

# 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	$V_{CBO}$	80	V
Collector-emitter voltage	$V_{CEO}$	80	V
Emitter-base voltage	$V_{EBO}$	5	V
Collector current	$I_C$	0.7	A(DC)
	$I_{CP}$	1	A(Pulse) *1
Collector power dissipation	2SD1767 2SD1859	$P_C$	0.5
			2 *2
			1 *3
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

\*1  $P_W=10ms$ , duty=1/2

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

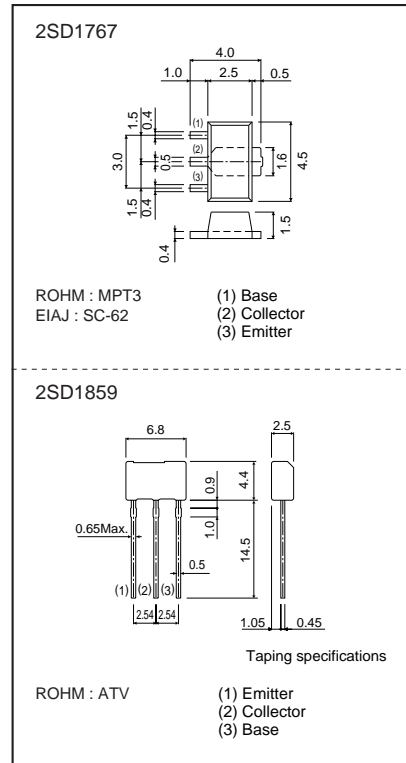
\*3 Printed circuit board 1.7 mm thick, collector plating 1cm<sup>2</sup> or larger.

### ●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	$BV_{CBO}$	80	-	-	V	$I_C=50\mu A$
Collector-emitter breakdown voltage	$BV_{CEO}$	80	-	-	V	$I_C=2mA$
Emitter-base breakdown voltage	$BV_{EBO}$	5	-	-	V	$I_E=50\mu A$
Collector cutoff current	$I_{CBO}$	-	-	0.5	$\mu A$	$V_{CB}=50V$
Emitter cutoff current	$I_{EBO}$	-	-	0.5	$\mu A$	$V_{EB}=4V$
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	f <sub>r</sub>	-	120	-	MHz	$V_{CE}=10V, I_E=50mA, f=100MHz$
Output capacitance	C <sub>ob</sub>	-	10	-	pF	$V_{CB}=10V, I_E=0A, f=1MHz$

Transistors

●Electrical characteristics curves

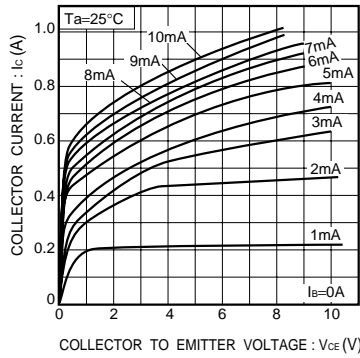


Fig.1 Ground emitter output characteristics

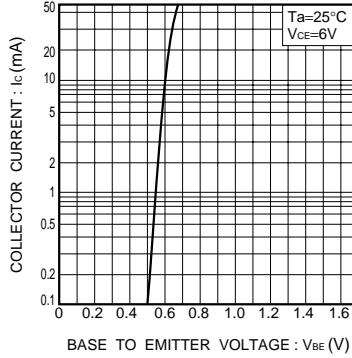


Fig.2 Ground emitter propagation characteristics

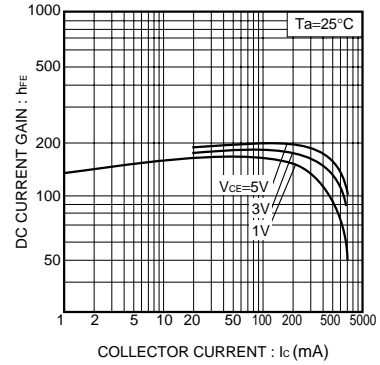


Fig.3 DC current gain vs. collector current

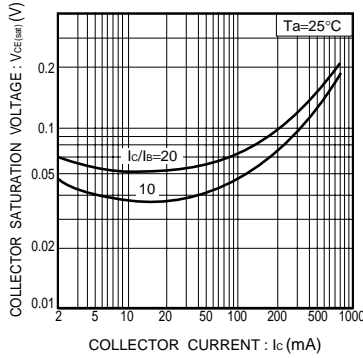


Fig.4 Collector-emitter saturation voltage vs. collector current

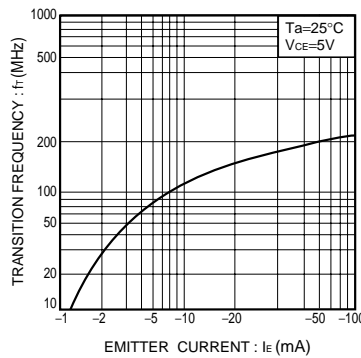


Fig.5 Resistance ratio vs. emitter current

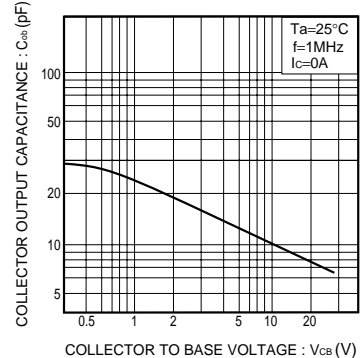


Fig.6 Collector output capacitance vs. collector-base voltage

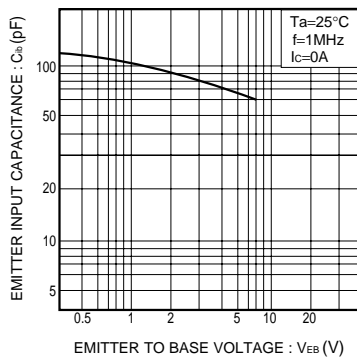


Fig.7 Emitter input capacitance vs. emitter-base voltage

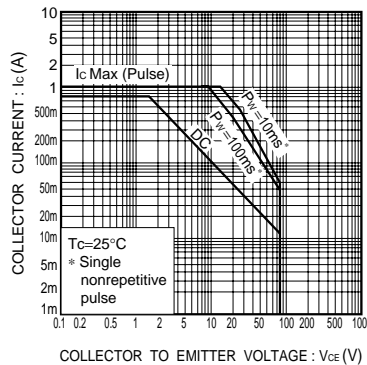


Fig.8 Safe operating area (2SD1859)

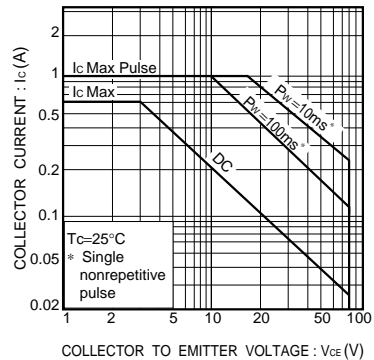


Fig.9 Safe operating area (2SD1767)

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