Power Transistor (−80V, −1A)

2SB1260 / 2SB1181 / 2SB1241

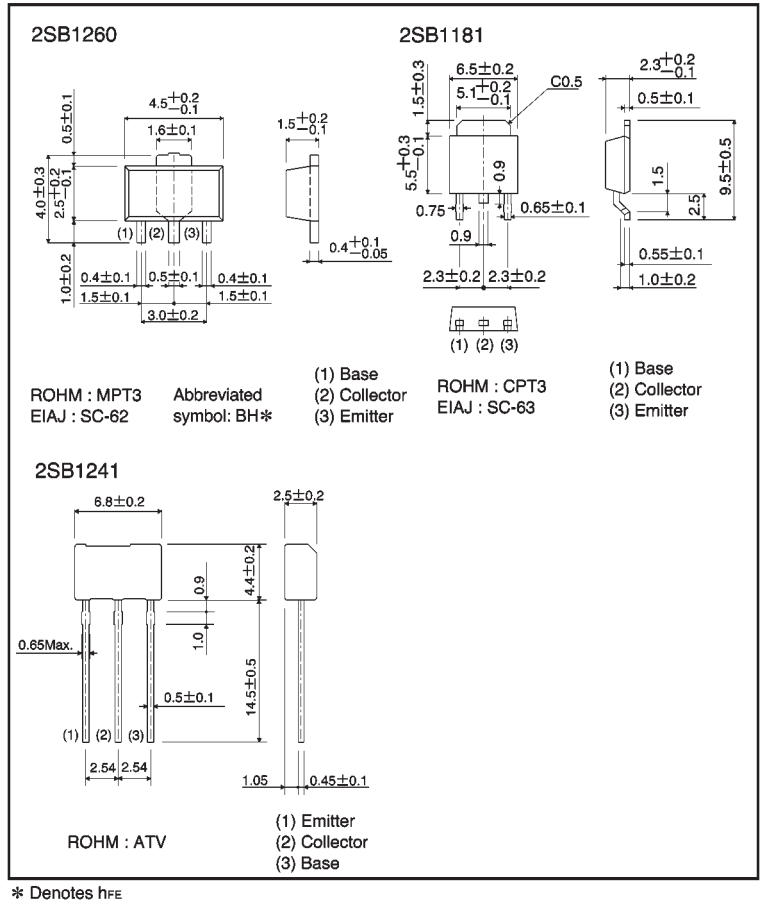
●Features

1) High breakdown voltage and high current.
   V_{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 (Ta = 25°C)

Parameter		Symbol	Limits	Unit
Collector-base voltage		V_{CBO}	−80	V
Collector-emitter voltage		V_{CEO}	−80	V
Emitter-base voltage		V_{EBO}	−5	V
Collector current		I_C	−1	A (DC)
		I_{CP}	−2	A (Pulse) ∗1
Collector power dissipation	2SB1260	P_C	0.5	W ∗2
			2	∗3
	2SB1241, 2SB1181		1	
	2SB1181		10	W (Tc=25℃)
Junction temperature		Tj	150	℃
Storage temperature		Tstg	−55～+150	℃

∗1 Single pulse, Pw=100ms
∗2 When mounted on a 40×40×0.7 mm ceramic board.
∗3 Printed circuit board, 1.7mm thick, collector copper plating 100mm² or larger.

●Electrical characteristics (Ta = 25°C)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage		BV_{CBO}	−80	—	—	V	I_C=−50 μA
Collector-emitter breakdown voltage		BV_{CEO}	−80	—	—	V	I_C=−1mA
Emitter-base breakdown voltage		BV_{EBO}	−5	—	—	V	I_E=−50 μA
Collector cutoff current		I_{CBO}	—	—	−1	μA	V_{CB}=−60V
Emitter cutoff current		I_{EBO}	—	—	−1	μA	V_{EB}=−4V
Collector-emitter saturation voltage		$V_{CE(sat)}$	—	—	−0.4	V	I_C/I_B=−500mA/−50mA
DC current transfer ratio	2SB1260, 2SB1181	h_{FE}	82	—	390	—	V_{CE}=−3V, I_C=−0.1A
	2SB1241		120	—	390	—	
Transition frequency	2SB1260, 2SB1241	f_T	—	100	—	MHz	V_{CE}=−5V, I_E=50mA, f=30MHz
	2SB1181		—	100	—	MHz	V_{CE}=−10V, I_E=50mA, f=30MHz
Output capacitance		Cob	—	25	—	pF	V_{CB}=−10V, I_E=0A, f=1MHz

●Packaging specifications and h_{FE}

Type	h_{FE}	Package	Taping		
		Code	TL	TV2	T100
		Basic ordering unit (pieces)	2500	2500	1000
2SB1260	PQR		—	—	○
2SB1241	QR		—	○	—
2SB1181	PQR		○	—	—

h_{FE} values are classified as follows :

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

●Electrical characteristic curves

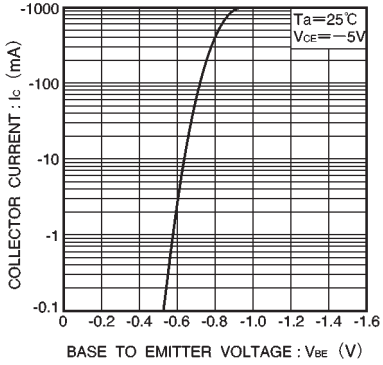


Fig.1 Grounded emitter propagation characteristics

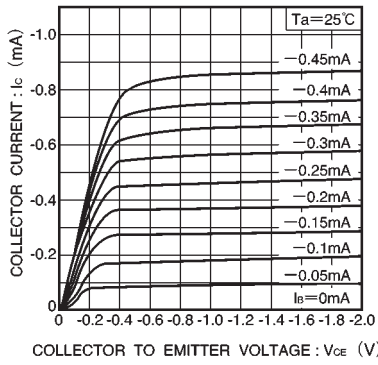


Fig.2 Grounded emitter output characteristics

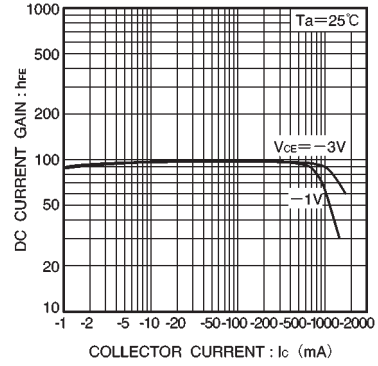


Fig.3 DC current gain vs. collector current

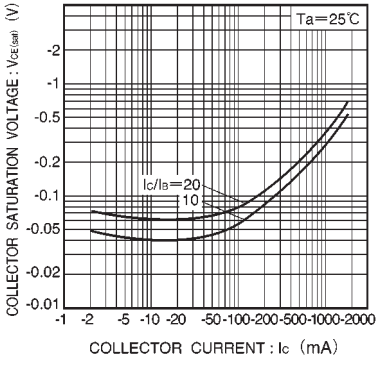


Fig.4 Collector-emitter saturation voltage vs. collector current

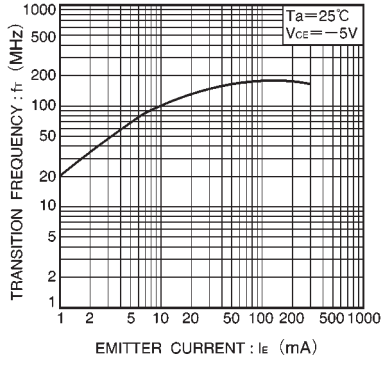


Fig.5 Gain bandwidth product vs. emitter current

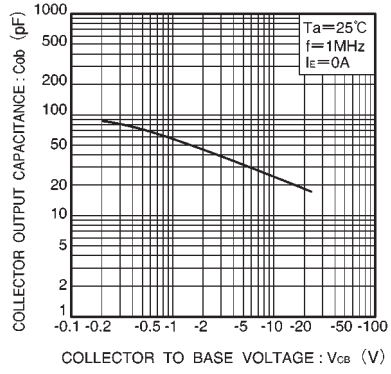


Fig.6 Collector output capacitance vs. collector-base voltage

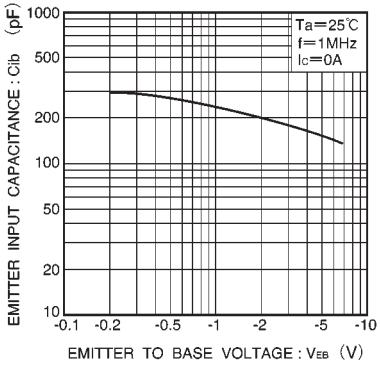


Fig. 7 Emitter input capacitance vs. emitter-base voltage

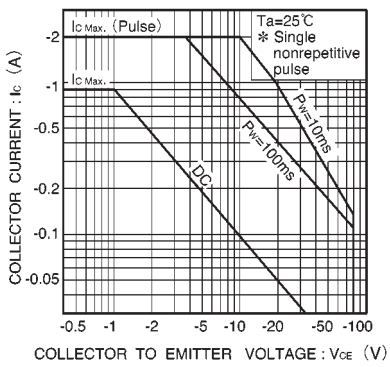


Fig. 8 Safe operating area (2SB1260)

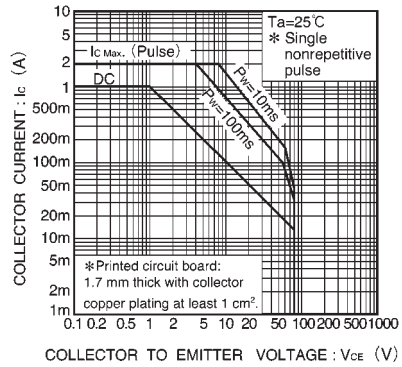


Fig.9 Safe operating area (2SB1241)

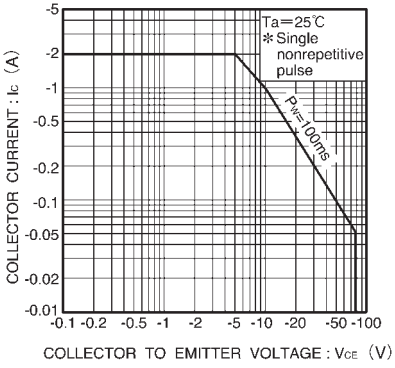


Fig.10 Safe operating area
(2SB1181)