

Medium Power Transistor (−32V, −1A)

2SB1132 / 2SA1515S / 2SB1237

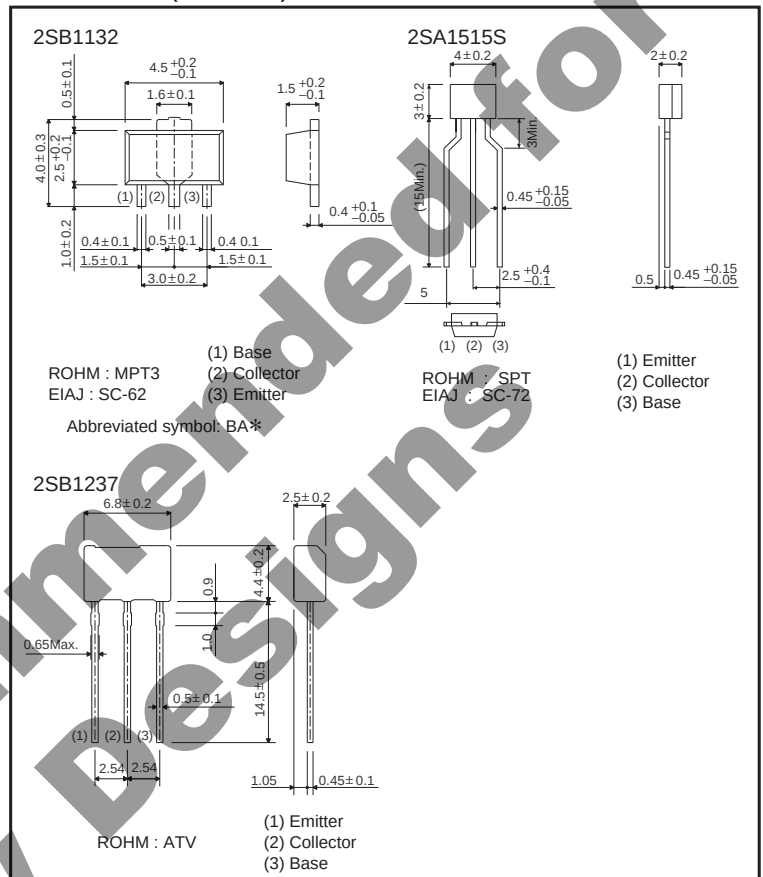
●Features

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

●Structure

Epitaxial planar type
 PNP silicon transistor

●Dimensions (Unit : 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 to +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	$I_C = -50\mu A$
Collector-emitter breakdown voltage		BV_{CEO}	-32	—	—	V	$I_C = -1mA$
Emitter-base breakdown voltage		BV_{EBO}	-5	—	—	V	$I_E = -50\mu A$
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	$I_C/I_E = -500mA/-50mA$ *
DC current transfer ratio	2SB1132, 2SB1237	h_{FE}	120	—	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 Code	Taping		
		Basic ordering unit (pieces)	T100	TP	TU2
2SB1132	QR		○	—	—
2SA1515S	QR		—	○	—
2SB1237	QR		—	—	○

 h_{FE} values are classified as follows :

Item	Q	R
h_{FE}	120 to 270	180 to 390

●Electrical characteristics curves

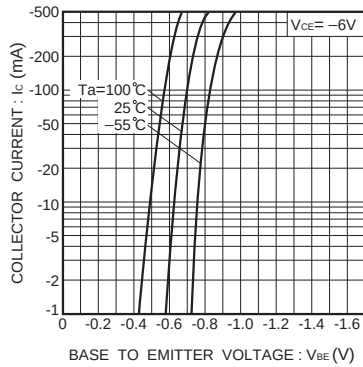


Fig.1 Grounded emitter propagation characteristics

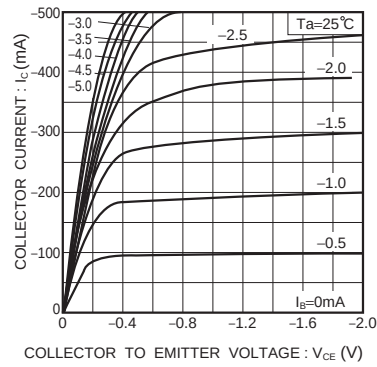


Fig.2 Grounded emitter output characteristics

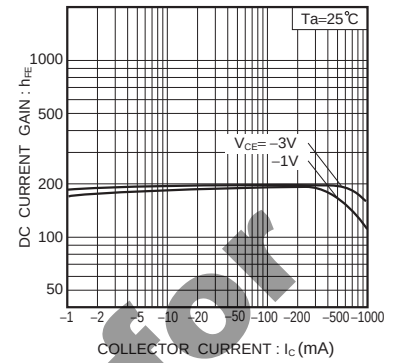


Fig.3 DC current gain vs. collector current(I)

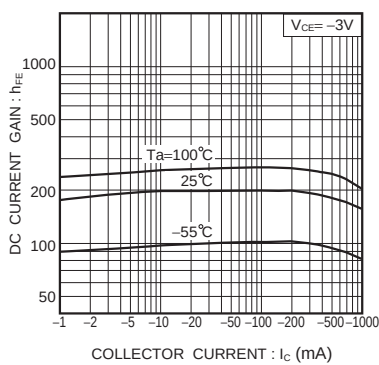


Fig.4 DC current gain vs. collector current(II)

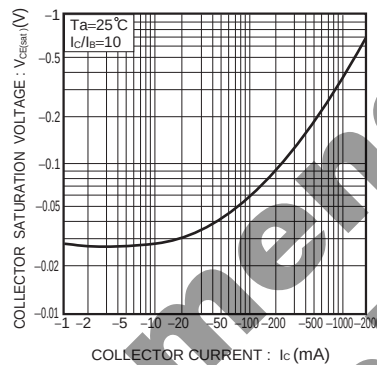


Fig.5 Collector-emitter saturation voltage vs. collector current

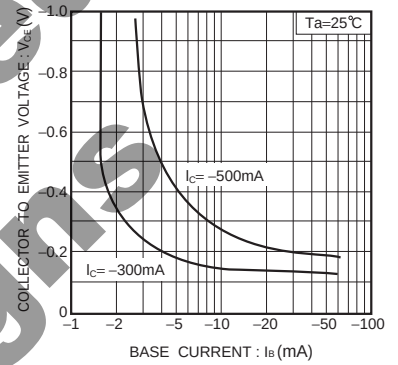


Fig.6 Collector-emitter saturation voltage vs. base current

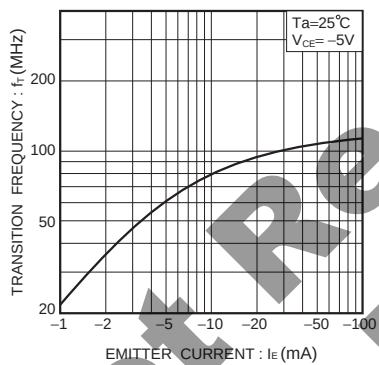


Fig.7 Gain bandwidth product vs. emitter current

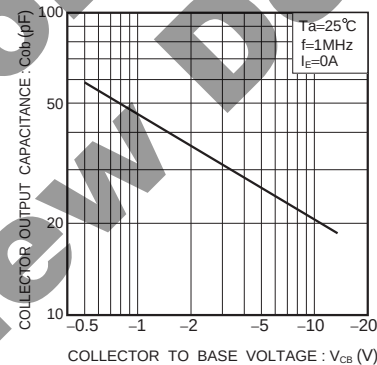


Fig.8 Collector output capacitance vs. collector-base voltage

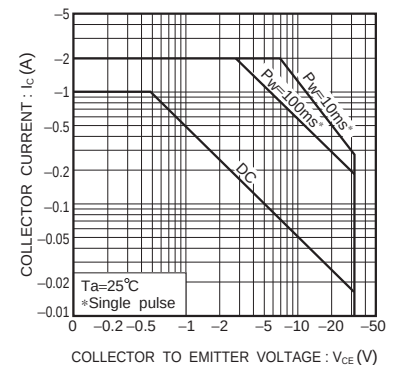


Fig.9 Safe operation area (2SB1132)

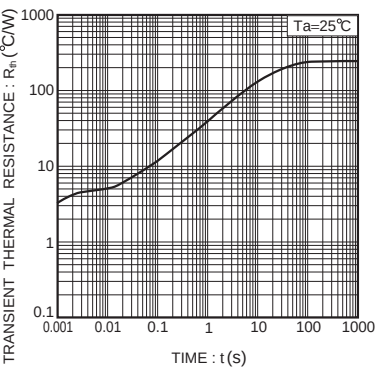


Fig.10 Transient thermal resistance (2SB1132)

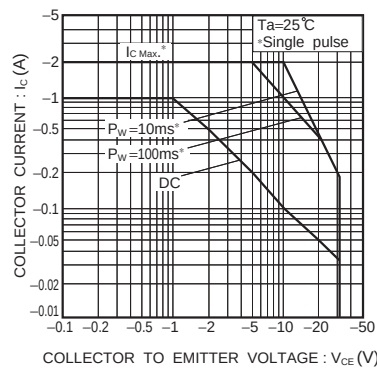


Fig.11 Safe operation area (2SB1237)

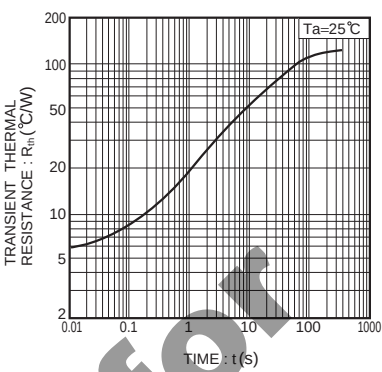


Fig.12 Transient thermal resistance (2SB1237)

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