

Power Transistor (−80V, −1A)

2SB1260 / 2SB1181 / 2SB1241

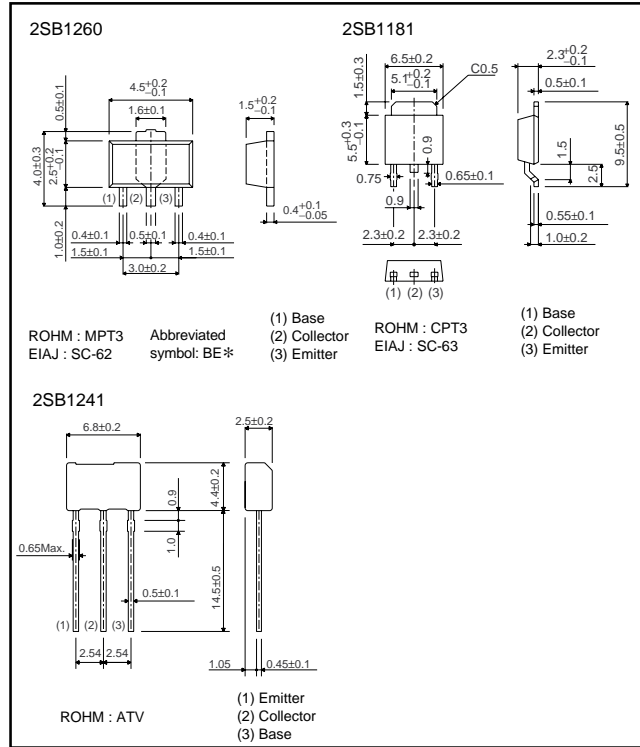
●Features

- 1) High breakdown voltage and high current.
 $V_{CE0} = -80V$, $I_c = -1A$
- 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 (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	0.5	W
	2SB1241, 2SB1181	2 *2	
	2SB1181	1 *3	
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-55 to 150	°C

*1 2SB1260 : $P_w=20ms$ duty=1/2
 2SB1241 : Single pulse, $P_w=100ms$

*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.

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●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions	
Collector-base breakdown voltage	BV _{CB0}	-80	-	-	V	I _C = -50μA	
Collector-emitter breakdown voltage	BV _{CEO}	-80	-	-	V	I _C = -1mA	
Emitter-base breakdown voltage	BV _{EB0}	-5	-	-	V	I _E = -50μA	
Collector cutoff current	I _{CB0}	-	-	-1	μA	V _{CB} = -60V	
Emitter cutoff current	I _{EB0}	-	-	-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	C _{ob}	-	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

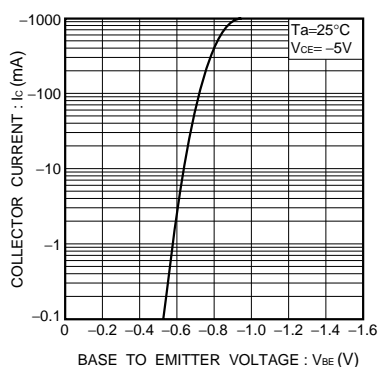


Fig.1 Grounded emitter propagation characteristics

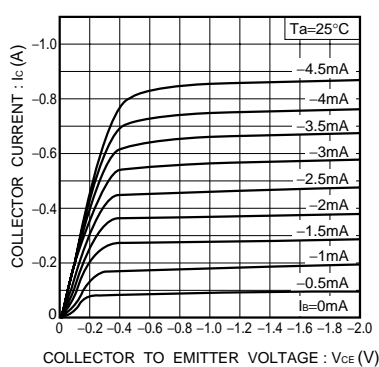


Fig.2 Grounded emitter output characteristics

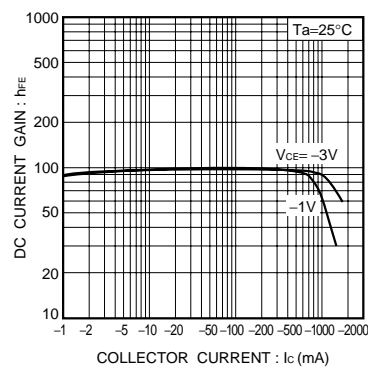


Fig.3 DC current gain vs. collector current

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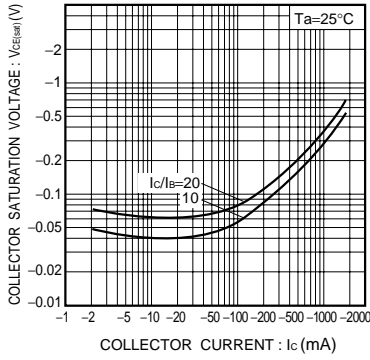


Fig.4 Collector-emitter saturation voltage vs. collector current

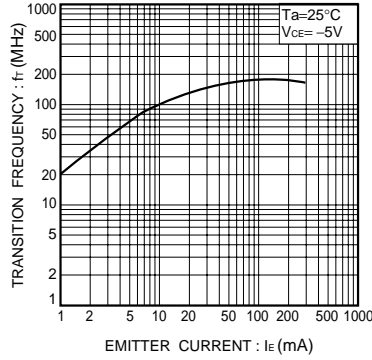


Fig.5 Gain bandwidth product vs. emitter current

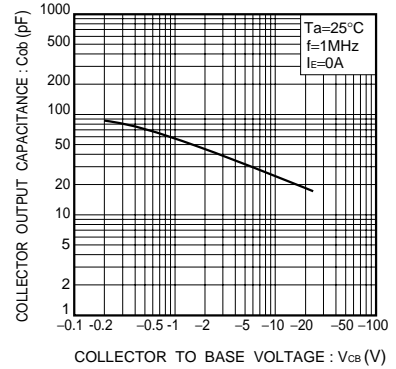


Fig.6 Collector output capacitance vs. collector-base voltage

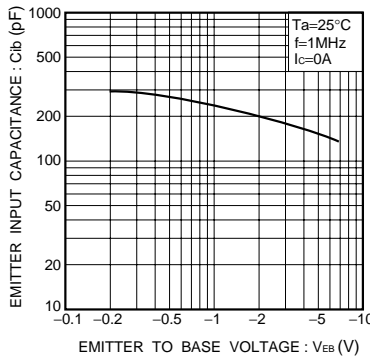


Fig.7 Emitter input capacitance vs. emitter-base voltage

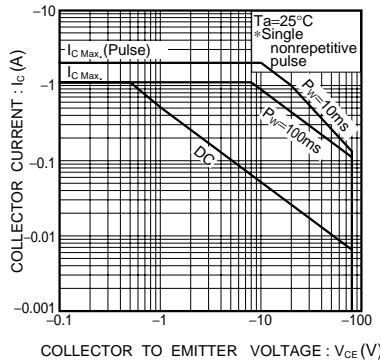


Fig.8 Safe operating area (2SB1260)

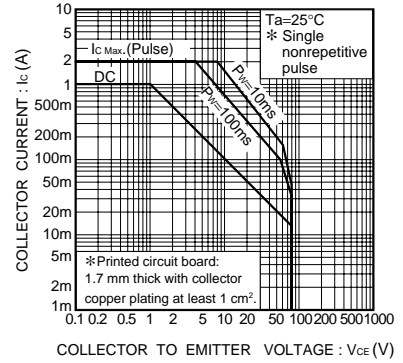


Fig.9 Safe operating area (2SB1241)

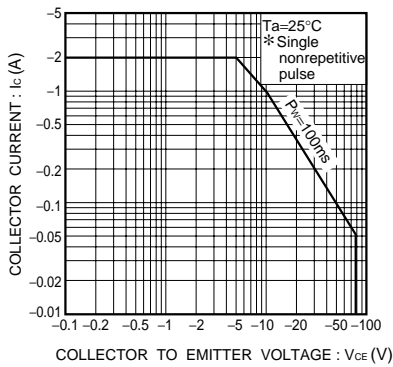


Fig.10 Safe operating area (2SB1181)

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