Power Transistor (–80V, –1A)

2SB1260 / 2SB1181 / 2SB1241

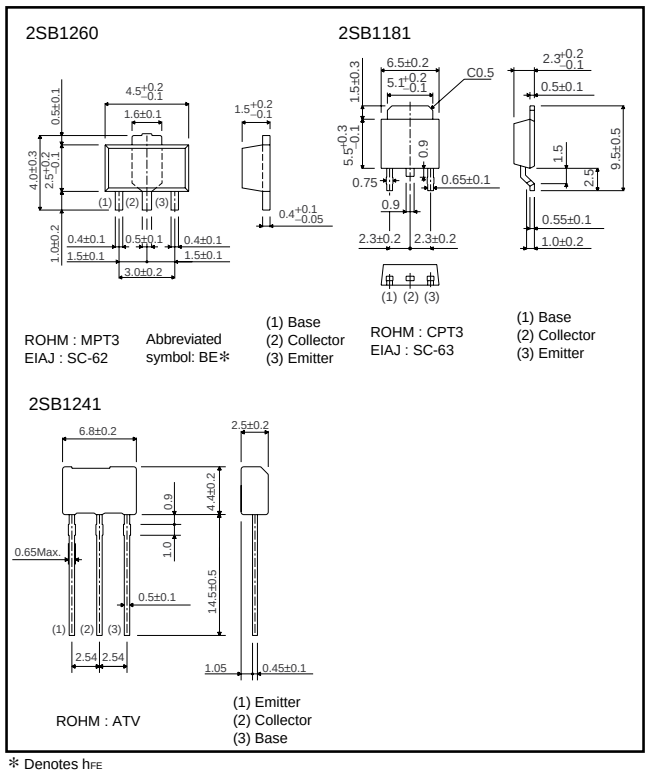
●Features

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

●Structure

Epitaxial planar type
PNP silicon transistor

●External dimensions (Unit : 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 ∗1	A (Pulse)
Collector power dissipation	2SB1260	P_C	0.5	W
			2 ∗2	
	2SB1241, 2SB1181		1 ∗3	
	2SB1181		10	W (Tc=25°C)
Junction temperature		Tj	150	°C
Storage temperature		Tstg	–55 to 150	°C

∗1 2SB1260 : Pw=20ms duty=1/2
2SB1241 : Single pulse, Pw=100ms
∗2 2SB1260 : When mounted on a 40×40×0.7 mm ceramic board.
∗3 2SB1241 : 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= –50μA
Collector-emitter breakdown voltage		BV_{CEO}	–80	–	–	V	I_C= –1mA
Emitter-base breakdown voltage		BV_{EBO}	–5	–	–	V	I_E= –50μA
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	2SB1181	f_T	–	100	–	MHz	V_{CE}= –10V, I_E=50mA, f=100MHz
Output capacitance	2SB1260	Cob	–	20	–	pF	V_{CB}= –10V I_E=0A f=1MHz
	2SB1181, 2SB1241		–	25	–	pF	

●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 to 180	120 to 270	180 to 390

●Electrical characteristic curves

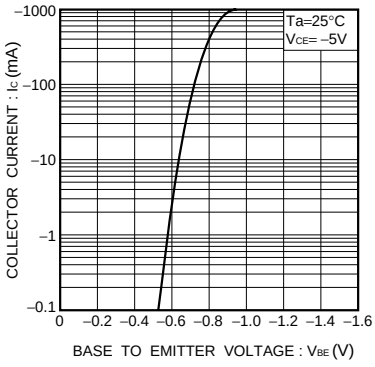


Fig.1 Grounded emitter propagation characteristics

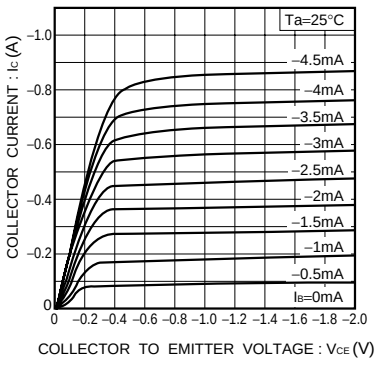


Fig.2 Grounded emitter output characteristics

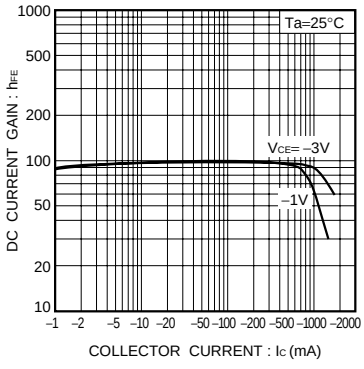


Fig.3 DC current gain vs. collector current

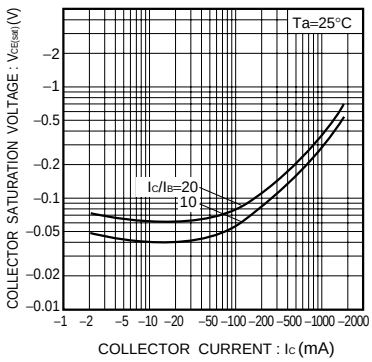


Fig.4 Collector-emitter saturation voltage vs. collector current

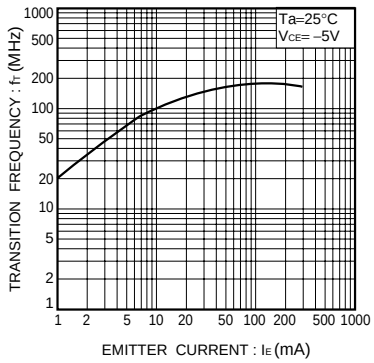


Fig.5 Gain bandwidth product vs. emitter current

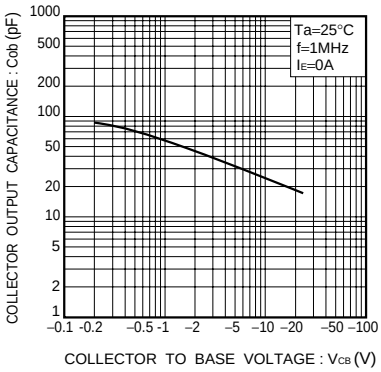


Fig.6 Collector output capacitance vs. collector-base voltage

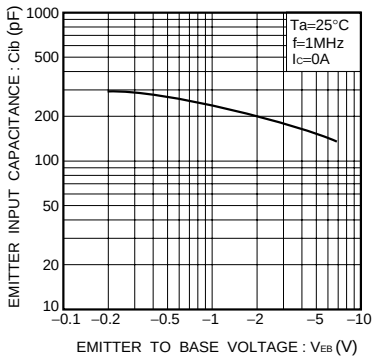


Fig. 7 Emitter input capacitance vs. emitter-base voltage

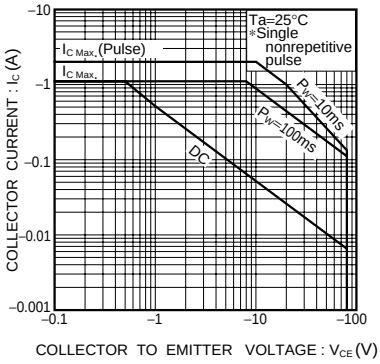


Fig.8 Safe operating area (2SB1260)

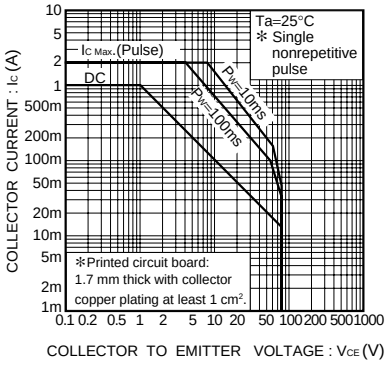


Fig.9 Safe operating area (2SB1241)

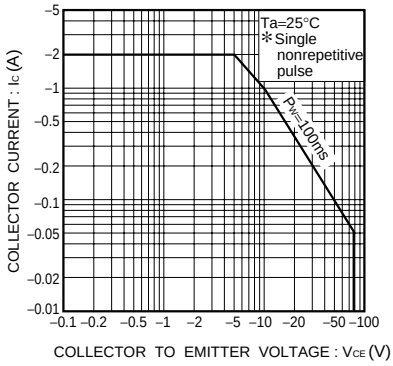


Fig.10 Safe operating area (2SB1181)

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