

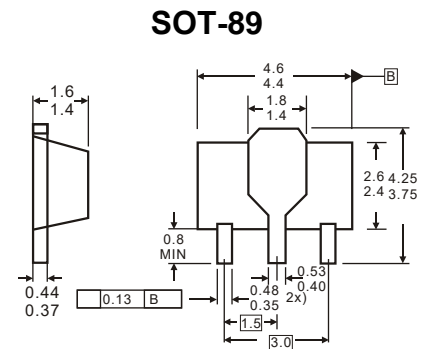
1. BASE
2. COLLECTOR
3. EMITTER

Features

- ✧ Low collector-emitter saturation voltage $V_{CE(sat)}$
- ✧ Satisfactory operation performances at high efficiency with the low voltage power supply.

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	7	V
I_C	Collector Current -Continuous	3	A
P_C	Collector Dissipation	500	mW
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55-150	$^{\circ}\text{C}$



Dimensions in inches and (millimeters)

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

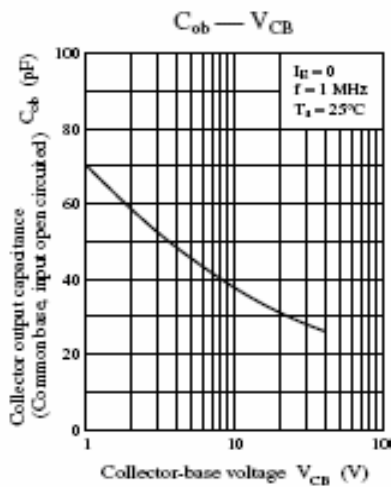
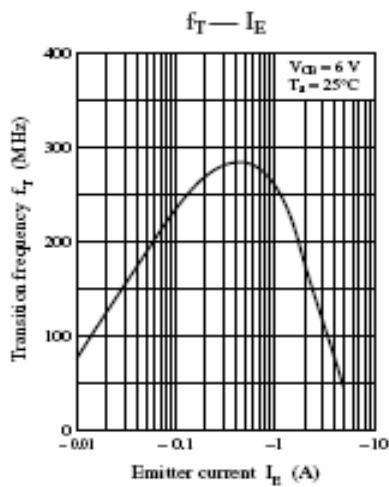
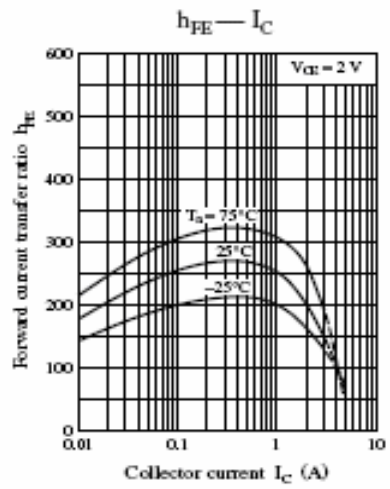
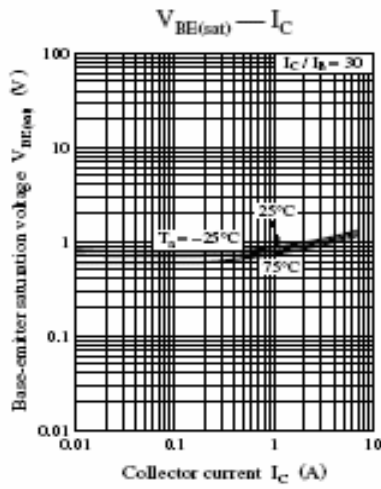
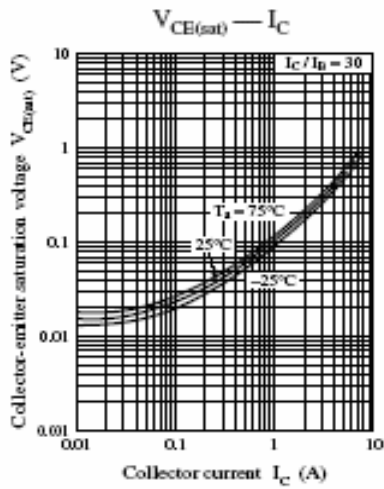
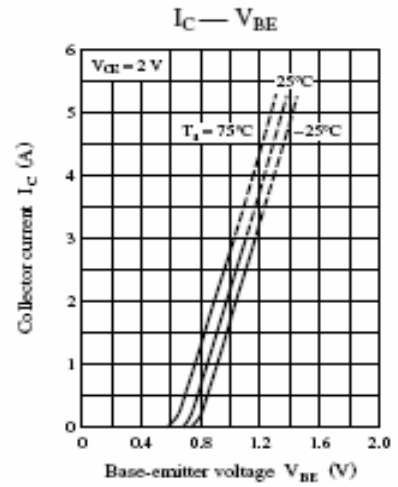
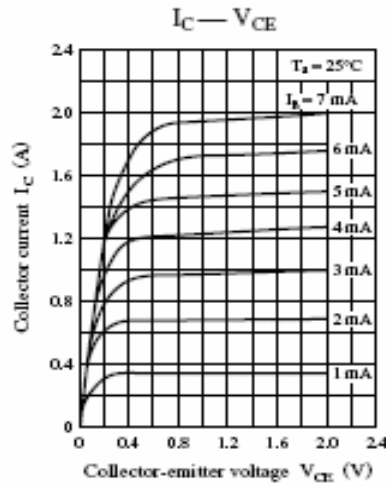
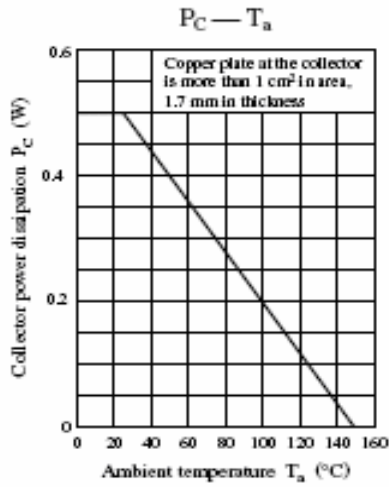
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, I_B = 0$	25			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	7			V
Collector cut-off current	I_{CBO}	$V_{CB} = 10\text{V}, I_E = 0$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 6\text{V}, I_C = 0$			0.1	μA
DC current gain	$h_{FE(1)}$	$V_{CE} = 2\text{V}, I_C = 500\text{mA}$	230		600	
	$h_{FE(2)}$	$V_{CE} = 2\text{V}, I_C = 2\text{A}$	150			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 3\text{A}, I_B = 0.1\text{A}$			1	V
Transition frequency	f_T	$V_{CE} = 6\text{V}, I_C = 50\text{mA}, f = 200\text{MHz}$		150		MHz
Collector output capacitance	C_{ob}	$V_{CB} = 20\text{V}, f = 1\text{MHz}$			50	pF

CLASSIFICATION OF $h_{FE(1)}$

Rank	Q	R
Range	230-380	340-600
Marking	TQ	TR



Typical Characteristics



Package	Reel	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)
SOT -89	1000pcs	7inch	10,000pcs	203×203×195	40,000pcs	438×438×220