications :

- Can be used for switching and amplifying
- In various electrical and electronic equipments

SOT-89



1base 2collector 3emitter

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

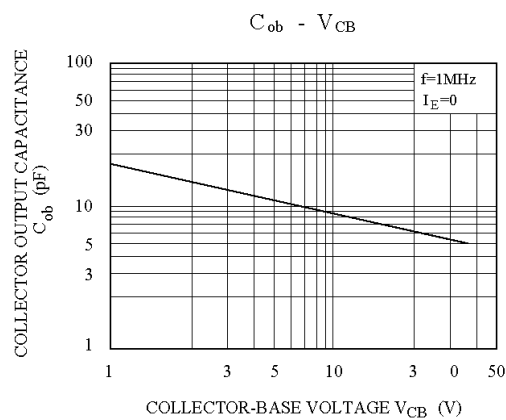
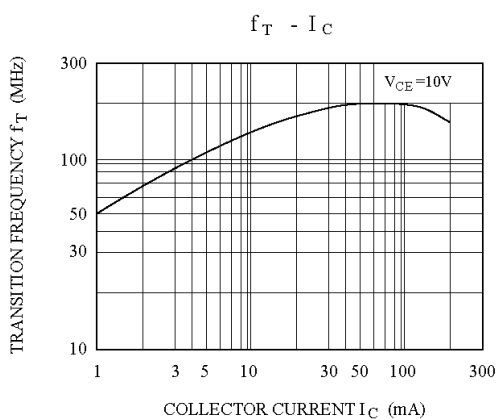
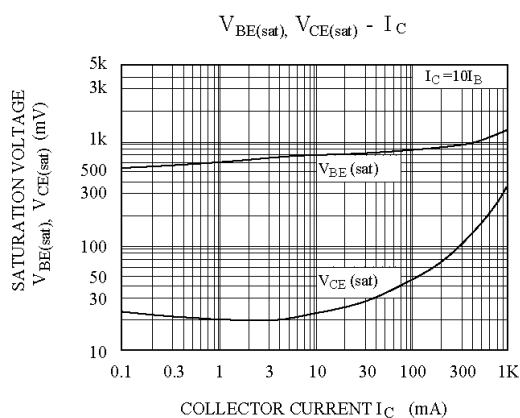
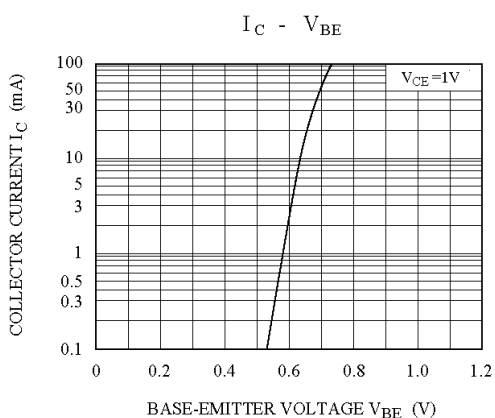
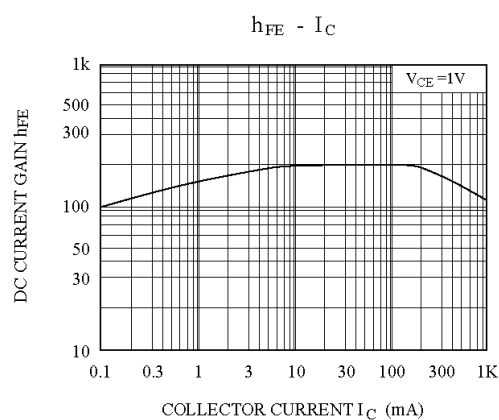
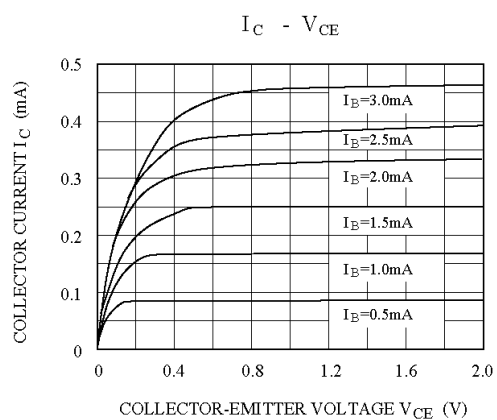
Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	40	V
V_{CEO}	Collector-Emitter Voltage	25	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current -Continuous	1.5	A
P_{tot}	Total power dissipation($T_A=25^{\circ}\text{C}$)*	0.625	W
T_j	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55-150	$^{\circ}\text{C}$

* mounted on printed circuit board.

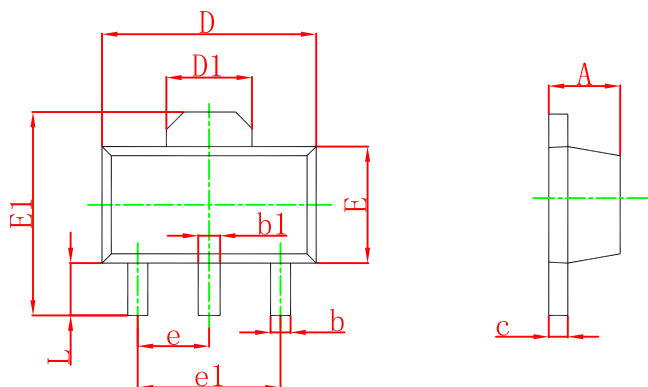
ELECTRICAL CHARACTERISTICS ($T_{amb}=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=2\text{mA}, I_B=0$	25			V
Collector- base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	40			V
Emitter - base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}, I_C=0$	6			V
Collector cut-off current	I_{CBO}	$V_{CB}=35\text{V}, I_E=0$			100	nA
Emitter cut-off current	I_{EBO}	$V_{CB}=6\text{V}, I_C=0$			100	nA
DC current gain	h_{FE}	$V_{CE}=1\text{V}, I_C=5\text{mA}$ $V_{CE}=1\text{V}, I_C=100\text{mA}$ $V_{CE}=1\text{V}, I_C=800\text{mA}$	45 120 160 40		200 300	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=800\text{mA}, I_B=80\text{mA}$			0.5	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=800\text{mA}, I_B=80\text{mA}$			1.2	V
Base-emitter voltage	V_{BE}	$V_{CE}=1\text{V}, I_C=10\text{mA}$			1	V
Transition frequency	f_T	$V_{CE}=10\text{V}, I_E=50\text{mA}$	100			MHz
Collector output capacitance	C_{Ob}	$V_{CE}=10\text{V}, I_E=0$ $f=1\text{MHz}$		9		pF

Typical characteristics

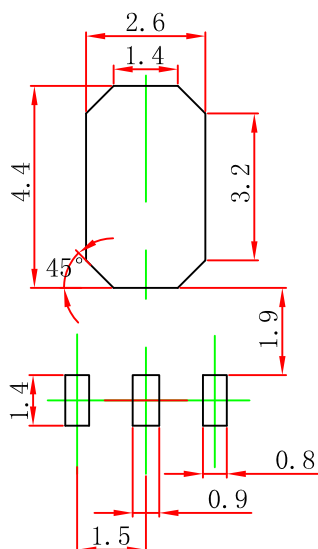


SOT-89 Package Outline Dimensions



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 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.