

2SB1188

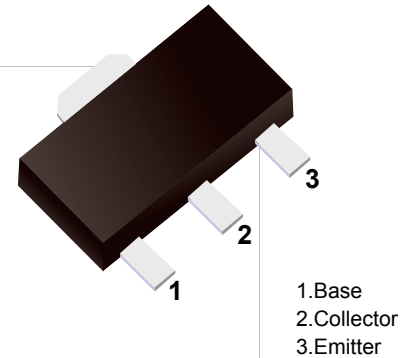
PNP Transistors

Features

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

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

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



■ Simplified outline(SOT-89)

1.Base
2.Collector
3.Emitter

Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

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
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

* $PW=100\text{ms}$

Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	BV_{CBO}	$I_C = -50 \mu\text{A}$	-40			V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C = -1\text{mA}$	-32			V
Emitter-base breakdown voltage	BV_{EBO}	$I_E = -50 \mu\text{A}$	-5			V
Collector cutoff current	I_{CBO}	$V_{CB} = -20\text{V}$			-1	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = -4\text{V}$			-1	μA
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}	$V_{CE} = -3\text{V}, I_C = -0.5A$	82		390	
Output Capacitance	C_{ob}	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$		50		pF
Transition frequency	f_T	$V_{CE} = -5\text{V}, I_E = 0.5A, f = 30\text{MHz}$		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

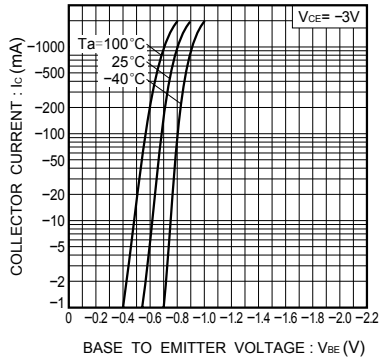


Fig.1 Grounded emitter propagation characteristics

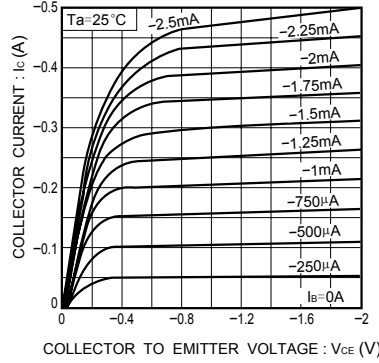


Fig.2 Grounded emitter output characteristics

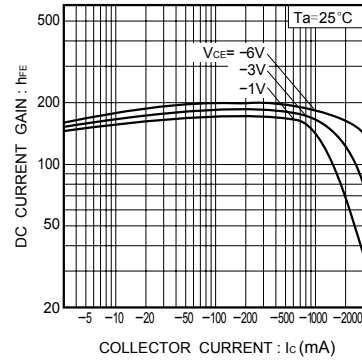


Fig.3 DC current gain vs. collector current (I)

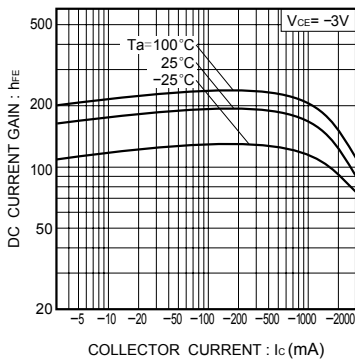


Fig.4 DC current gain vs. collector current (II)

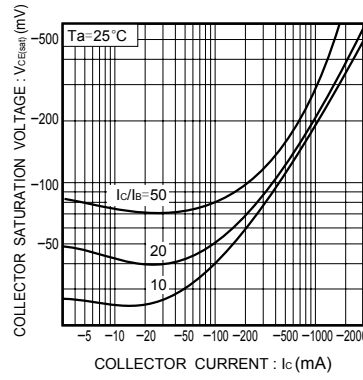


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

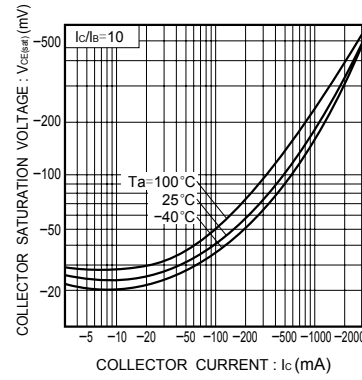


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

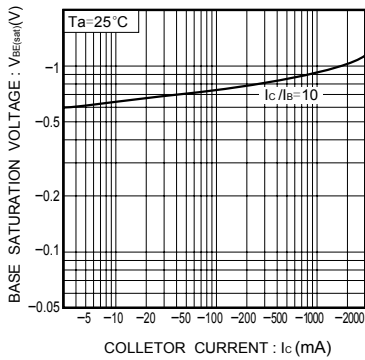


Fig.7 Base-emitter saturation voltage vs. collector current

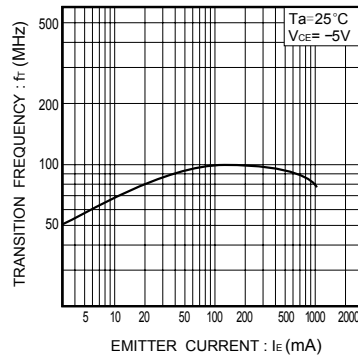


Fig.8 Gain bandwidth product vs. emitter current

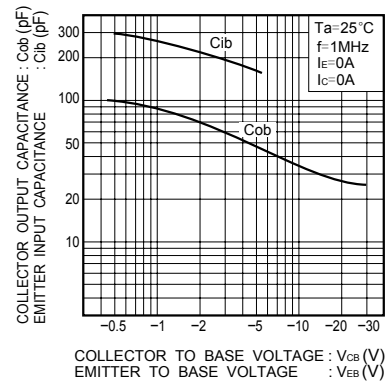


Fig.9 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

■ Typical Characteristics

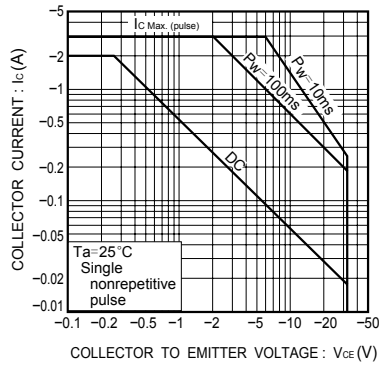
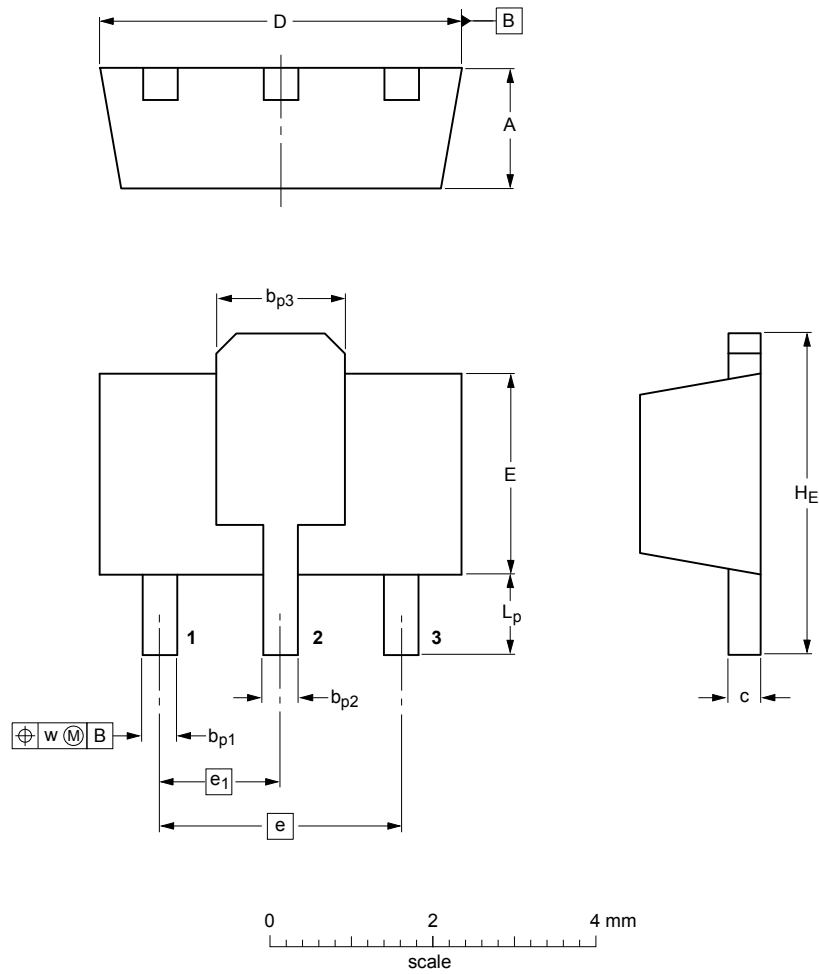


Fig.10 Safe operation area

■ SOT-89



DIMENSIONS (mm are the original dimensions)

UNIT	A	b_{p1}	b_{p2}	b_{p3}	c	D	E	e	e_1	H_E	L_p	w
mm	1.6	0.48	0.53	1.8	0.44	4.6	2.6	3.0	1.5	4.25	1.2	0.13
	1.4	0.35	0.40	1.4	0.23	4.4	2.4					