

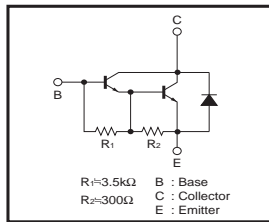
# Power Transistor (100V, 2A)

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 2SB1316.

## ●inner circuit



## ●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V <sub>CB0</sub>	100	V
Collector-emitter voltage	V <sub>CEO</sub>	100	V
Emitter-base voltage	V <sub>EBO</sub>	6	V
Collector current	I <sub>C</sub>	2	A(DC)
		3 *1	A(Pulse)
		1	W
Collector power dissipation	PC	10	W(T <sub>c</sub> =25°C)
		1 *2	W
Junction temperature	T <sub>J</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C

\*1 Single pulse P<sub>w</sub>=100ms

\*2 Printed circuit board, 1.7mm thick, collector plating 100mm<sup>2</sup> or larger.

## ●Packaging specifications and h<sub>FE</sub>

Type	2SD1980	2SD1867
Package	CPT3	ATV
h <sub>FE</sub>	1k to 10k	1k to 10k
Marking	-	-
Code	TL	TV2
Basic ordering unit (pieces)	2500	2500

\* Denotes h<sub>FE</sub>

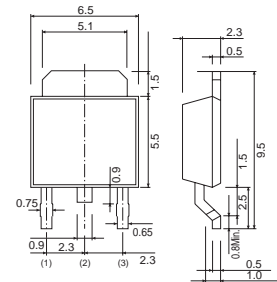
## ●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	V <sub>CB0</sub>	100	-	-	V	I <sub>c</sub> =50μA
Collector-emitter breakdown voltage	V <sub>CEO</sub>	100	-	-	V	I <sub>c</sub> =5mA
Emitter-base breakdown voltage	V <sub>EBO</sub>	6	-	-	V	I <sub>E</sub> =5mA
Collector cutoff current	I <sub>cbo</sub>	-	-	10	μA	V <sub>CB</sub> =100V
Emitter cutoff current	I <sub>EBO</sub>	-	-	3	mA	V <sub>EB</sub> =5V
Collector-emitter saturation voltag	V <sub>CE(sat)</sub>	-	-	1.5	V	I <sub>c</sub> =1A, I <sub>B</sub> =1mA
Base-Emitter saturation voltage	V <sub>BE(sat)</sub>	-	-	2.0	V	I <sub>c</sub> /I <sub>B</sub> =1A/1mA
DC current transfer ratio	h <sub>FE</sub>	1000	-	10000	-	V <sub>CE</sub> =2V, I <sub>c</sub> =1A
Transition frequency	f <sub>T</sub>	-	80	-	MHz	V <sub>CE</sub> =5V, I <sub>E</sub> =-0.1A, f=30MHz
Output capacitance	C <sub>ob</sub>	-	25	-	pF	V <sub>CB</sub> =10V, I <sub>E</sub> =0A, f=1MHz

\* Measured using pulse current.

## ●Dimensions (Unit : mm)

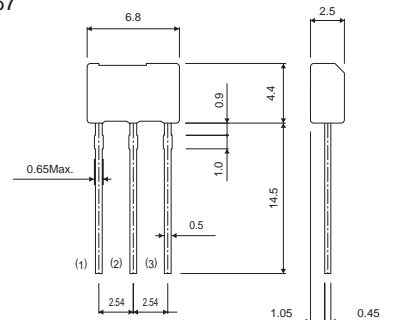
2SD1980



ROHM : CPT3  
EIAJ : SC-63

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

2SD1867



ROHM : ATV

Taping specifications

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

●Electrical characteristic curves

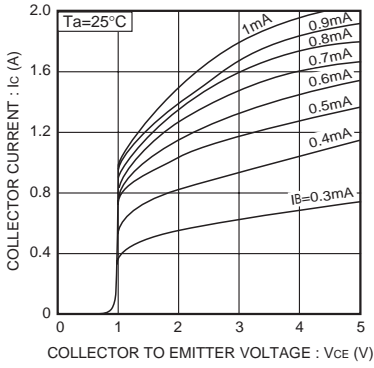


Fig.1 Grounded emitter output characteristics

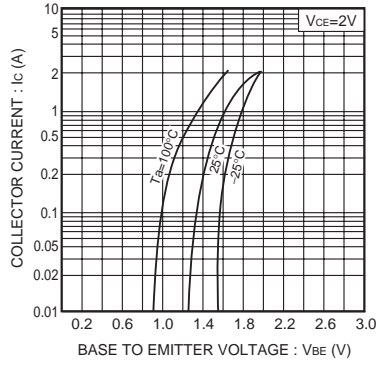


Fig.2 Grounded emitter propagation characteristics

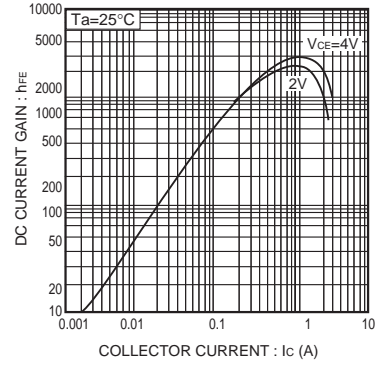


Fig.3 DC current gain vs. collector current

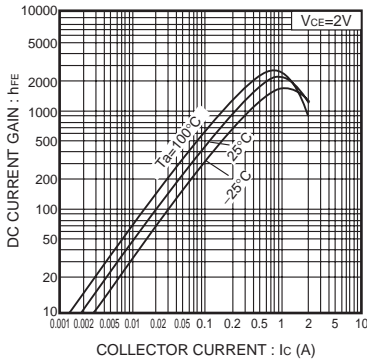


Fig.4 DC current gain vs. collector current

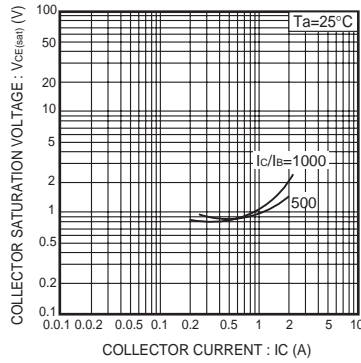


Fig.5 Collector-emitter saturation voltage vs. collector current

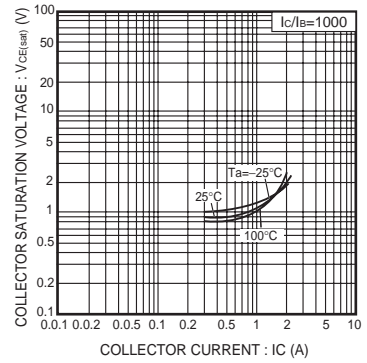


Fig.6 Collector-emitter saturation voltage vs. collector current

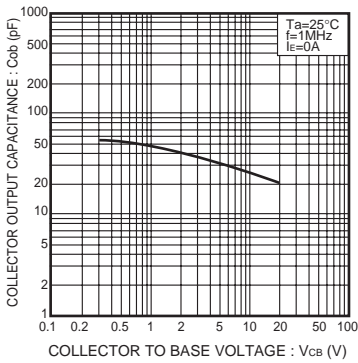


Fig.7 Collector output capacitance vs. collector-base voltage

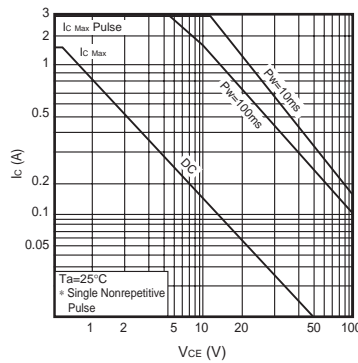


Fig.8 Safe operating area(2SD1867)

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