



**THE DATASHEET OF
2SD1859TV2R**



Medium power transistor (80V, 0.7A)

2SD1767 / 2SD1859

●Features

- 1) High breakdown voltage, $BV_{CEO}=80V$, and high current, $I_C=0.7A$.
- 2) Complements the 2SB1189 / 2SB1238.

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CB0}	80	V
Collector-emitter voltage	V_{CE0}	80	V
Emitter-base voltage	V_{EB0}	5	V
Collector current	I_C	0.7	A(DC)
	I_{CP}	1	A(Pulse) *1
Collector power dissipation	Pc	0.5	W
		2 *2	
		1 *3	
Junction temperature	Tj	150	°C
Storage temperature	Tstg	-55 to +150	°C

*1 Pw=10ms, duty=1/2

*2 When mounted on a 40×40×0.7 mm ceramic board.

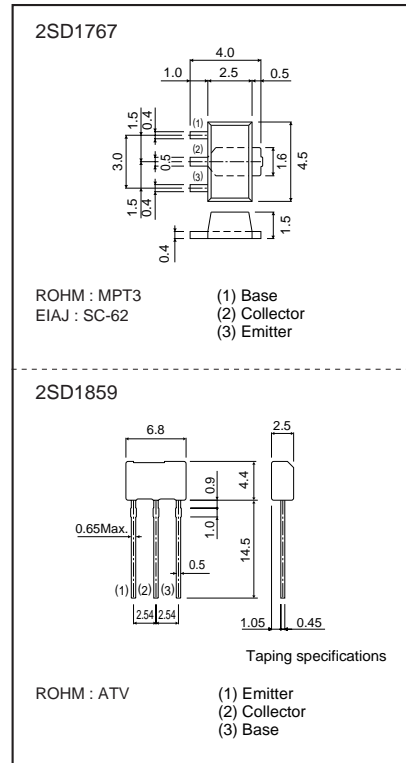
*3 Printed circuit board 1.7 mm thick, collector plating 1cm² or larger.

●Packaging specifications and hFE

Type	2SD1767	2SD1859
Package	MPT3	ATV
hFE	PQR	QR
Marking	DC*	-
Code	T100	TV2
Basic ordering unit (pieces)	1000	2500

*Denotes hFE

●External dimensions (Unit : mm)



●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CB0}	80	-	-	V	$I_C=50\mu A$
Collector-emitter breakdown voltage	BV_{CE0}	80	-	-	V	$I_C=2mA$
Emitter-base breakdown voltage	BV_{EB0}	5	-	-	V	$I_E=50\mu A$
Collector cutoff current	I_{CBO}	-	-	0.5	μA	$V_{CB}=50V$
Emitter cutoff current	I_{EBO}	-	-	0.5	μA	$V_{EB}=4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	0.2	0.4	V	$I_C/I_E=500mA/50mA$
DC current transfer ratio	hFE	120	-	390	-	$V_{CE}/I_C=3V/0.1A$
Transition frequency	fr	-	120	-	MHz	$V_{CE}=10V, I_E=-50mA, f=100MHz$
Output capacitance	Cob	-	10	-	pF	$V_{CB}=10V, I_E=0A, f=1MHz$

Transistors

●Electrical characteristics curves

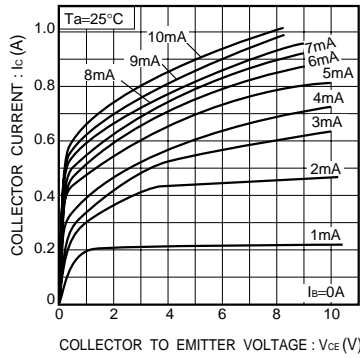


Fig.1 Ground emitter output characteristics

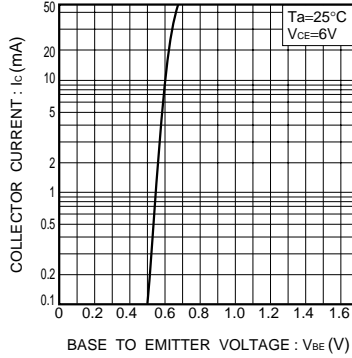


Fig.2 Ground emitter propagation characteristics

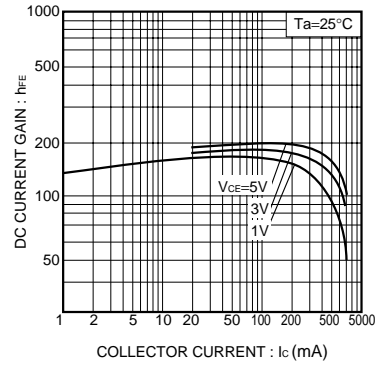


Fig.3 DC current gain vs. collector current

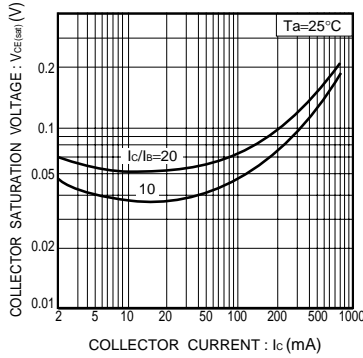


Fig.4 Collector-emitter saturation voltage vs. collector current

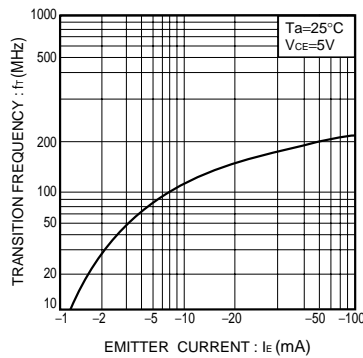


Fig.5 Resistance ratio vs. emitter current

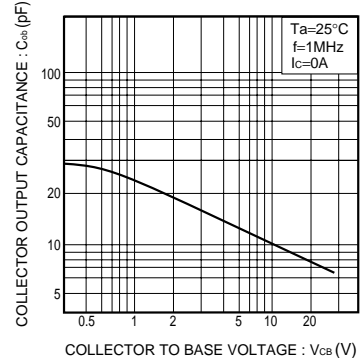


Fig.6 Collector output capacitance vs. collector-base voltage

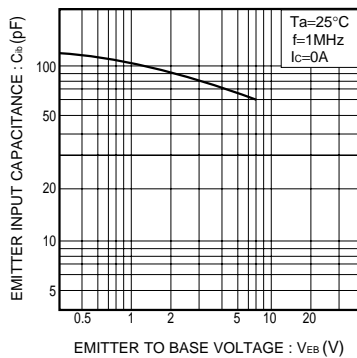


Fig.7 Emitter input capacitance vs. emitter-base voltage

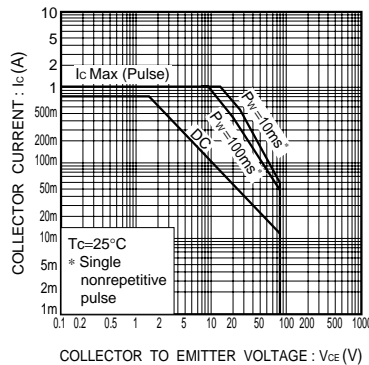


Fig.8 Safe operating area (2SD1859)

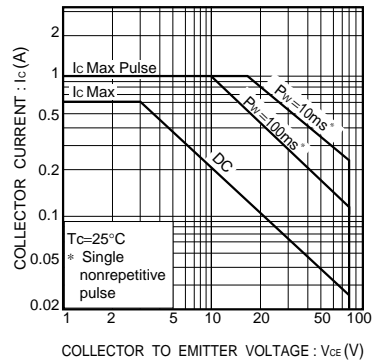


Fig.9 Safe operating area (2SD1767)

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