

Medium power transistor(-80V, -0.7A)

2SB1189 / 2SB1238

● Features

- 1) High breakdown voltage, BVcEo=-80V, and high current, Ic=-0.7A.
- 2) Complements the 2SD1767 / 2SD1859.

●Absolute maximum ratings (Ta=25°C)

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Parameter		Symbol	Limits	Unit		
Collector-base voltage		Vсво	-80	V		
Collector-emitter voltage		Vceo	-80	V		
Emitter-base voltage		VEBO	-5	V		
Collector current		Ic	-0.7	A		
Collector power dissipation	2SB1189	Pc	0.5			
			2	W *1		
	2SB1238	1	1	*2		
Junction temperature		Tj	150	°C		
Storage temperature		Tstg	-55 to +150	°C		

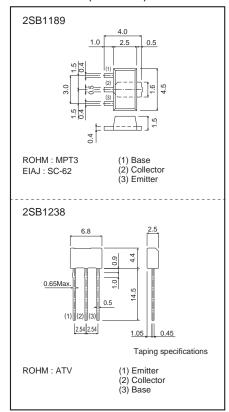
^{*1} When mounted on a 40×40×0.7 mm ceramic board.
*2 Printed circuit board 1.7 mm thick, collector plating 1cm² or larger.

●Packaging specifications and hfE

Type	2SB1189	2SB1238
Package	MPT3	ATV
hfE	QR	QR
Marking	BD*	_
Code	T100	TV2
Basic ordering unit (pieces)	1000	2500

^{*}Denotes hre

●Dimensions (Unit : mm)



●Electrical characteristics (Ta=25°C)

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Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
Collector-base breakdown voltage	ВУсво	-80	-	-	V	Ic=-50μA
Collector-emitter breakdown voltage	BVceo	-80	-	-	V	Ic=-2mA
Emitter-base breakdown voltage	ВУєво	-5	-	-	V	Iε=-50μA
Collector cutoff current	Ісво	-	-	-0.5	μΑ	Vcb=-50V
Emitter cutoff current	Ієво	-	-	-0.5	μΑ	V _{EB} =-4V
Collector-emitter saturation voltage	VCE(sat)	-	-0.2	-0.4	V	Ic/I _B =-500mA/-50mA
DC current transfer ratio	hre	120	-	390	-	Vce/lc=-3V/-0.1A
Transition frequency	f⊤	-	100	-	MHz	Vce=-10V, Ie=50mA, f=100MHz
Output capacitance	Cob	-	14	20	pF	Vcb=-10V, Ie=0A, f=1MHz

2SB1189 / 2SB1238 Data Sheet

•Electrical characteristics curves

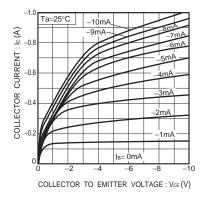


Fig.1 Ground emitter output characteristics

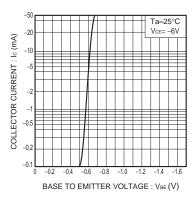


Fig.2 Ground emitter propagation characteristics

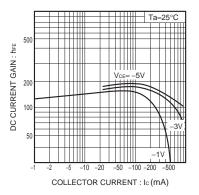


Fig.3 DC current gain vs. collector current

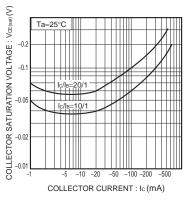


Fig.4 Collector-emitter saturation voltage vs.collector current

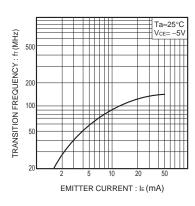


Fig.5 Gain bandwidth product vs. emitter current

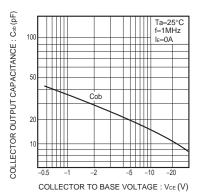


Fig.6 Collector output capacitance vs. collector-base voltage

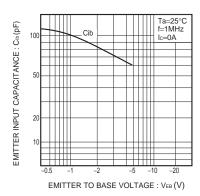


Fig.7 Emitter input capacitance vs. emitter-base voltage

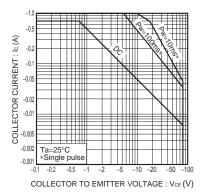


Fig.8 Safe operating area (2SB1189)

Notes

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