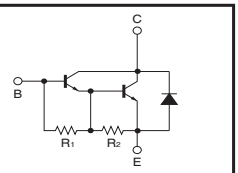
Power Transistor (100V, 2A)

2SD1980

●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 2SB1316.

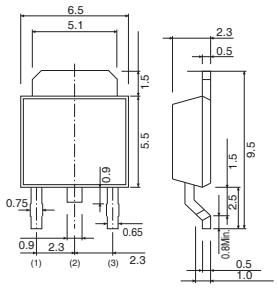
●inner circuit



R1≒3.5kΩ B : Base
R2≒300Ω C : Collector
E : Emitter

●Dimensions (Unit : mm)

2SD1980



ROHM : CPT3
EIAJ : SC-63

(1) Base
(2) Collector
(3) Emitter

●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	PC	1	W
		10	W(Tc=25°C)
Junction temperature	Tj	150	°C
Storage temperature	Tstg	−55 to +150	°C

*1 Single pulse Pw=100ms

●Packaging specifications and hFE

Type	2SD1980
Package	CPT3
hFE	1k to 10k
Marking	–
Code	TL
Basic ordering unit (pieces)	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	BVCBO	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 voltag	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	fT	–	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

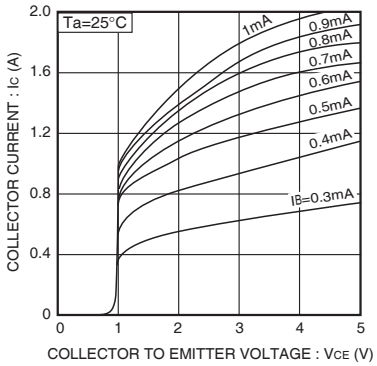


Fig.1 Grounded emitter output characteristics

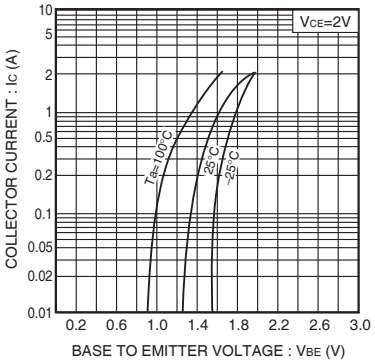


Fig.2 Grounded emitter propagation characteristics

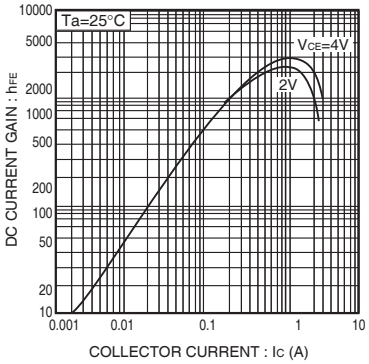


Fig.3 DC current gain vs. collector current

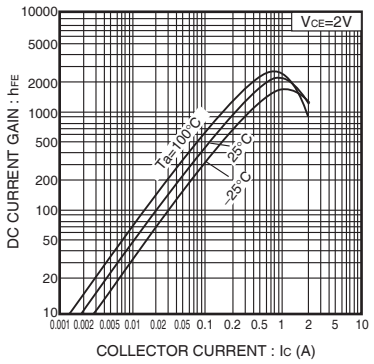


Fig.4 DC current gain vs. collector current

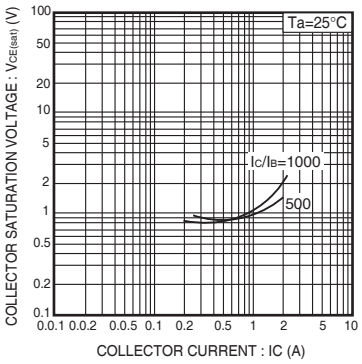


Fig.5 Collector-emitter saturation voltage vs.collector current

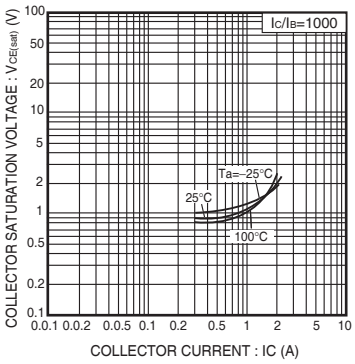


Fig.6 Collector-emitter saturation voltage vs.collector current

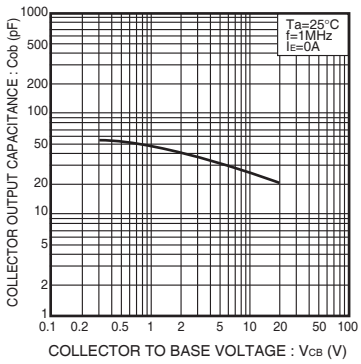


Fig.7 Collector output capacitance vs. collector-base voltage

Notes

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