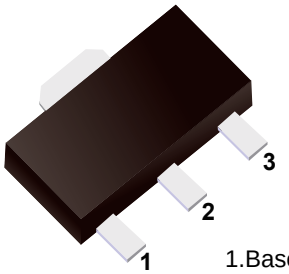
PNP Transistors



1.Base
2.Collector
3.Emitter

SOT-89

Features

- Low $V_{CE(sat)}$.

  $V_{CE(sat)}$ = -0.5V (Typ.)

  (I_C/I_B = -2A / -0.2A)

Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Rating	Unit
Collector-base Voltage	V_{CBO}	-40	V
Collector-emitter Voltage	V_{CEO}	-32	V
Emitter-base Voltage	V_{EBO}	-5	V
Collector current	I_C	-2	A
	I_{CP} *	-3	A
Collector power dissipation	P_C	0.5	W
Jumction temperature	T_j	150	℃
Storage temperature	T_{stg}	-55 to +150	℃

* PW=100ms

Electrical Characteristics (Ta=25℃)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltae	BV_{CBO}	I_C = -50 uA	-40			V
Collector-emitter breakdown voltage	BV_{CEO}	I_C = -1mA	-32			V
Emitter-base breakdown voltage	BV_{EBO}	I_E = -50 μ A	-5			V
Collector cutoff current	I_{CBO}	V_{CB} = -20V			-1	uA
Emitter cutoff current	I_{EBO}	V_{EB} = -4V			-1	uA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = -2A , I_B = -0.2A		-0.5	-0.8	V
DC current transfer ratio	h_{FE}	V_{CE} = -3V , I_C = -0.5A	82		390	
Output Capacitance	C_{ob}	V_{CB} = -10V , I_E = 0, f = 1MHz		50		pF
Transition frequency	f_T	V_{CE} = -5V , I_E = 0.5A , f = 30MHz		100		MHz

h_{FE} Classification

Type	2SB1188-P	2SB1188-Q	2SB1188-R
Range	82-180	120-270	180-390
Marking	BCP*	BCQ*	BCR*

Typical Characteristics

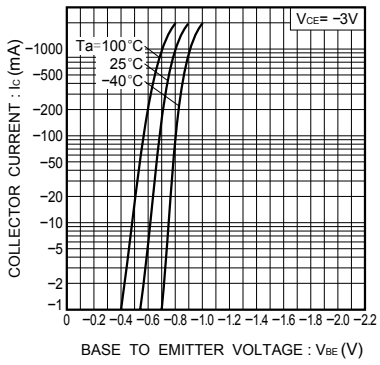


Fig.1 Grounded emitter propagation characteristics

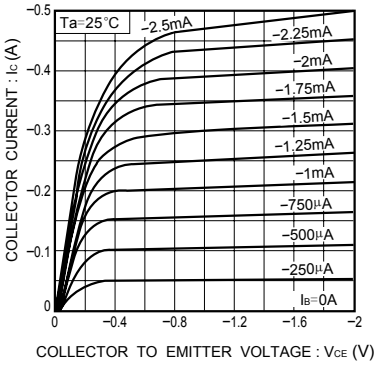


Fig.2 Grounded emitter output characteristics

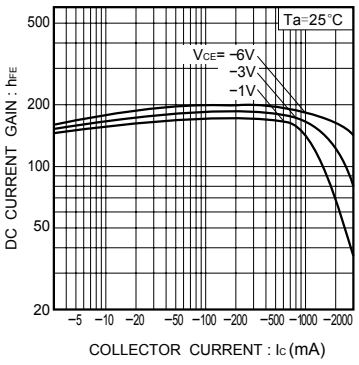


Fig.3 DC current gain vs. collector curren (I)

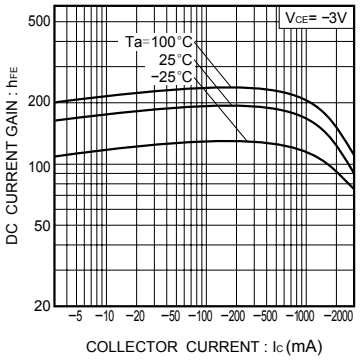


Fig.4 DC current gain vs. collector current (II)

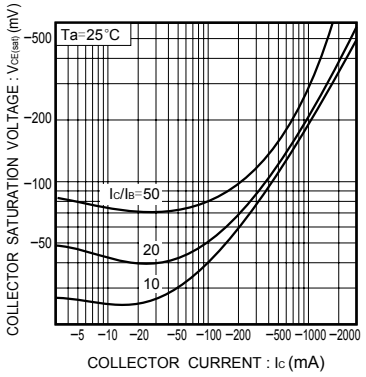


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

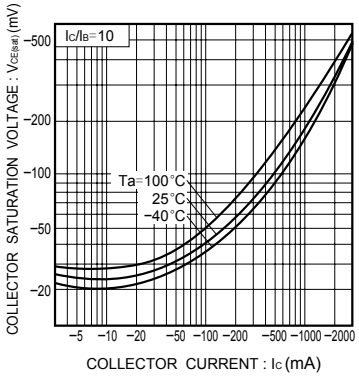


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

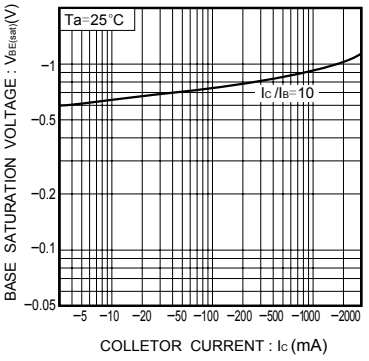


Fig.7 Base-emitter saturation voltage vs. collector current

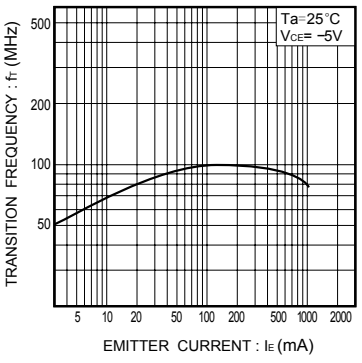


Fig.8 Gain bandwidth product vs. emitter current

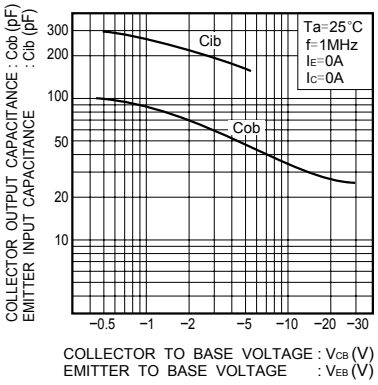


Fig.9 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

Typical Characteristics

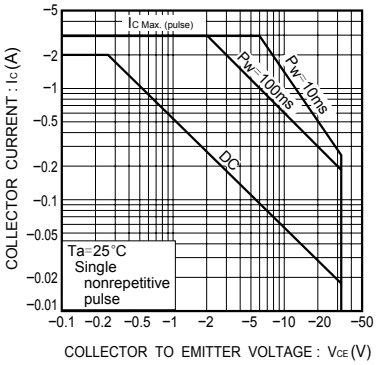


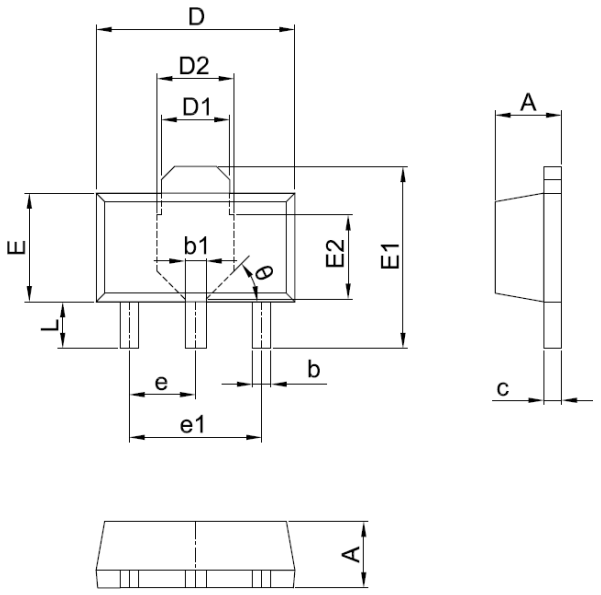
Fig.10 Safe operation area

Ordering information

Package	Packing Description	Base Quantity	Packing Quantity
SOT-89	Tape/Reel,7"reel	1000pcs/Reel	6000PCS/Box 30000PCS/Carton

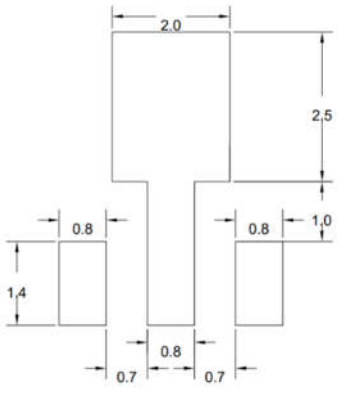
Package Dimensions

SOT-89



Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.40	1.60	0.055	0.063
b	0.32	0.52	0.013	0.020
b1	0.38	0.58	0.015	0.023
c	0.35	0.45	0.014	0.018
D	4.40	4.60	0.173	0.181
D1	1.45	1.65	0.057	0.065
D2	1.70	1.80	0.067	0.071
E	2.30	2.60	0.091	0.102
E1	3.95	4.25	0.156	0.167
E2	1.80	2.00	0.071	0.079
e	1.40	1.60	0.055	0.063
e1	2.80	3.20	0.110	0.126
L	0.90	1.20	0.035	0.047

The recommended mounting pad size



UNIT:MM

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