

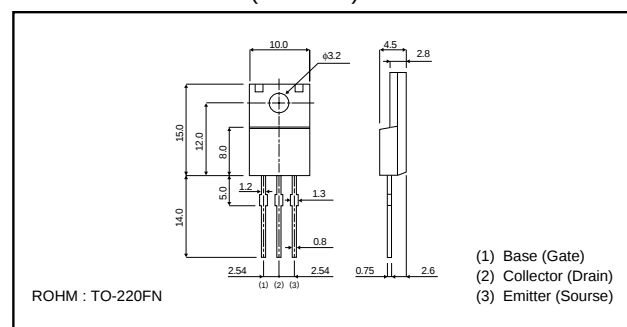
Power Transistor (−80V, −4A)

2SB1568

● Features

- 1) Available in TO-220 FN package
- 2) Darling connection provides high dc current gain (h_{FE})
- 3) Damper diode is incorporated
- 4) Built in resistors between base and emitter
- 5) Two millimeters lower than TO-220 FP which allows higher density mounting
- 6) Complementary pair with 2SD2399

● External dimensions (Unit : mm)



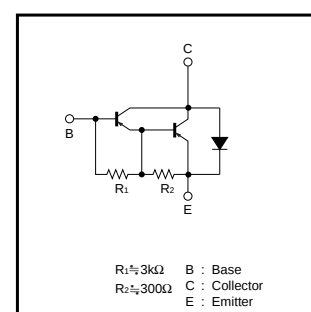
● Applications

Power amplifier

● Absolute maximum rating ($T_a=25^\circ\text{C}$)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	−80	V
Collector-emitter voltage	V_{CEO}	−80	V
Emitter-base voltage	V_{EBO}	−7	V
Collector current	I_C	−4	A(DC)
	I_{CP}	−6	A(Pulse)*
Collector dissipation	P_C	2	W($T_a=25^\circ\text{C}$)
		30	W($T_c=25^\circ\text{C}$)
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	−55 to +150	$^\circ\text{C}$

● Equivalent circuit



● Electrical characteristics (unless otherwise noted, $T_a=25^\circ\text{C}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	−80	—	—	V	$I_C = -50\mu\text{A}$
Collector-emitter breakdown voltage	BV_{CEO}	−80	—	—	V	$I_C = -1\text{mA}$
Collector cutoff current	BV_{EBO}	−7	—	—	V	$I_E = -5\text{mA}$
Emitter cutoff current	I_{CBO}	—	—	−100	μA	$V_{CB} = -80\text{V}$
DC current gain	I_{EBO}	—	—	−3	mV	$V_{EB} = -5\text{V}$
Collector-emitter breakdown voltage	h_{FE}^{*1}	1000	5000	−3	—	$V_{CE} = -3\text{V}$, $I_C = -2\text{A}$
Collector-emitter saturation voltage	$V_{CE(sat)}^{*1}$	—	−1.0	10000	V	$I_C/I_B = -2\text{A}/-4\text{mA}$
Transition frequency	f_T^{*1*2}	—	12	−1.5	MHz	$V_{CE} = -5\text{V}$, $I_E = 0.5\text{A}$, $f = 10\text{MHz}$
Output capacitance	C_{ob}	—	35	—	pF	$V_{CB} = -10\text{V}$, $I_E = 0\text{A}$, $f = 1\text{MHz}$

*1 Measured using pulse current.

*2 Transition frequency of the device.

Transistors

●Packaging specifications

Type	h _{FE}	Packaging	Bulk
		Code	
		Basic ordering unit(pieces)	500
2SB1568	1000 to 10000		○

●Electrical characteristics

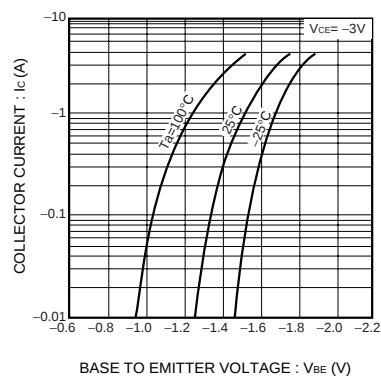


Fig.1 Grounded emitter propagation characteristics

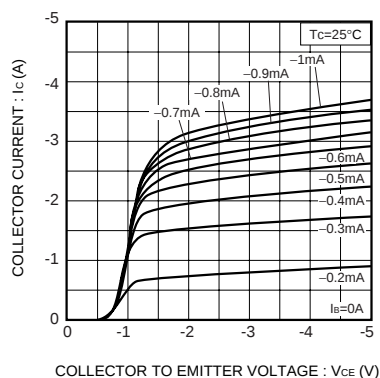


Fig.2 Grounded emitter output characteristics (I)

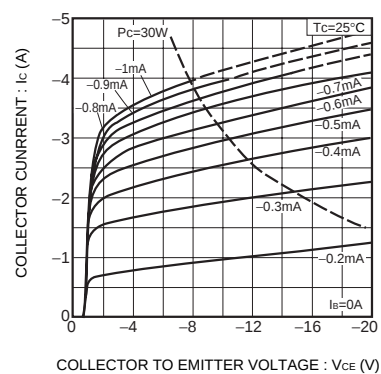


Fig.3 Grounded emitter output characteristics (II)

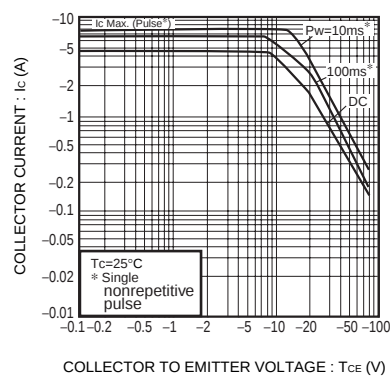


Fig.4 Safe operating area

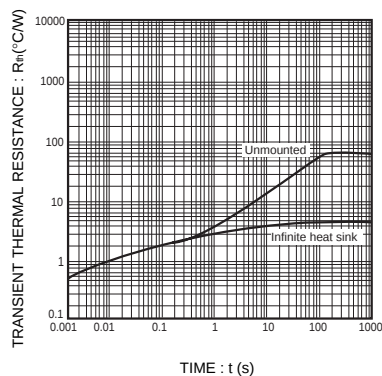


Fig.5 Transient thermal resistance

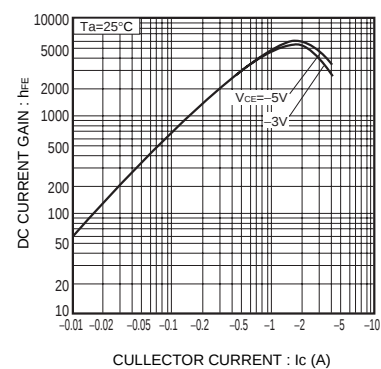


Fig.6 DC current gain vs. collector current (I)

Transistors

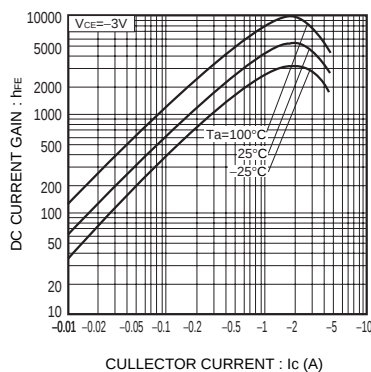


Fig.7 DC current gain vs.
collector current (II)

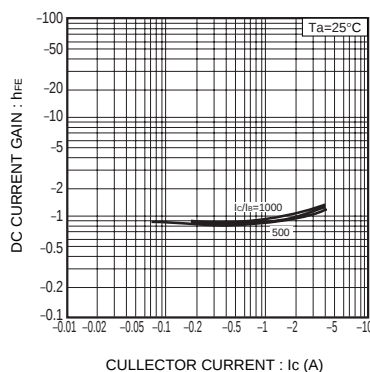


Fig.8 Collector-Emitter saturation
voltage vs. collector current (I)

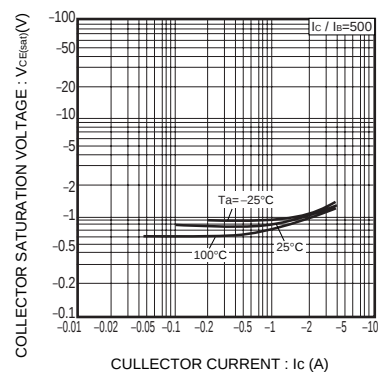


Fig.9 Collector-Emitter saturation
voltage vs. collector current (II)

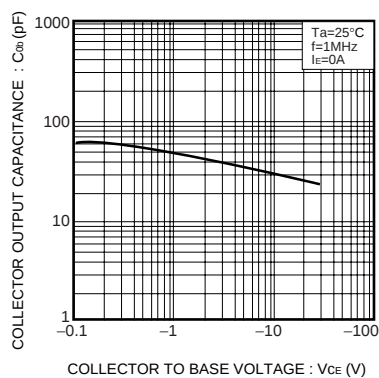


Fig.10 Collector output capacitance
vs. collector-base voltage

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