

SOT -89 Plastic-Encapsulate NPN Transistors

FEATURES

Power dissipation 0.5W

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

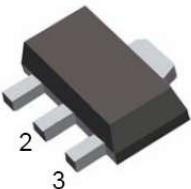
Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	40	V
V_{CEO}	Collector-Emitter Voltage	30	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current -Continuous	3	A
P_C	Collector Power Dissipation	0.5	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-55-150	$^\circ\text{C}$

SOT-89

1. BASE

2. COLLECTOR

3. Emitter



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	$V_{(BR)CEO}$	$I_C = 10\text{mA}, I_B = 0$	30			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
Collector cut-off current	I_{CEO}	$V_{CE} = 30\text{V}, I_B = 0$			10	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 6\text{V}, I_C = 0$			1	μA
DC current gain	$h_{FE(1)}$	$V_{CE} = 2\text{V}, I_C = 1\text{A}$	60		400	
	$h_{FE(2)}$	$V_{CE} = 2\text{V}, I_C = 100\text{mA}$	32			
Collector-emitter saturation voltage	$V_{CE(\text{sat})}$	$I_C = 2\text{A}, I_B = 0.2\text{ A}$			0.5	V
Base-emitter saturation voltage	$V_{BE(\text{sat})}$	$I_C = 2\text{A}, I_B = 0.2\text{ A}$			1.5	V
Transition frequency	f_T	$V_{CE} = 5\text{V}, I_C = 0.1\text{A}$ $f = 10\text{MHz}$	50			MHz

CLASSIFICATION OF $h_{FE(1)}$

Rank	R	O	Y	GR
Range	60-120	100-200	160-320	200-400

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Typical characteristics

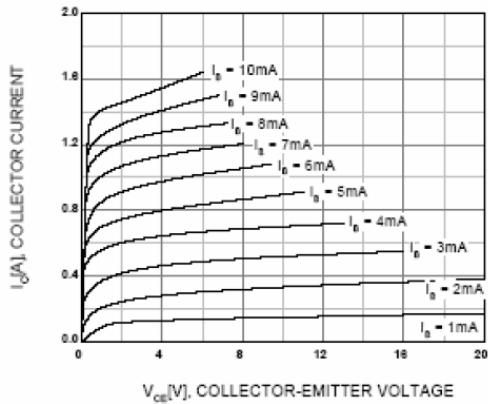


Figure 1. Static Characteristic

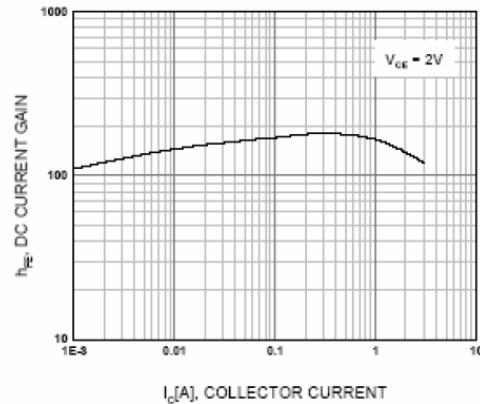


Figure 2. DC current Gain

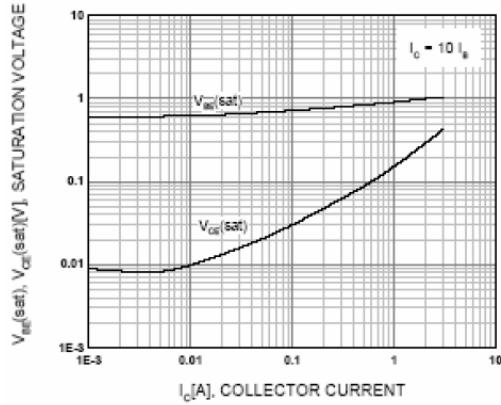


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

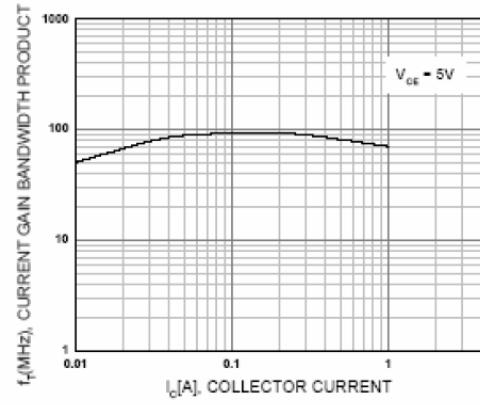


Figure 4. Current Gain Bandwidth Product

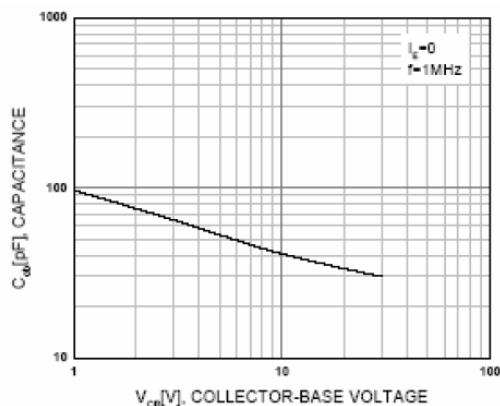


Figure 5. Collector Output Capacitance

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