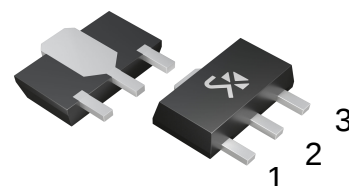


NPN Silicon Epitaxial Planar Transistor

Features :

- Power dissipation
- Plastic-Encapsulate Transistors(NPN).

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	50	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current -Continuous	3	A
P_C	Collector dissipation	1.25	W
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55-150	$^{\circ}\text{C}$

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

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=10\text{mA}$, $I_B=0$	50			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}	$V_{CB}=40\text{V}$, $I_E=0$			1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=6\text{V}$, $I_E=0$			1	μA
Collector cut-off current	I_{CEO}	$V_{CE}=30\text{V}$, $I_E=0$			10	μA
DC current gain	h_{FE}	$V_{CE}=2\text{V}$, $I_C=1\text{A}$ $V_{CE}=2\text{V}$, $I_C=100\text{mA}$	60 32		400	
Collector-emitter saturation voltage	$V_{CE(Sat)}$	$I_C=2\text{A}$, $I_B=2\text{A}$			0.5	V
Base-emitter saturation voltage	$V_{BE(Sat)}$	$I_C=2\text{A}$, $I_B=2\text{A}$			2.0	V
Transition frequency	f_T	$V_{CE}=5\text{V}$, $I_E=0.1\text{A}$, $f=10\text{MHz}$	50			MHz

CLASSIFICATION OF h_{FE}

RANK	R	S	T	U
RANGE	100 – 200	140 – 280	200 – 400	280 – 560
MARKING	DG			

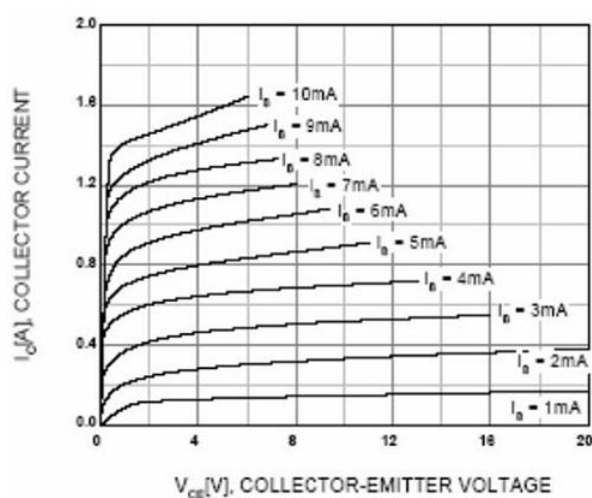


Figure 1. Static Characteristic

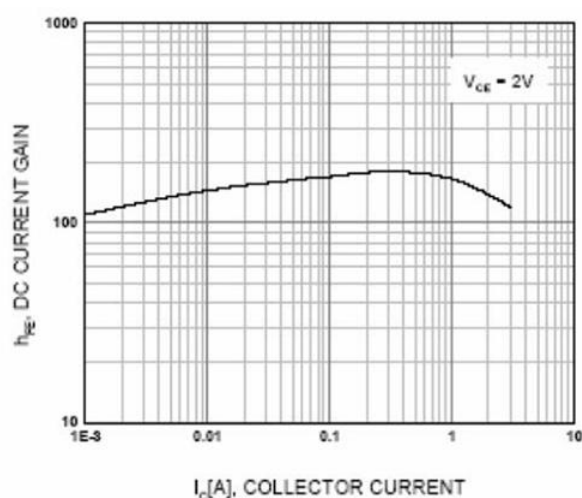


Figure 2. DC current Gain

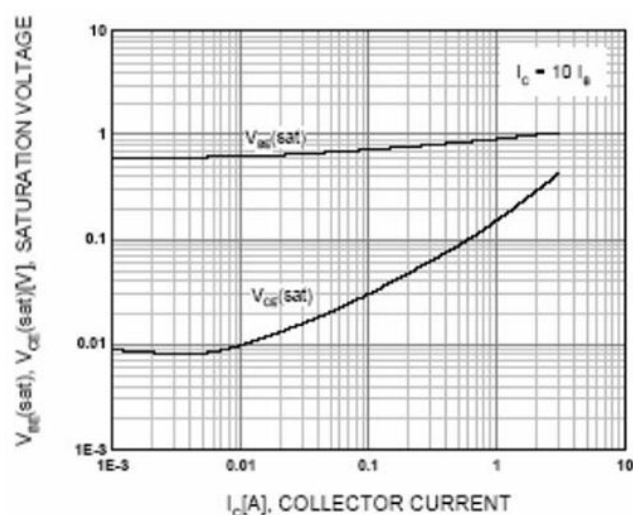


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

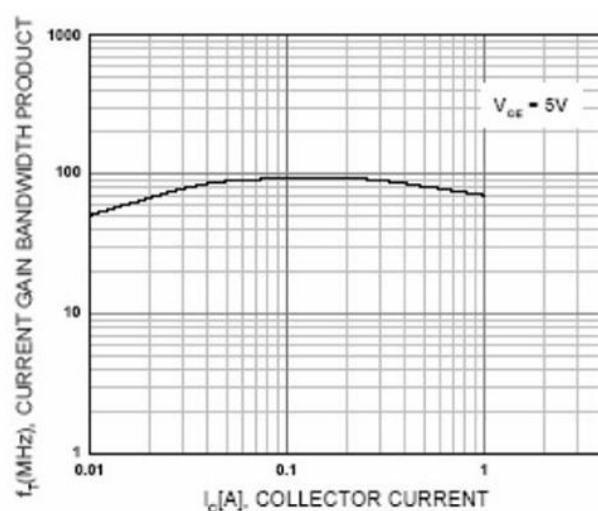


Figure 4. Current Gain Bandwidth Product

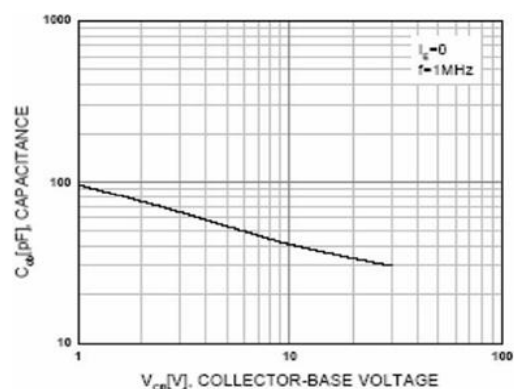
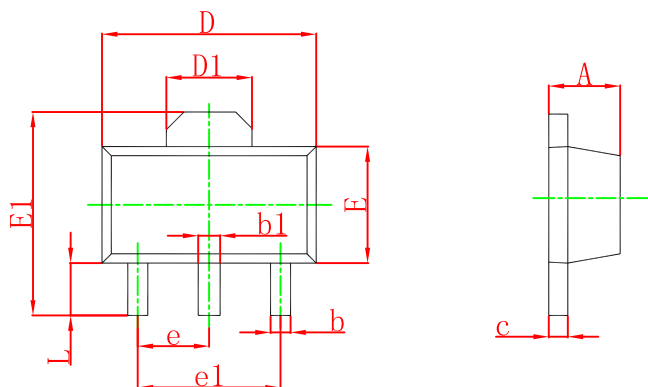


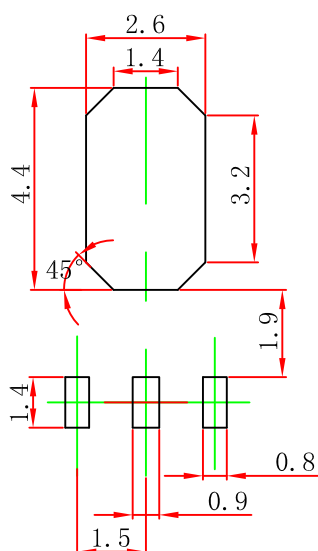
Figure 5. Collector Output Capacitance

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.