



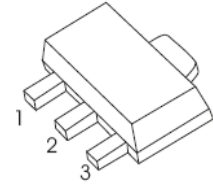
TRANSISTOR (PNP)

FEATURES

- Power Transistor
- Excellent DC current Gain
- Low Collector-emitter Saturation Voltage
- **Pb-Free package is available**
RoHS product for packing code suffix "G"
Halogen free product for packing code suffix "H"

SOT-89

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	-30	V
V_{CEO}	Collector-Emitter Voltage	-20	V
V_{EBO}	Emitter-Base Voltage	-6	V
I_C	Collector Current	-3	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)

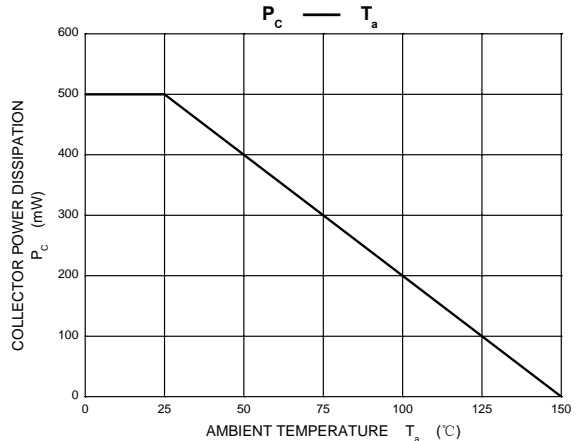
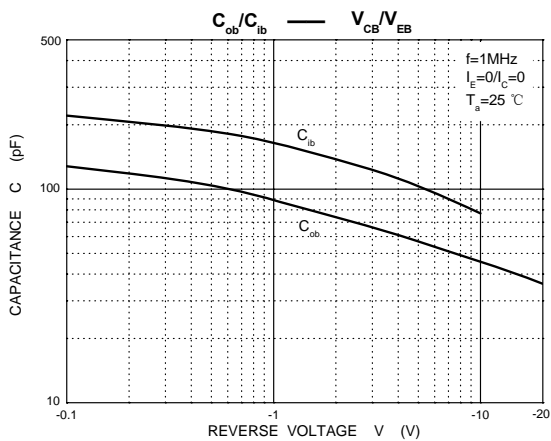
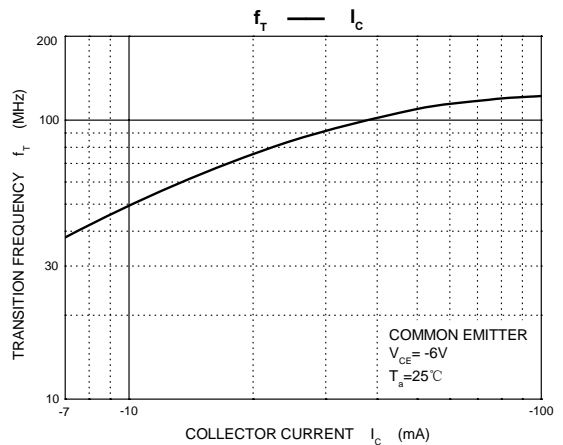
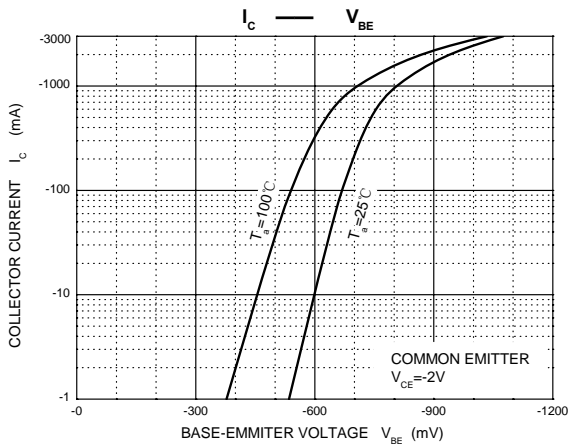
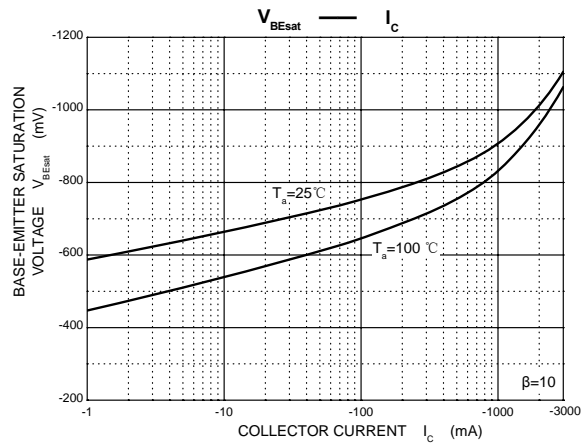
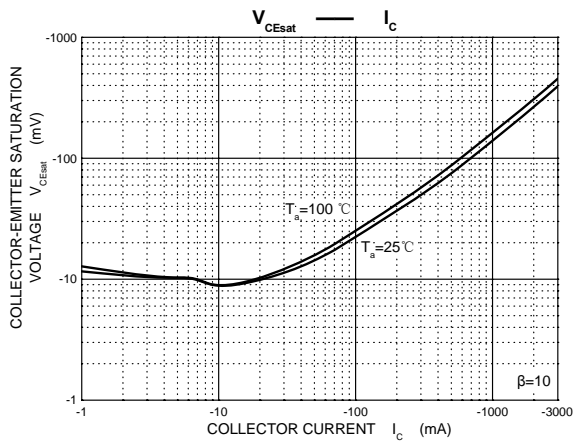
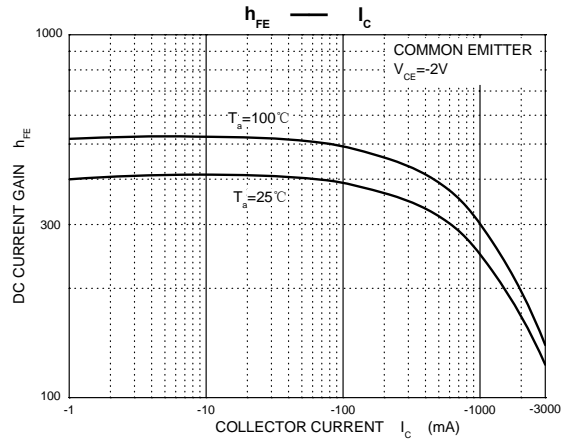
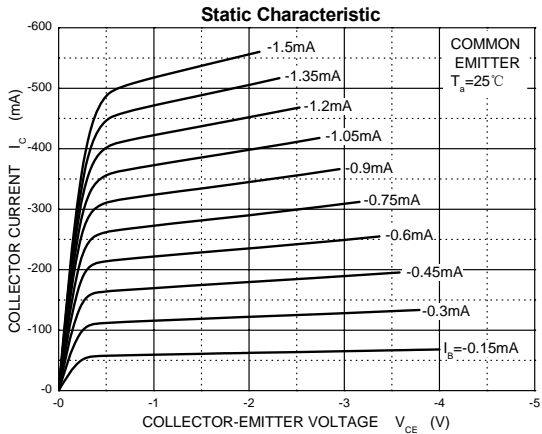
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-50\mu\text{A}, I_E=0$	-30			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=-1\text{mA}, I_B=0$	-20			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-50\mu\text{A}, I_C=0$	-6			V
Collector cut-off current	I_{CBO}	$V_{CB}=-20\text{V}, I_E=0$			-0.5	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=-5\text{V}, I_C=0$			-0.5	μA
DC current gain	h_{FE}	$V_{CE}=-2\text{V}, I_C=-0.5\text{A}$	82		390	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=-1.5\text{A}, I_B=-0.15\text{A}$			-0.45	V
Collector output capacitance	C_{ob}	$V_{CB}=-20\text{V}, I_E=0, f=1\text{MHz}$		60		pF
Transition frequency	f_T	$V_{CE}=-6\text{V}, I_C=-50\text{mA}, f=30\text{MHz}$		120		MHz

CLASSIFICATION OF h_{FE}

RANK	P	Q	R
RANGE	82 - 180	120 - 270	180 - 390
MARKING	BFP	BFQ	BFR



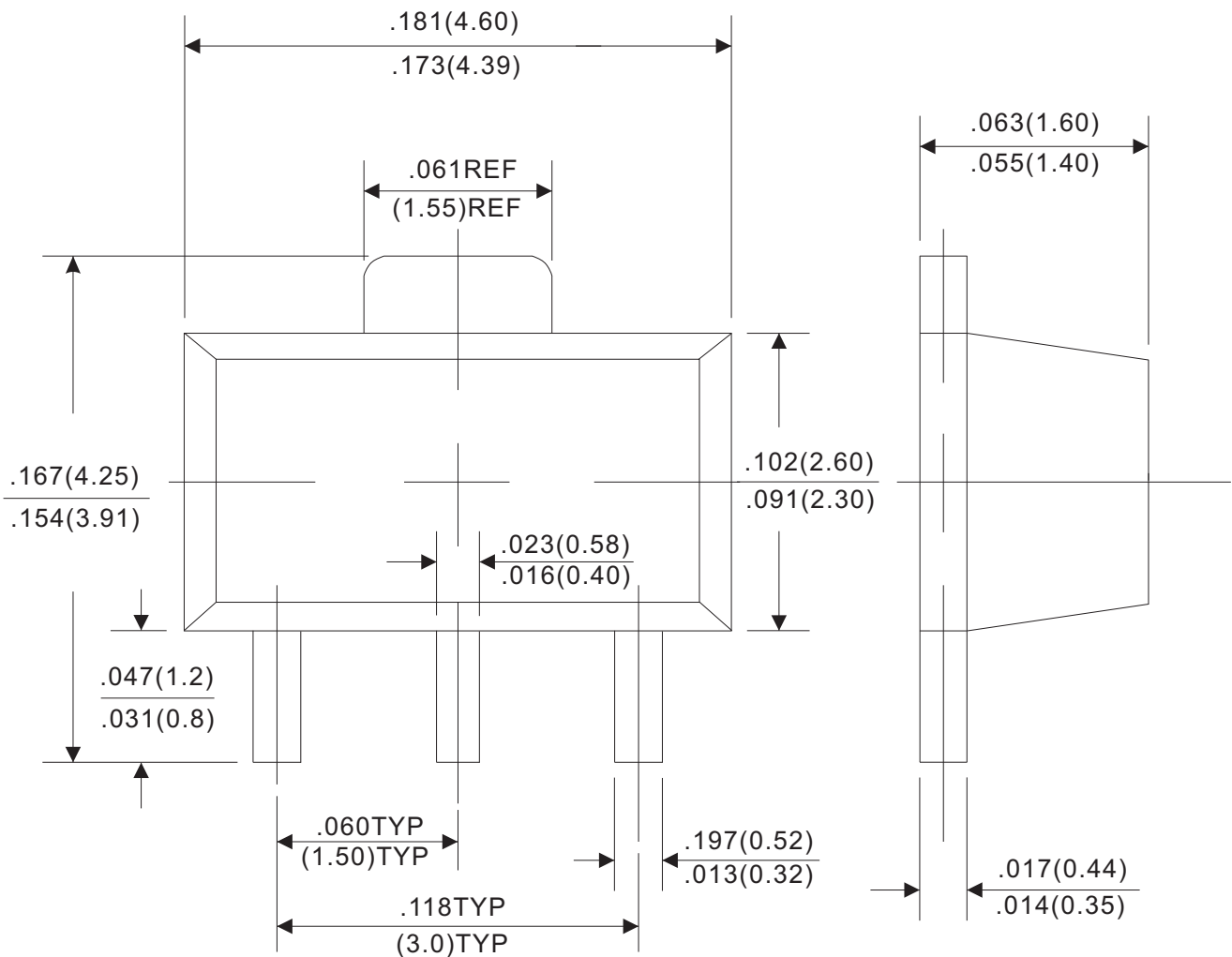
Typical Characteristics





Outline Drawing

SOT-89



Dimensions in inches and (millimeters)