2SB1188

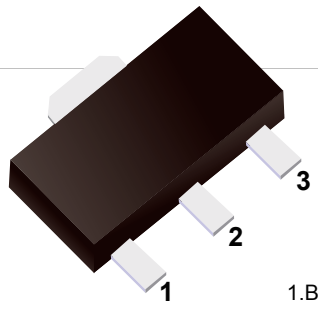
PNP Transistors

■ Features

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

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

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



1.Base
2.Collector
3.Emitter

■ **Simplified outline(SOT-89)**

■ Absolute Maximum Ratings 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 Characterisitics

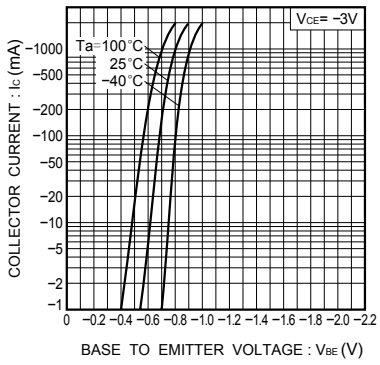


Fig.1 Grounded emitter propagation characteristics

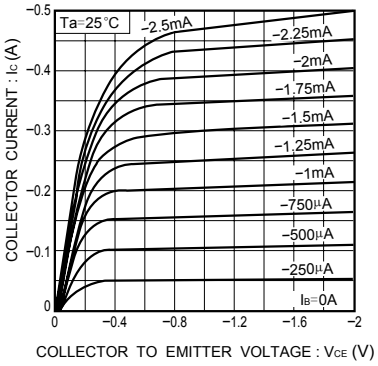


Fig.2 Grounded emitter output characteristics

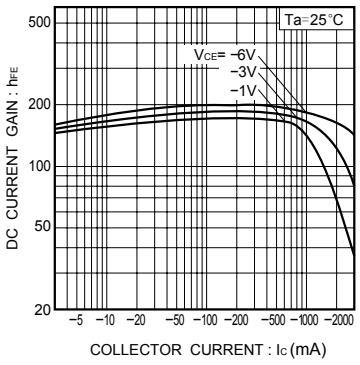


Fig.3 DC current gain vs. collector curren (I)

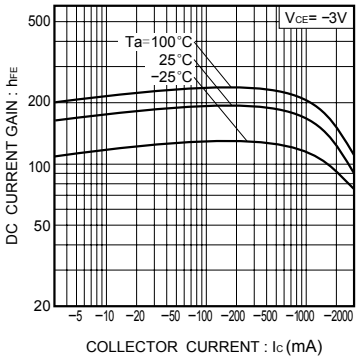


Fig.4 DC current gain vs. collector current (II)

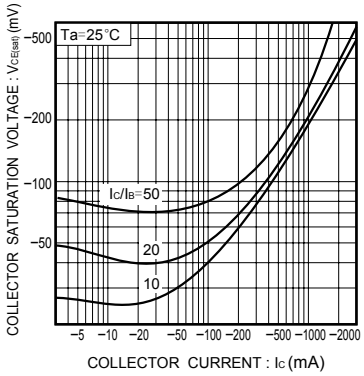


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

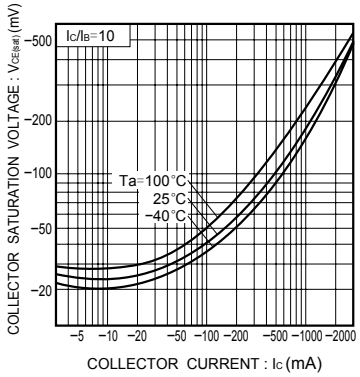


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

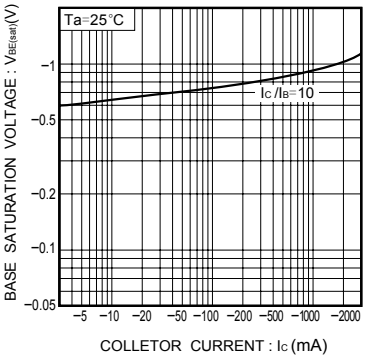


Fig.7 Base-emitter saturation voltage vs. collector current

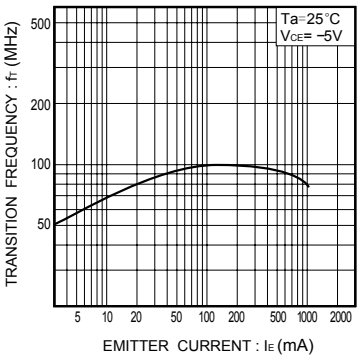


Fig.8 Gain bandwidth product vs. emitter current

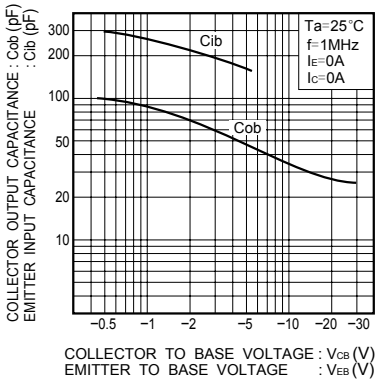


Fig.9 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

■ Typical Characterisitics

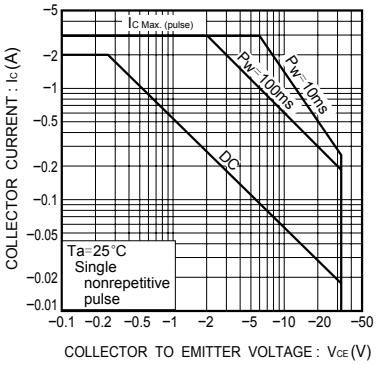
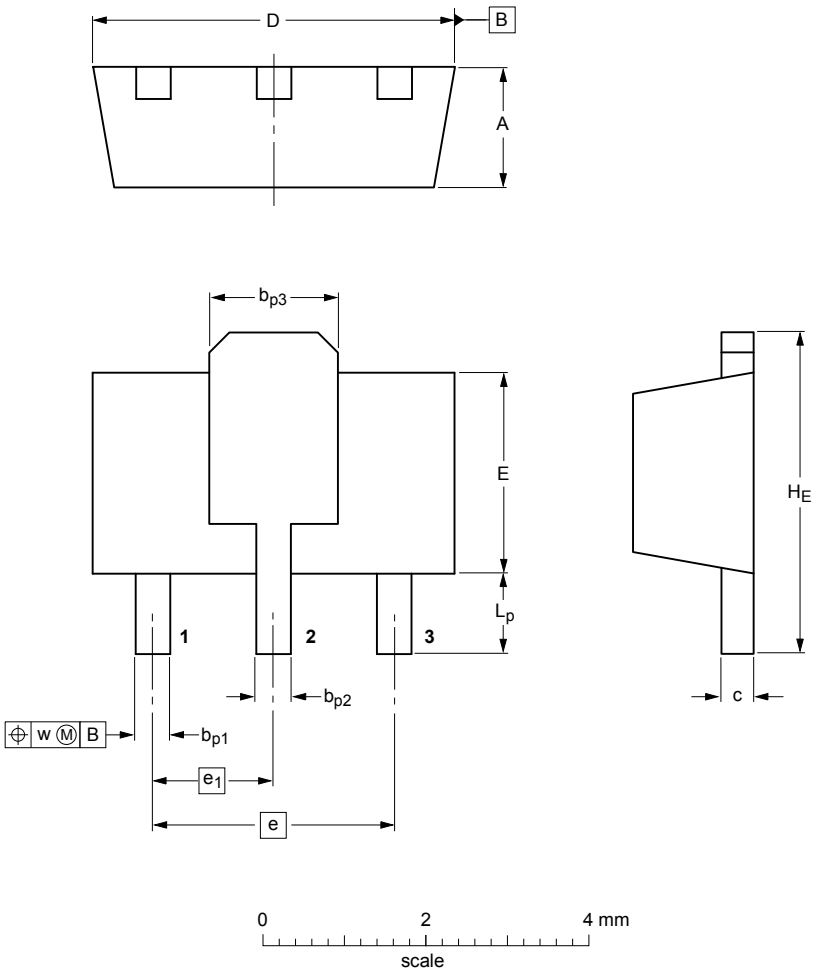


Fig.10 Safe operation area

■ 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 1.4	0.48 0.35	0.53 0.40	1.8 1.4	0.44 0.23	4.6 4.4	2.6 2.4	3.0	1.5	4.25 3.75	1.2 0.8	0.13