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	P_C	0.5	W
			2 *2	
	2SD1859		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.

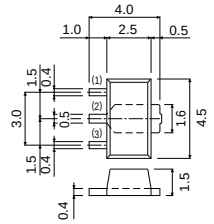
●Packaging specifications and h_{FE}

Type	2SD1767	2SD1859
Package	MPT3	ATV
h_{FE}	PQR	QR
Marking	DC*	–
Code	T100	TV2
Basic ordering unit (pieces)	1000	2500

*Denotes h_{FE}

●External dimensions (Unit : mm)

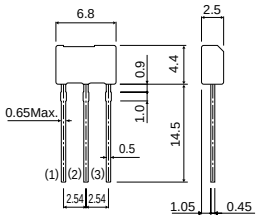
2SD1767



ROHM : MPT3
EIAJ : SC-62

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

2SD1859



Taping specifications

ROHM : ATV

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

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	80	–	–	V	I_C=50μA
Collector-emitter breakdown voltage	BV_{CEO}	80	–	–	V	I_C=2mA
Emitter-base breakdown voltage	BV_{EBO}	5	–	–	V	I_E=50μA
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_B=500mA/50mA
DC current transfer ratio	h_{FE}	120	–	390	–	V_{CE}/I_C=3V/0.1A
Transition frequency	f_T	–	120	–	MHz	V_{CE}=10V, I_E=−50mA, f=100MHz
Output capacitance	Cob	–	10	–	pF	V_{CB}=10V, I_E=0A, f=1MHz

●Electrical characteristics curves

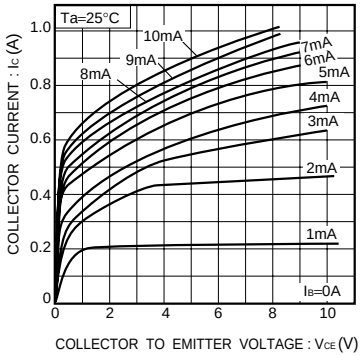


Fig.1 Ground emitter output characteristics

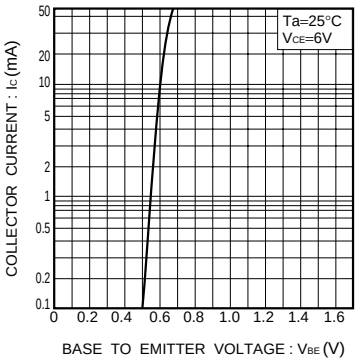


Fig.2 Ground emitter propagetion characteristics

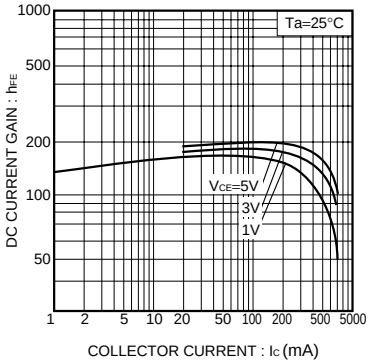


Fig.3 DC current gain vs. collector current

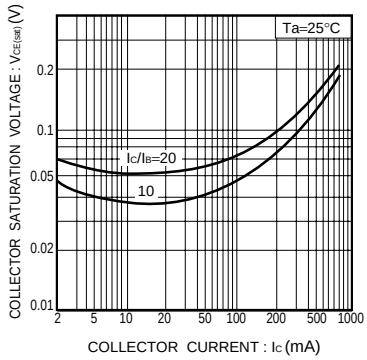


Fig.4 Collector-emitter saturation voltage vs. collector current

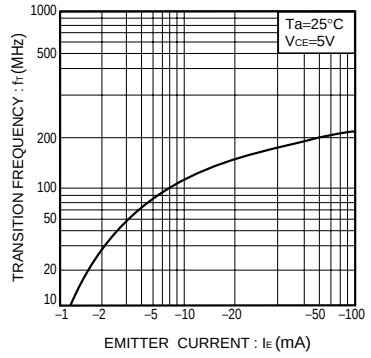


Fig.5 Resistance raito vs. emitter current

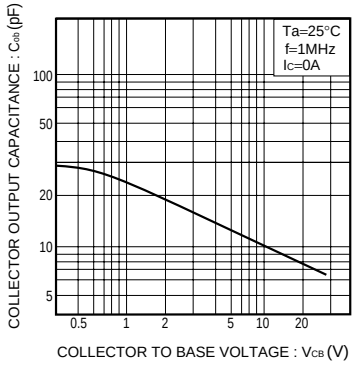


Fig.6 Collector output capacitance vs. collector-base voltage

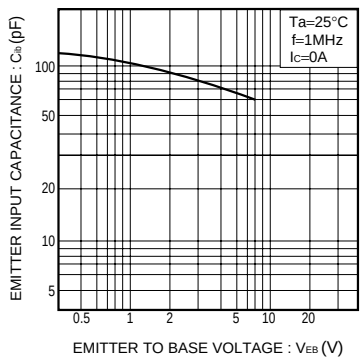


Fig.7 Emitter input capacitance vs. emitter-base voltage

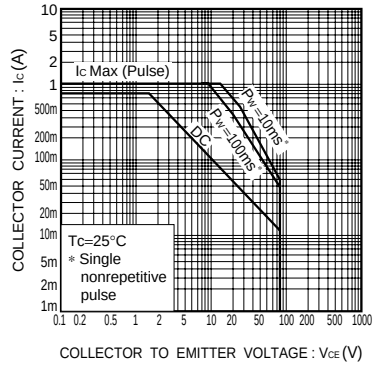


Fig.8 Safe operating area (2SD1859)

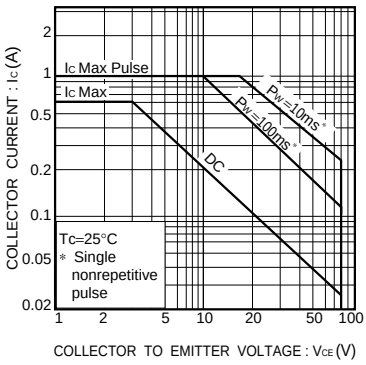


Fig.9 Safe operating area (2SD1767)

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