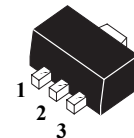


NPN Epitaxial Planar Transistors

(Pb) Lead(Pb)-Free

SOT-89



1. BASE
2. COLLECTOR
3. EMITTER

ABSOLUTE MAXIMUM RATINGS (T_A=25°C)

Rating	Symbol	Limits	Unit
Collector-Base Voltage	V _{CBO}	40	V
Collector-Emitter Voltage	V _{CEO}	20	V
Emitter-Base Voltage	V _{EBO}	6	V
Collector Current	I _C	3	A
Collector Power Dissipation	P _D	500	mW
Junction Temperature	T _j	150	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS(T_A=25°C unless otherwise noted)

Parameter	Symbol	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage I _C =50μA, I _E =0	BV _{CBO}	40	-	-	V
Collector-Emitter Breakdown Voltage I _C =1mA, I _B =0	BV _{CEO}	20	-	-	V
Emitter-Base Breakdown Voltage I _E =50μA, I _C =0	BV _{EBO}	6	-	-	V
Collector Cutoff Current V _{CB} =30V, I _E =0	I _{CBO}	-	-	0.1	μA
Emitter Cutoff Current V _{EB} =5V, I _E =0	I _{EBO}	-	-	0.1	μA

ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$ Unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
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ON CHARACTERISTICS⁽¹⁾

DC Current Gain $V_{CE}=2\text{V}, I_C=100\text{mA}$	h_{FE}	120	-	560	-
Collector-Emitter Saturation Voltage $I_C=2\text{A}, I_B=100\text{mA}$	$V_{CE(sat)}$	-	-	0.5	V

1. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

DYNAMIC CHARACTERISTICS

Transition Frequency $V_{CE}=2\text{V}, I_C=500\text{mA}, f=100\text{MHz}$	f_T	-	290	-	MHz
Output Capacitance $V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$	C_{ob}	-	25	-	pF

CLASSIFICATION OF h_{FE}

Marking	CFQ	CFR	CFS
Rank	Q	R	S
h_{FE}	120-270	180-390	270-560

ELECTRICAL CHARACTERISTIC CURVES

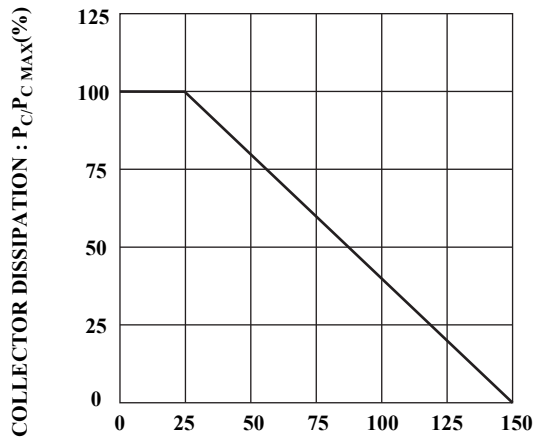


Fig.1 AMBIENT TEMPERATURE : $T_a(^{\circ}C)$

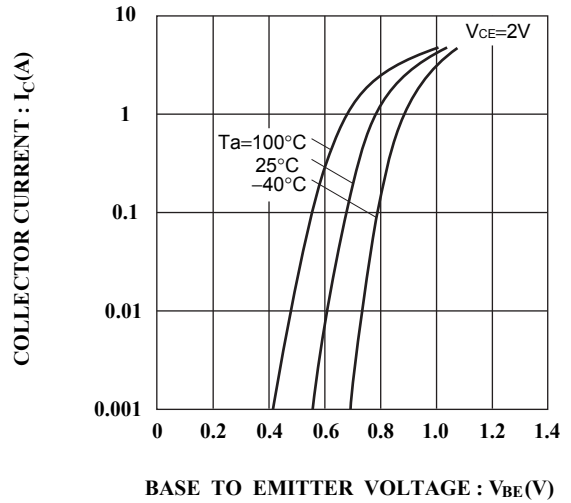


Fig.2 Grounded emitter propagation characteristics

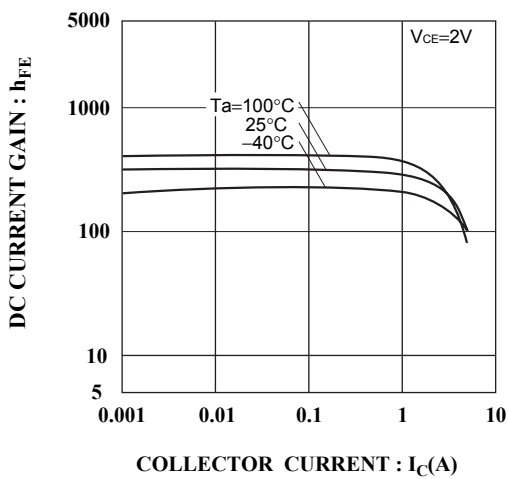


Fig.3 DC current gain vs collector current

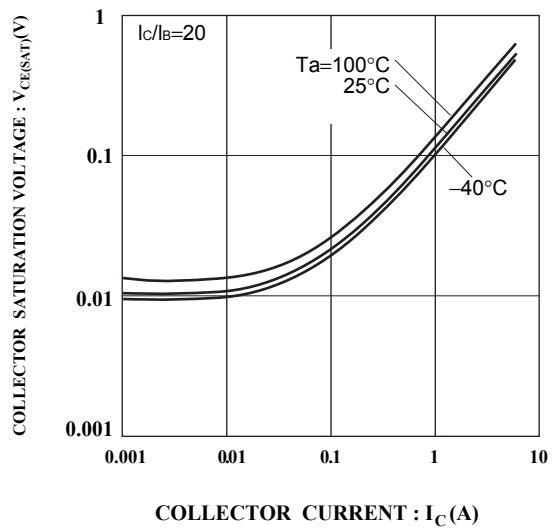
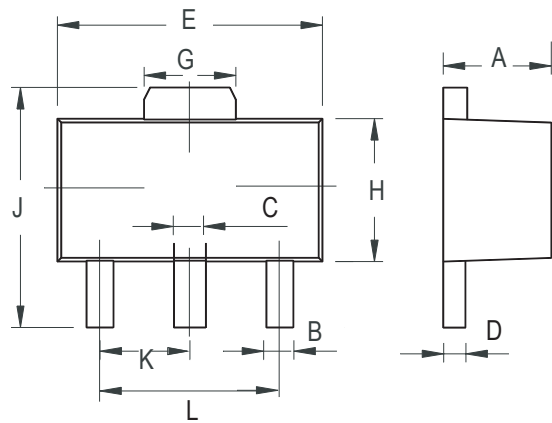


Fig.4 Collector-emitter saturation voltage vs collector current

SOT-89 Outline Dimensions

unit:mm



SOT-89		
Dim	Min	Max
A	1.400	1.600
B	0.320	0.520
C	0.360	0.560
D	0.350	0.440
E	4.400	4.600
G	1.400	1.800
H	2.300	2.600
J	3.940	4.250
K	1.500TYP	
L	2.900	3.100