

Medium Power Transistor (-32V , -1A)

2SB1132 / 2SA1515S / 2SB1237

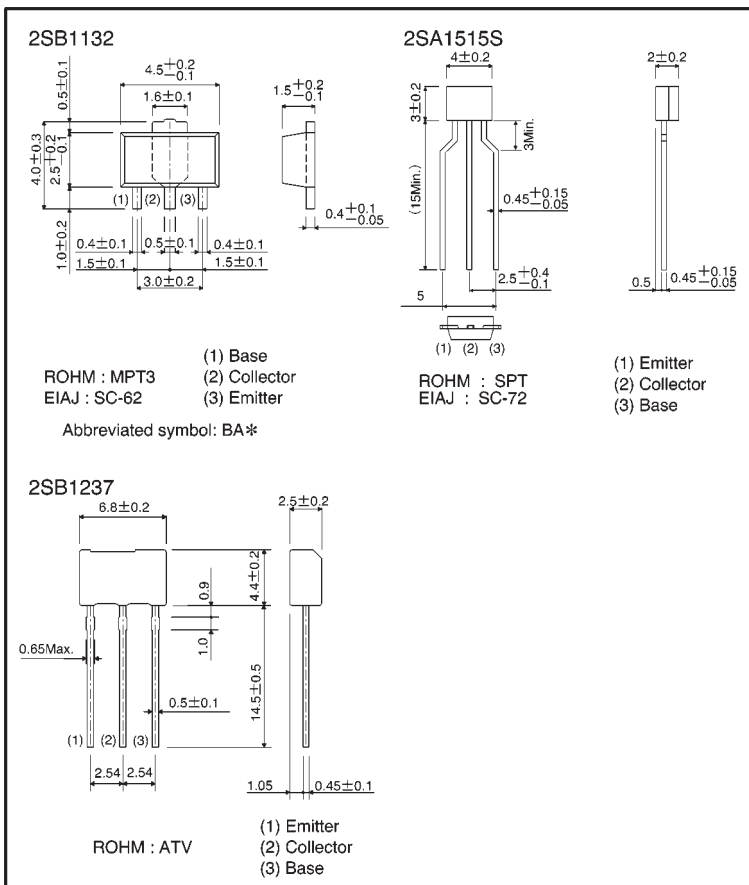
●Features

- 1) Low $V_{CE(sat)}$.
 $V_{CE(sat)} = -0.2\text{V}$ (Typ.)
($I_C / I_B = -500\text{mA} / -50\text{mA}$)
- 2) Compliments 2SD1664 / 2SD1858.

●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}	−40	V
Collector-emitter voltage		V _{CEO}	−32	V
Emitter-base voltage		V _{EBO}	−5	V
Collector current		I _C	−1	A (DC)
			−2	A (Pulse) *1
Collector power dissipation	2SB1132	P _C	0.5	W *2
			2	
	2SA1515S		0.3	
	2SB1237		1	*3
Junction temperature		T _j	150	°C
Storage temperature		T _{stg}	−55~+150	°C

*1 Single pulse, P_w=100ms

*2 When mounted on a 40×40×0.7 mm ceramic board.

*3 Printed circuit board, 1.7 mm 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}	−40	—	—	V	I _C =−50 μA
Collector-emitter breakdown voltage		BV _{CEO}	−32	—	—	V	I _C =−1mA
Emitter-base breakdown voltage		BV _{EBO}	−5	—	—	V	I _E =−50 μA
Collector cutoff current		I _{CBO}	—	—	−0.5	μA	V _{CB} =−20V
Emitter cutoff current		I _{EBO}	—	—	−0.5	μA	V _{EB} =−4V
Collector-emitter saturation voltage		V _{CE(sat)}	—	−0.2	−0.5	V	I _C /I _B =−500mA/−50mA *
DC current transfer ratio	2SB1132, 2SB1237	h _{FE}	82	—	390	—	V _{CE} =−3V, I _C =−0.1A *
	2SA1515S		120	—	390	—	
Transition frequency		f _T	—	150	—	MHz	V _{CE} =−5V, I _E =50mA, f=30MHz
Output capacitance		C _{ob}	—	20	30	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	TP	TU2
		Basic ordering unit (pieces)	1000	5000	2500
2SB1132	PQR		○	—	—
2SA1515S	QR		—	○	—
2SB1237	PQR		—	—	○

h_{FE} values are classified as follows :

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

●Electrical characteristic curves

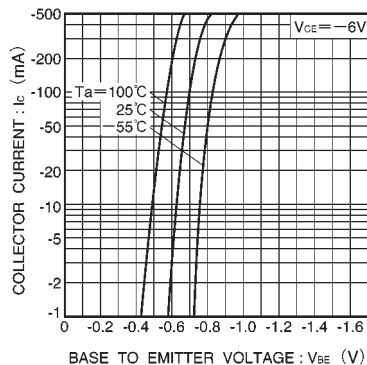


Fig.1 Grounded emitter propagation characteristics

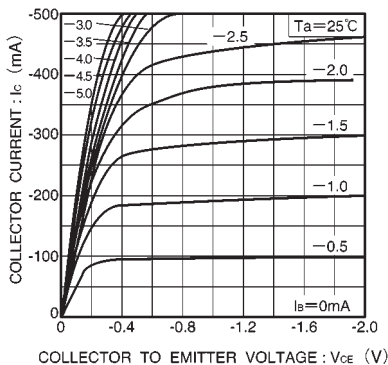


Fig.2 Grounded emitter output characteristics

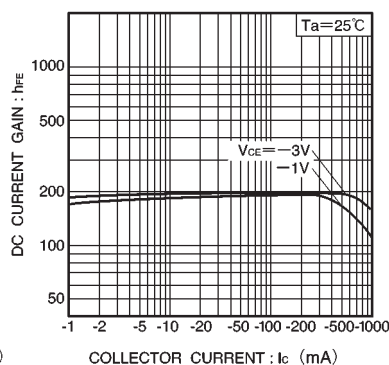
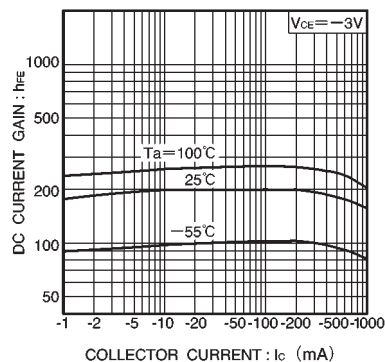
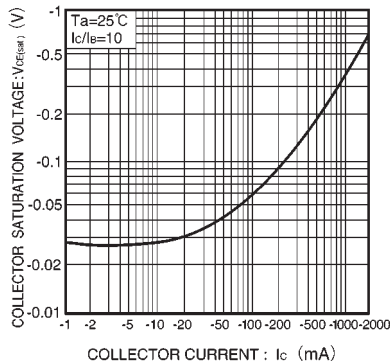
Fig.3 DC current gain vs. collector current (I)Fig.4 DC current gain vs. collector current (II)

Fig.5 Collector-emitter saturation voltage vs. collector current

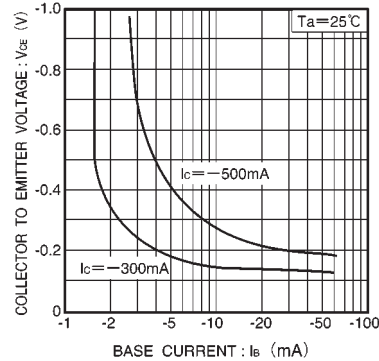


Fig.6 Collector-emitter saturation voltage vs. base current

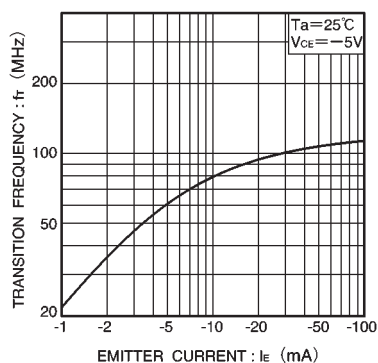


Fig.7 Gain bandwidth product vs. emitter current

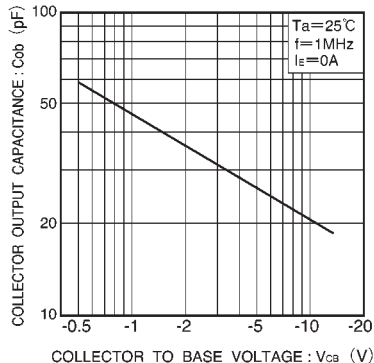


Fig.8 Collector output capacitance vs. collector-base voltage

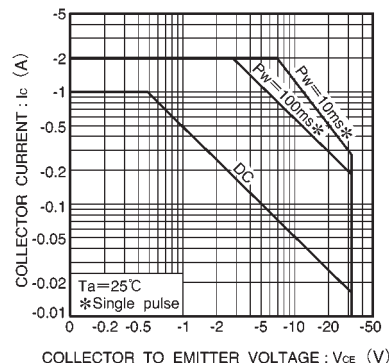


Fig.9 Safe operation area (2SB1132)

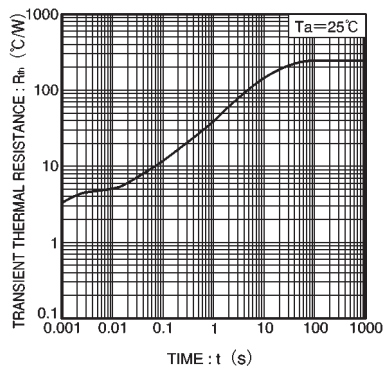


Fig.10 Transient thermal resistance (2SB1132)

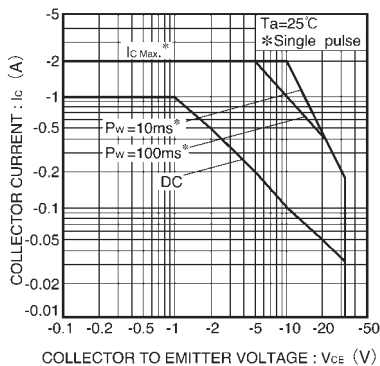


Fig.11 Safe operation area (2SB1237)

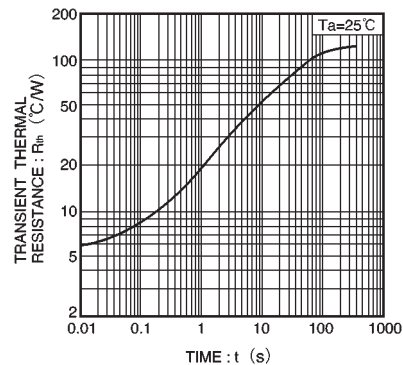


Fig.12 Transient thermal resistance (2SB1237)