

Power Transistor (80V, 1A)

2SD1898 / 2SD1733

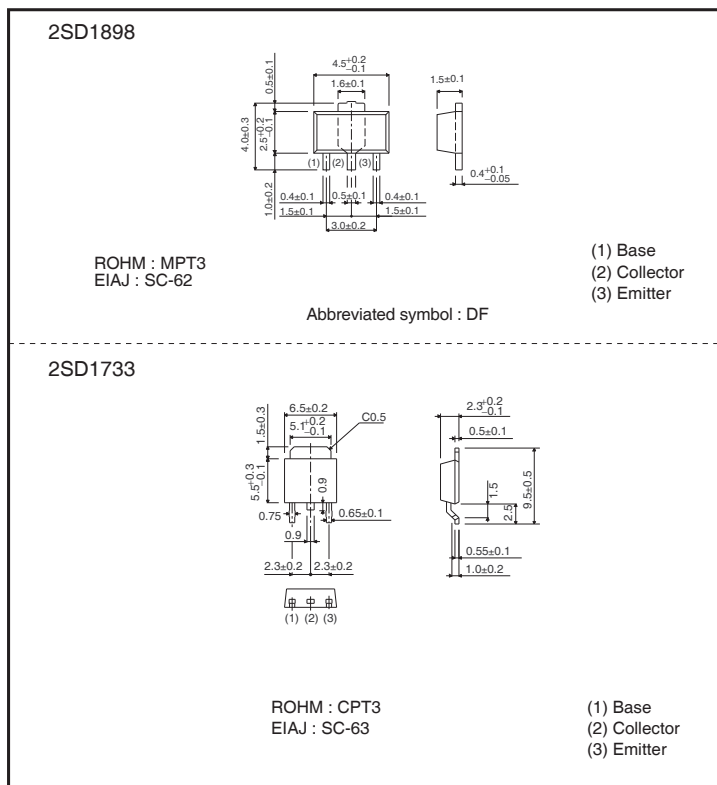
●Features

- 1) High V_{CEO} , $V_{CEO}=80V$
- 2) High I_C , $I_C=1A$ (DC)
- 3) Good h_{FE} linearity
- 4) Low V_{CE} (sat)
- 5) Complements the 2SB1260 / 2SB1181

●Structure

Epitaxial planer type
 NPN silicon transistor

●Dimensions (Unit : mm)



●Absolute maximum ratings ($T_a=25^{\circ}C$)

Parameter		Symbol	Limits	Unit
Collector-base voltage		V _{CBO}	120	V
Collector-emitter voltage		V _{CEO}	80	V
Emitter-base voltage		V _{EBO}	5	V
Collector current		I _c	1	A (DC)
			2	A (Pulse) *1
Collector power dissipation	2SD1898	P _C	0.5	W
			2	W *2
	2SD1733		1	W
			10	W (T _c =25°C)
Junction temperature		T _j	150	°C
Storage temperature		T _{stg}	−55 to +150	°C

*1 $P_w=20ms$, duty=1 / 2

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

●Absolute maximum ratings (Ta=25°C)

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*1 P_w=20ms, duty=1 / 2

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

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV _{CBO}	120	—	—	V	I _C =50μA
Collector-emitter breakdown voltage	BV _{CEO}	80	—	—	V	I _C =1mA
Emitter-base breakdown voltage	BV _{EBO}	5	—	—	V	I _E =50μA
Collector cutoff current	I _{CBO}	—	—	1	μA	V _{CB} =100V
Emitter cutoff current	I _{EBO}	—	—	0.5	μA	V _{EB} =4V
DC current transfer ratio	h _{FE} *	120	—	390	—	V _{CE} =3V, I _C =0.5A
Collector-emitter saturation voltage	V _{CE(sat)}	—	0.15	0.4	V	I _C /I _B =500mA/50mA
Transition frequency	f _T	—	100	—	MHz	V _{CE} =10V, I _E =-50mA, f=100MHz
Output capacitance	C _{ob}	—	20	—	pF	V _{CB} =10V, I _E =0A, f=1MHz

* Measured using pulse current

●Packaging specifications and h_{FE}

Type	h _{FE}	Package	Taping	
		Code	T100	TL
		Basic ordering unit (pieces)	1000	2500
2SD1898	QR		○	—
2SD1733	QR		—	○

h_{FE} values are classified as follows :

Item	Q	R
h _{FE}	120 to 270	180 to 390

●Electrical characteristic curves

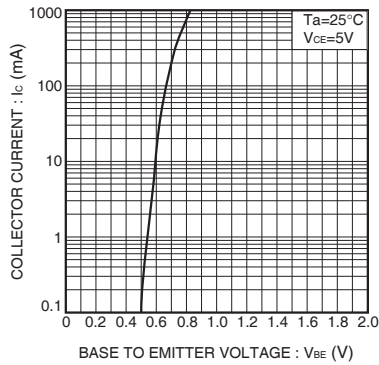


Fig.1 Grounded emitter propagation characteristics

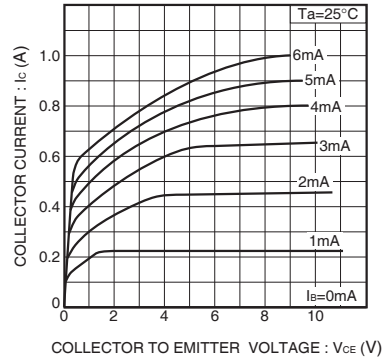


Fig.2 Grounded emitter output characteristics

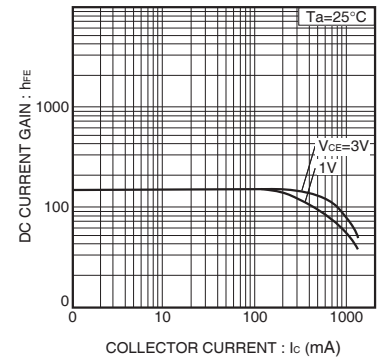


Fig.3 DC current gain vs. collector current

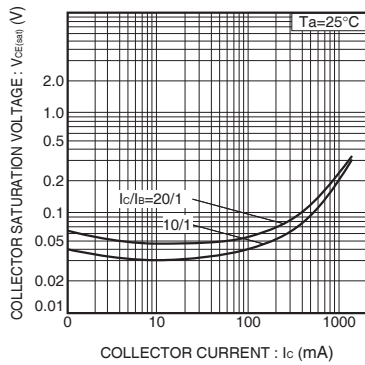


Fig.4 Collector-emitter saturation voltage vs. collector current

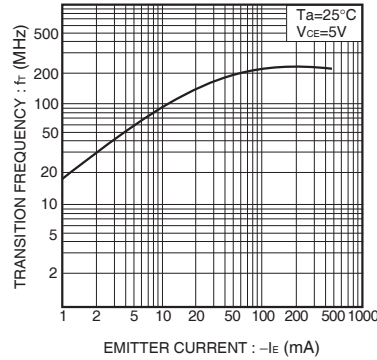
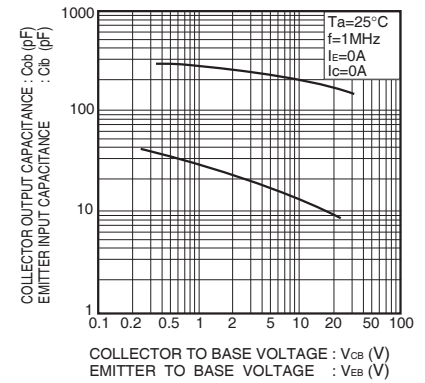
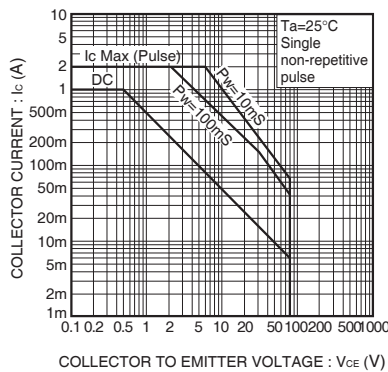


Fig.5 Gain bandwidth product vs. emitter current

Fig.6 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltageFig.7 Safe operating area
(2SD1898)

Notes

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