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

2SB1132 / 2SA1515S / 2SB1237

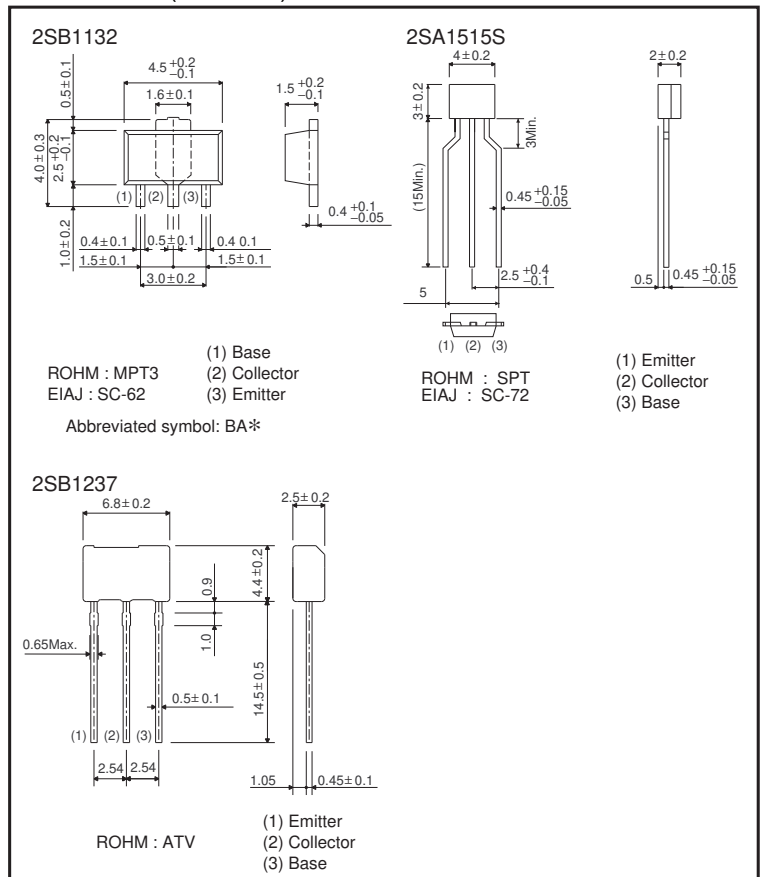
●Features

- 1) Low $V_{CE(sat)}$.
 $V_{CE(sat)} = -0.2V(Typ.)$
($I_C / I_B = -500mA / -50mA$)
- 2) Compliments 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	P _C	0.5	W *2
		2	
		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 = -50μA	
Collector-emitter breakdown voltage	BV _{CEO}	-32	-	-	V	I _C = -1mA	
Emitter-base breakdown voltage	BV _{EBO}	-5	-	-	V	I _E = -50μA	
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}	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	Taping		
		Code	T100	TP	TU2
		Basic ordering unit (pieces)	1000	5000	2500
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

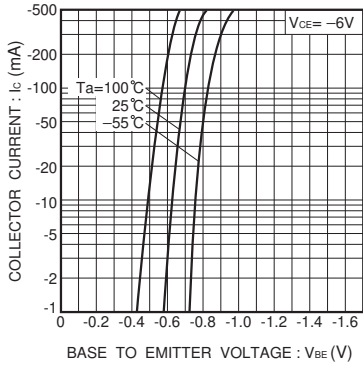


Fig.1 Grounded emitter propagation characteristics

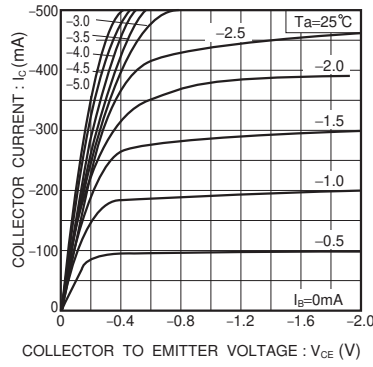


Fig.2 Grounded emitter output characteristics

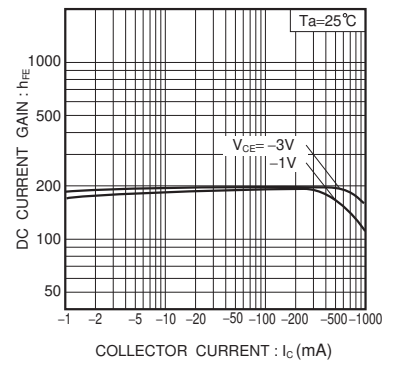


Fig.3 DC current gain vs. collector current(I)

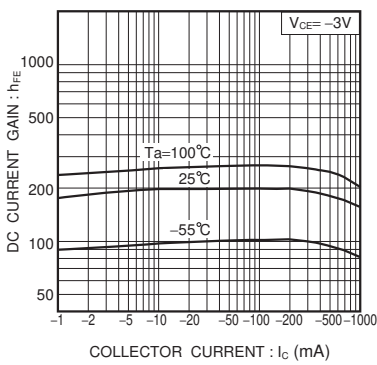


Fig.4 DC current gain vs. collector current(II)

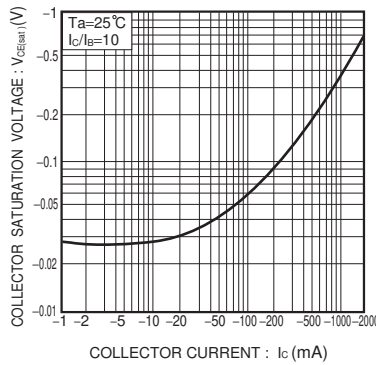


Fig.5 Collector-emitter saturation voltage vs. collector current

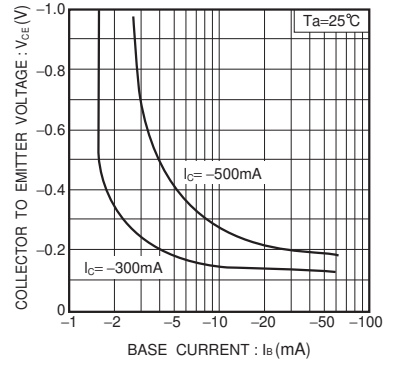


Fig.6 Collector-emitter saturation voltage vs. base current

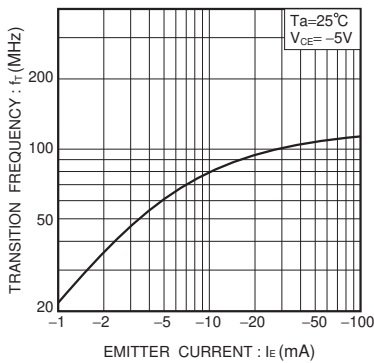


Fig.7 Gain bandwidth product vs. emitter current

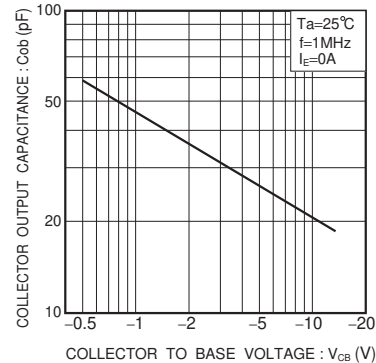


Fig.8 Collector output capacitance vs. collector-base voltage

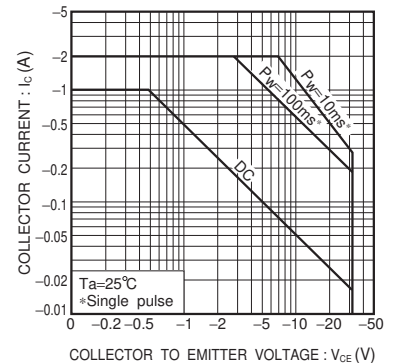


Fig.9 Safe operation area (2SB1132)

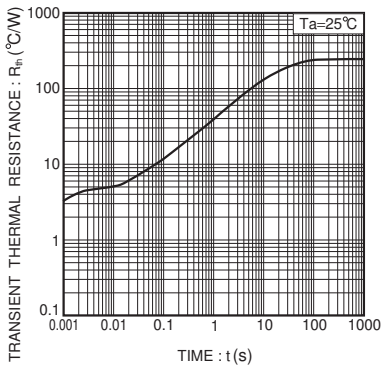


Fig.10 Transient thermal resistance (2SB1132)

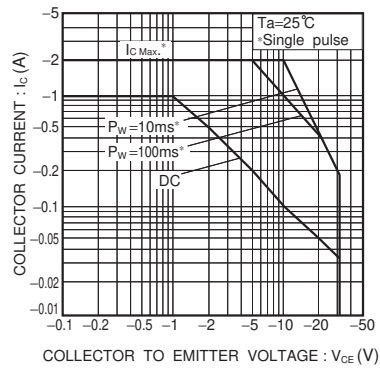


Fig.11 Safe operation area (2SB1237)

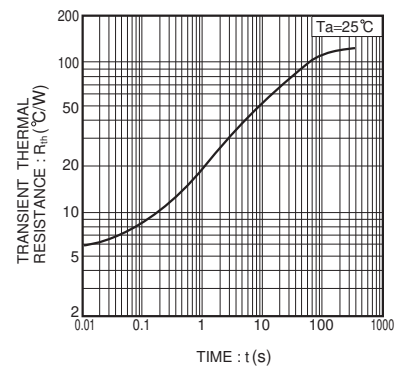


Fig.12 Transient thermal resistance (2SB1237)

Notes

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