

# Power Transistor (−80V, −1A)

## 2SB1260 / 2SB1181 / 2SB1241

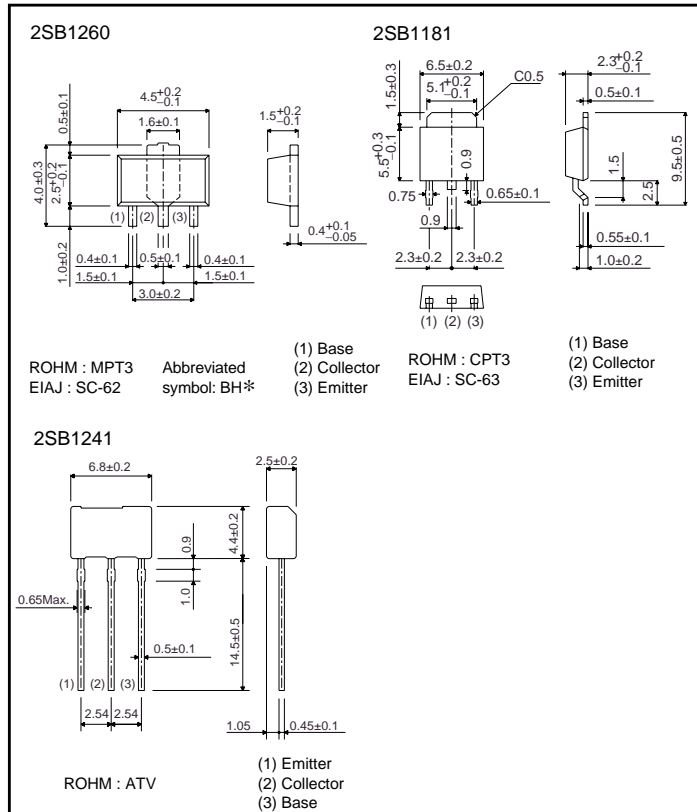
●Features

- 1) High breakdown voltage and high current.  
 $BV_{CEO} = -80V, I_C = -1A$
- 2) Good  $h_{FE}$  linearity.
- 3) Low  $V_{CE(sat)}$ .
- 4) Complements the 2SD1898 / 2SD1863 / 2SD1733.

●Structure

Epitaxial planar type  
 PNP silicon transistor

●External dimensions (Units : mm)



\* Denotes  $h_{FE}$

●Absolute maximum ratings ( $T_a = 25^\circ C$ )

Parameter	Symbol	Limits	Unit
Collector-base voltage	$V_{CB0}$	-80	V
Collector-emitter voltage	$V_{CEO}$	-80	V
Emitter-base voltage	$V_{EB0}$	-5	V
Collector current	$I_C$	-1	A(DC)
	$I_{CP}$	-2	A(Pulse) *1
Collector power dissipation	2SB1260	0.5	W *2
	2SB1241, 2SB1181	2	
	2SB1181	10	W( $T_c = 25^\circ C$ ) *3
Junction temperature	$T_j$	150	$^\circ C$
Storage temperature	$T_{stg}$	-55~+150	$^\circ C$

\*1 Single pulse,  $P_w = 100ms$

\*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 <sub>CBO</sub>	-80	-	-	V	I <sub>c</sub> =-50μA	
Collector-emitter breakdown voltage	BV <sub>CEO</sub>	-80	-	-	V	I <sub>c</sub> =-1mA	
Emitter-base breakdown voltage	BV <sub>EBO</sub>	-5	-	-	V	I <sub>E</sub> =-50μA	
Collector cutoff current	I <sub>CBO</sub>	-	-	-1	μA	V <sub>CB</sub> =-60V	
Emitter cutoff current	I <sub>EBO</sub>	-	-	-1	μA	V <sub>EB</sub> =-4V	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	-	-	-0.4	V	I <sub>c</sub> /I <sub>E</sub> =-500mA/-50mA	
DC current transfer ratio	2SB1260, 2SB1181	h <sub>FE</sub>	82	-	390	-	V <sub>CE</sub> =-3V, I <sub>c</sub> =-0.1A
	2SB1241		120	-	390	-	
Transition frequency	2SB1260, 2SB1241	f <sub>r</sub>	-	100	-	MHz	V <sub>CE</sub> =-5V, I <sub>E</sub> =50mA, f=30MHz
	2SB1181		-	100	-	MHz	V <sub>CE</sub> =-10V, I <sub>E</sub> =50mA, f=30MHz
Output capacitance	C <sub>ob</sub>	-	25	-	pF	V <sub>CB</sub> =-10V, I <sub>E</sub> =0A, f=1MHz	

●Packaging specifications and h<sub>FE</sub>

Type	h <sub>FE</sub>	Package	Taping		
		Code	TL	TV2	T100
		Basic ordering unit (pieces)	2500	2500	1000
2SB1260	PQR		-	-	○
2SB1241	QR		-	○	-
2SB1181	PQR		○	-	-

h<sub>FE</sub> values are classified as follows :

Item	P	Q	R
h <sub>FE</sub>	82~180	120~270	180~390

●Electrical characteristic curves

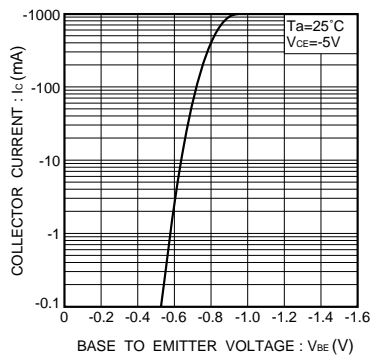


Fig.1 Grounded emitter propagation characteristics

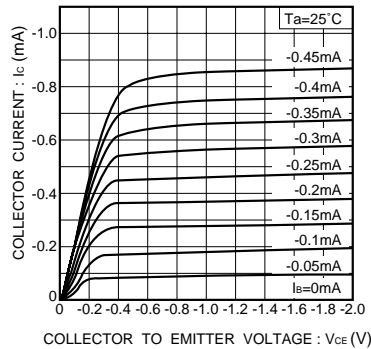


Fig.2 Grounded emitter output characteristics

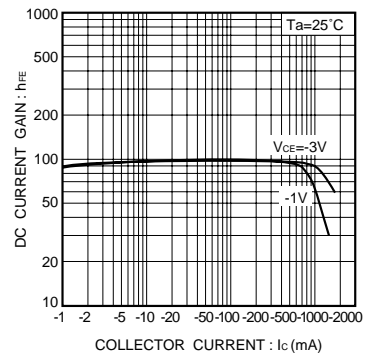


Fig.3 DC current gain vs. collector current

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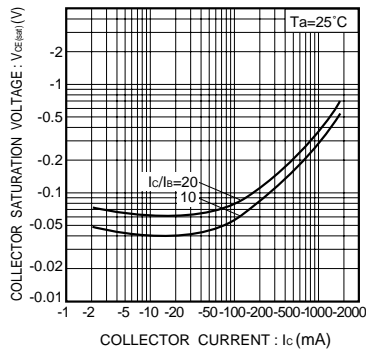


Fig. 4 Collector-emitter saturation voltage vs. collector current

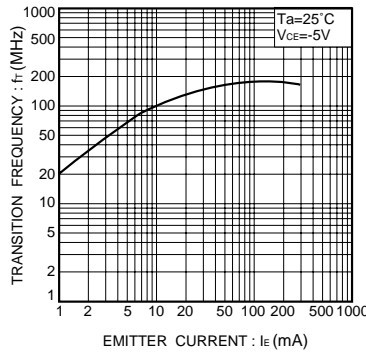


Fig. 5 Gain bandwidth product vs. emitter current

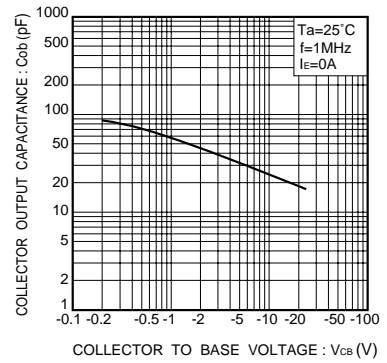


Fig. 6 Collector output capacitance vs. collector-base voltage

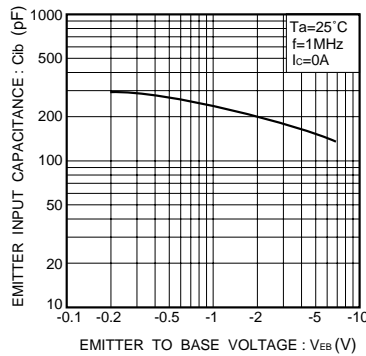


Fig. 7 Emitter input capacitance vs. emitter-base voltage

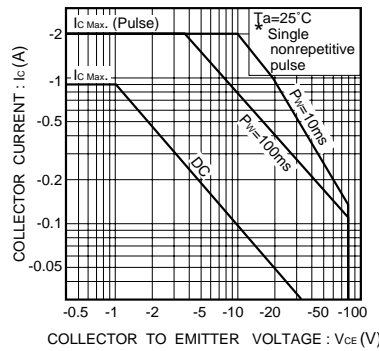


Fig. 8 Safe operating area (2SB1260)

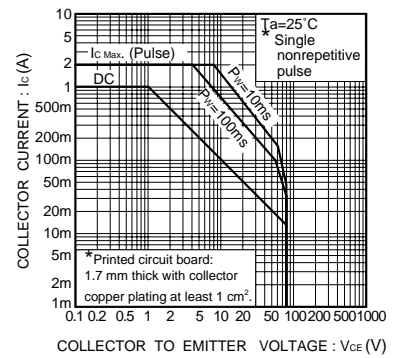


Fig. 9 Safe operating area (2SB1241)

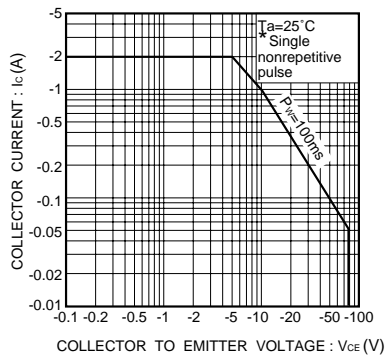


Fig. 10 Safe operating area (2SB1181)