

# Medium power transistor (−32V, −2A)

## 2SB1188 / 2SB1182 / 2SB1240

●Features

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

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

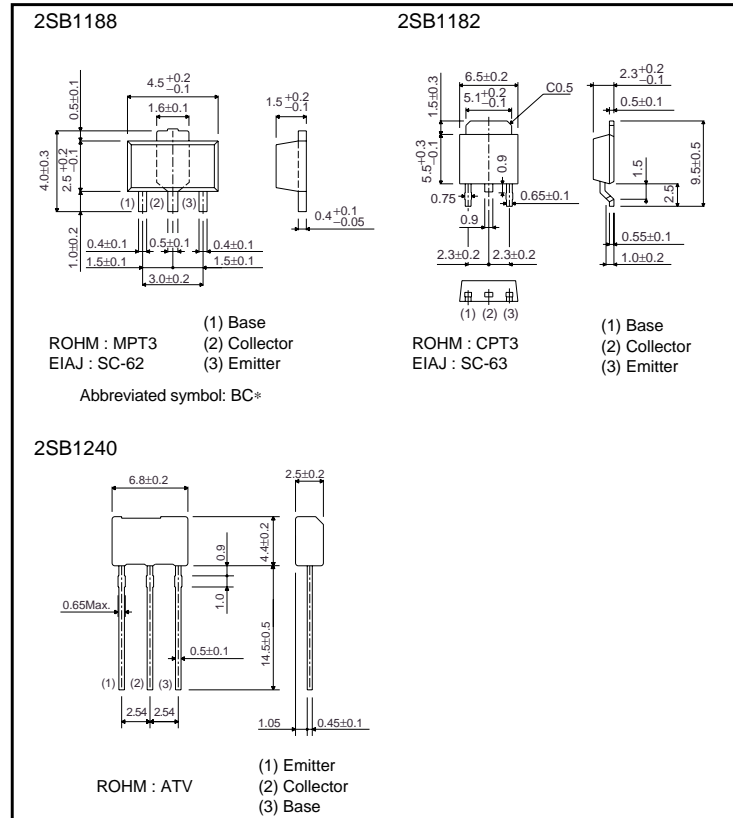
$$(I_C/I_B = -2A / -0.2A)$$

2) Complements the 2SD1766 / 2SD1758 / 2SD1862

●Structure

Epitaxial planar type  
PNP silicon transistor

●External dimensions (Units : mm)



\* Denotes hFE

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	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(DC)
		-3	A(Pulse) *1
Collector power dissipation	$P_C$	0.5	W
		2	W *2
		10	W(Tc=25°C)
	2SB1240	1	W *3
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55~+150	°C

\*1 Single pulse, Pw=100ms

\*2 When mounted on a 40x40x0.7 mm ceramic board.

\*3 Printed circuit board, 1.7mm thick, collector copper plating 100mm<sup>2</sup> or larger.

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●Electrical characteristics (Ta=25°C)

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

\* Measured using pulse current.

●Packaging specifications and  $h_{FE}$

Type	$h_{FE}$	Package	Taping		
		Code	T100	TL	TV2
		Basic ordering unit (pieces)	1000	2500	2500
2SB1188	PQR	○	-	-	-
2SB1182	PQR	-	○	-	-
2SB1240	PQR	-	-	○	-

$h_{FE}$  values are classified as follows :

Item	P	Q	R
$h_{FE}$	82~180	120~270	180~390

●Electrical characteristic curves

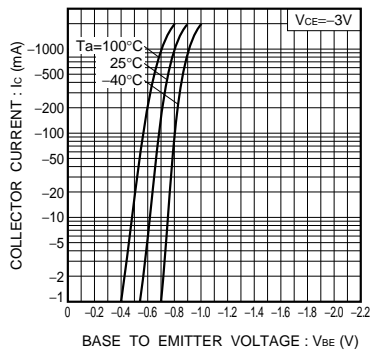


Fig.1 Grounded emitter propagation characteristics

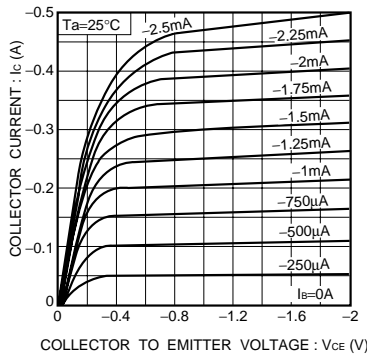


Fig.2 Grounded emitter output characteristics

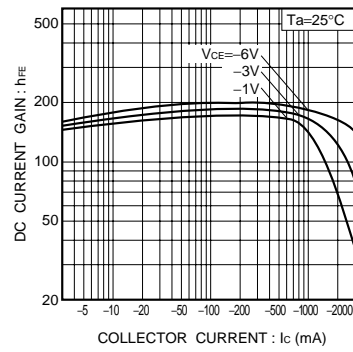


Fig.3 DC current gain vs. collector current ( I )

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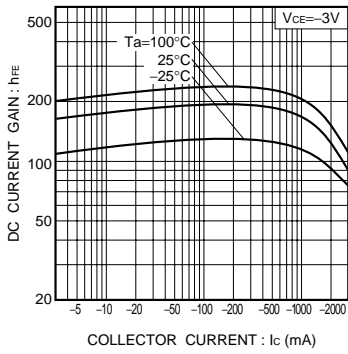


Fig.4 DC current gain vs. collector current ( II )

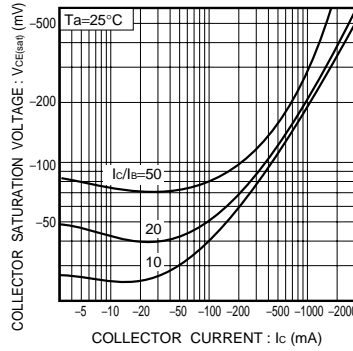


Fig.5 Collector-emitter saturation voltage vs. collector current ( I )

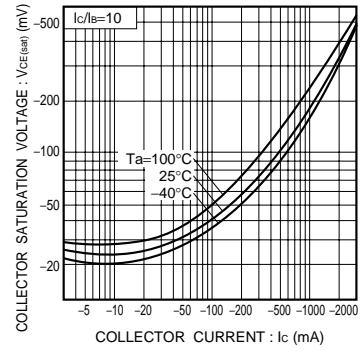


Fig.6 Collector-emitter saturation voltage vs. collector current ( II )

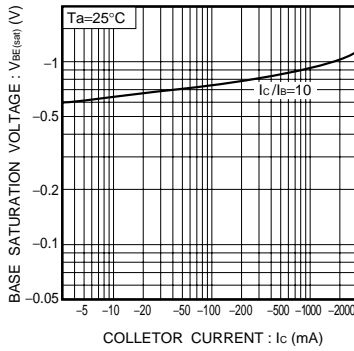


Fig.7 Base-emitter saturation voltage vs. collector current

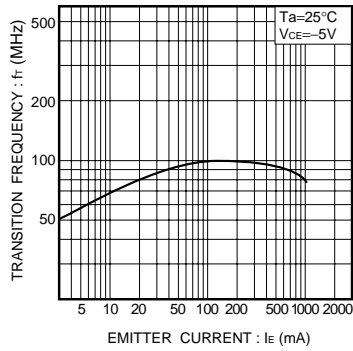


Fig.8 Gain bandwidth product vs. emitter current

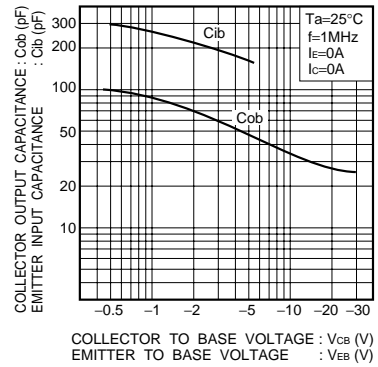


Fig.9 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage

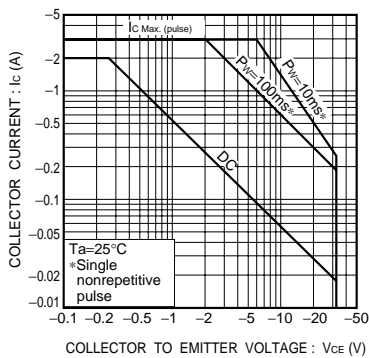


Fig.10 Safe operation area (2SB1188)

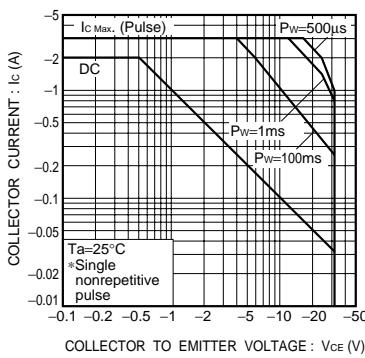


Fig.11 Safe operation area (2SB1182)

This datasheet has been download from:

[www.datasheetcatalog.com](http://www.datasheetcatalog.com)

Datasheets for electronics components.