

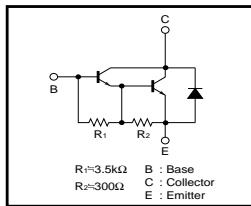
Power Transistor (100V, 2A)

2SD2195 / 2SD1980 / 2SD1867

●Features

- 1) Darlington connection for high DC current gain.
- 2) Built-in resistor between base and emitter.
- 3) Built-in damper diode.
- 4) Complements the 2SB1580 / 2SB1316.

●Equivalent circuit

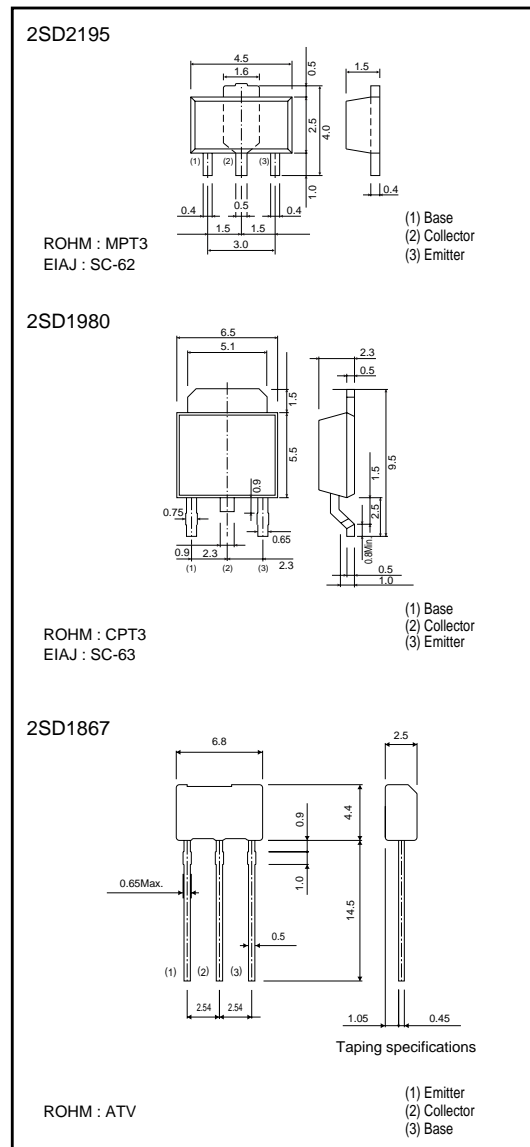


●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit	
Collector-base voltage	VCBO	100	V	
Collector-emitter voltage	VCEO	100	V	
Emitter-base voltage	VEBO	6	V	
Collector current	IC	2	A(DC)	
		3 *1	A(Pulse)	
Collector power dissipation	2SD2195	PC	0.5	W
			2 *2	W(Tc=25°C)
	2SD1980	1	W	
	2SD1867	10	W	
Junction temperature	TJ	150	°C	
Storage temperature	Tstg	-55 to +150	°C	

*1 Single pulse Pw=100ms
 *2 When mounted on a 40 x 40 x 0.7 mm ceramic board.
 *3 Printed circuit board, 1.7mm thick, collector plating 100mm² or larger.

●External dimensions (Unit : mm)



Transistors

●Packaging specifications and hFE

Type	2SD2195	2SD1980	2SD1867
Package	MPT3	CPT3	ATV
hFE	1k to 10k	1k to 10k	1k to 10k
Marking	DP	-	-
Code	T100	TL	TV2
Basic ordering unit (pieces)	1000	2500	2500

*Denotes hFE

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BVCBO	100	-	-	V	Ic=50μA
Collector-emitter breakdown voltage	BVCEO	100	-	-	V	Ic=5mA
Emitter-base breakdown voltage	BVEBO	6	-	-	V	Ie=5mA
Collector cutoff current	Icbo	-	-	10	μA	Vcb=100V
Emitter cutoff current	Iebo	-	-	3	mA	Veb=5V
Collector-emitter saturation voltage	VCE(sat)	-	-	1.5	V	Ic=1A, Ib=1mA *
Base-Emitter saturation voltage	VBE(sat)	-	-	2.0	V	Ic/Ib=1A/1mA
DC current transfer ratio	hFE	1000	-	10000	-	VCE=2V, Ic=1A *
Transition frequency	fr	-	80	-	MHz	VCE=5V, Ie=-0.1A, f=30MHz
Output capacitance	Cob	-	25	-	pF	Vcb=10V, Ie=0A, f=1MHz

*Measured using pulse current.

●Electrical characteristic curves

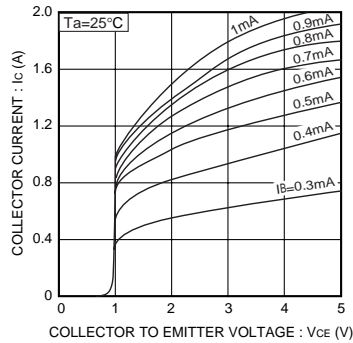


Fig.1 Grounded emitter output characteristics

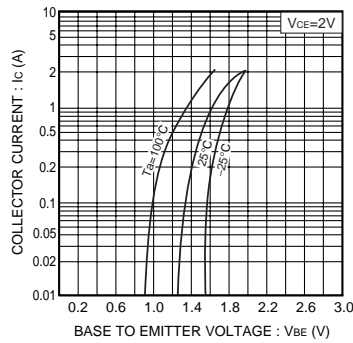


Fig.2 Grounded emitter propagation characteristics

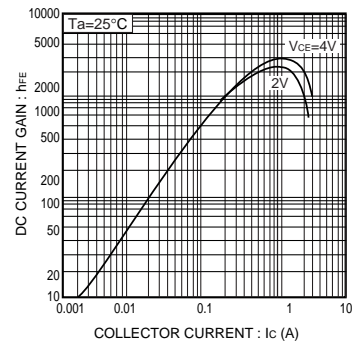


Fig.3 DC current gain vs. collector current

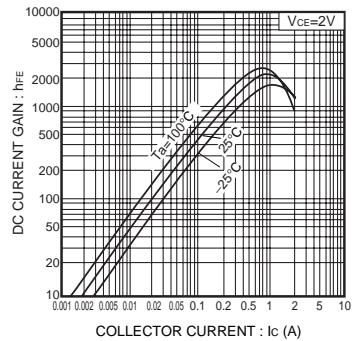


Fig.4 DC current gain vs. collector current

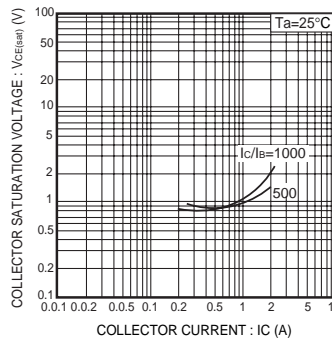


Fig.5 Collector-emitter saturation voltage vs. collector current

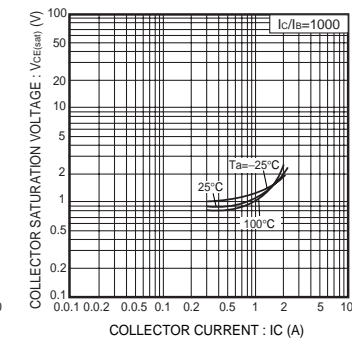


Fig.6 Collector-emitter saturation voltage vs. collector current

Transistors

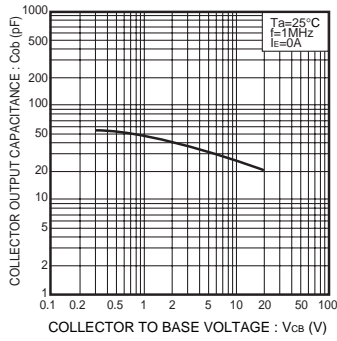


Fig.7 Collector output capacitance vs. collector-base voltage

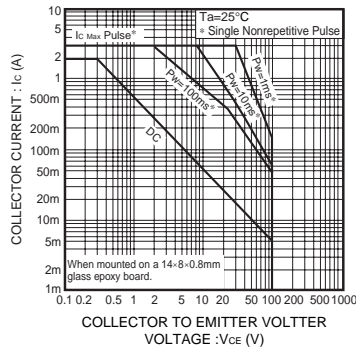


Fig.8 Safe operating area (2SD2195)

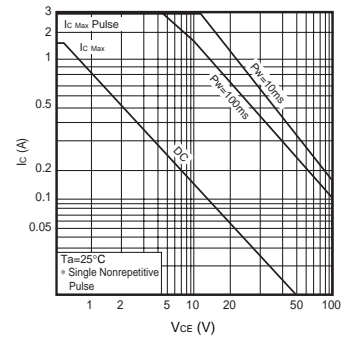


Fig.9 Safe operating area(2SD1867)

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