

Power Transistor (80V, 1A)

2SD1898 / 2SD1733

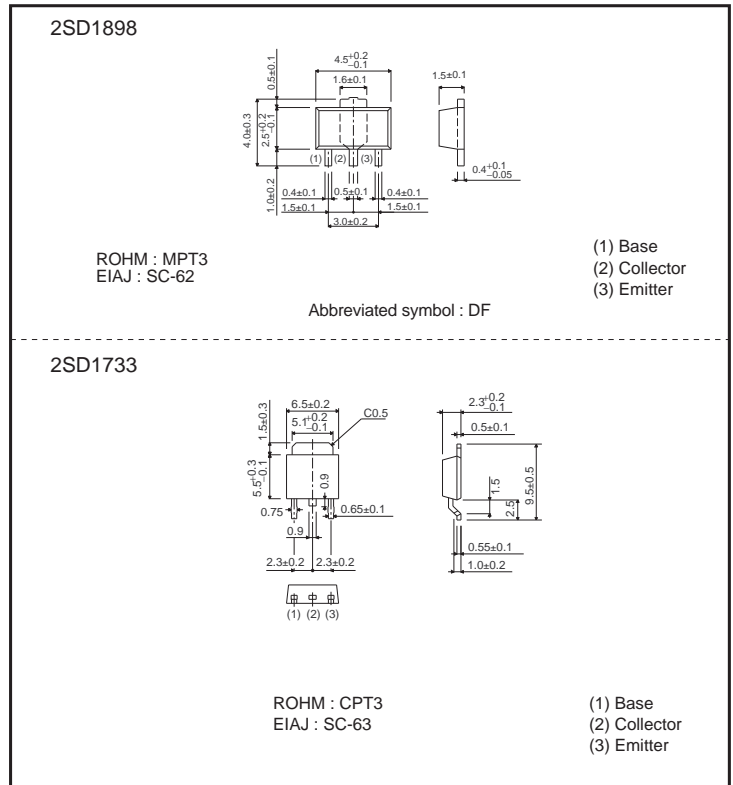
●Features

- 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	0.5	W
		2	W *2
	2SD1733	1	W
		10	W ($T_c=25^\circ C$)
Junction temperature	T_j	150	$^\circ C$
Storage temperature	T_{stg}	-55 to +150	$^\circ C$

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

*2 When mounted on a 40x40x0.7mm ceramic board.

●Absolute maximum ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit
Collector-base voltage		V _{CB0}	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.

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV _{CB0}	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 _{CB0}	–	–	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

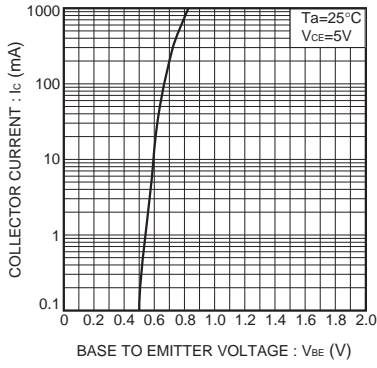


Fig.1 Grounded emitter propagation characteristics

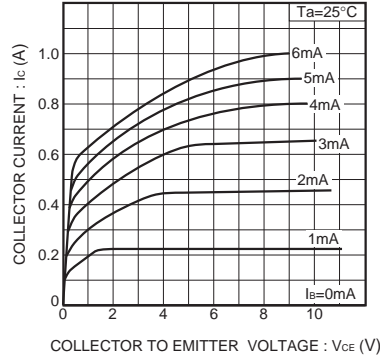


Fig.2 Grounded emitter output characteristics

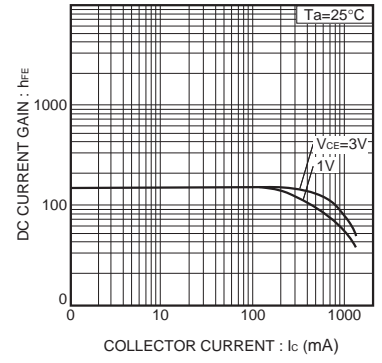


Fig.3 DC current gain vs. collector current

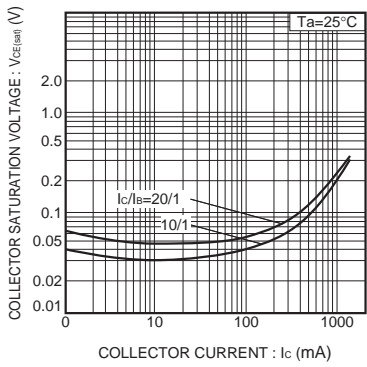


Fig.4 Collector-emitter saturation voltage vs. collector current

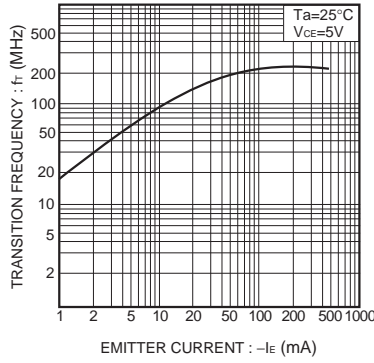


Fig.5 Gain bandwidth product vs. emitter current

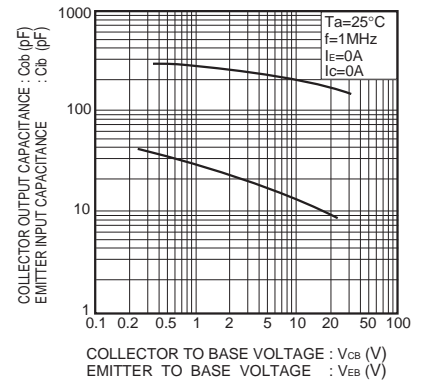


Fig.6 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

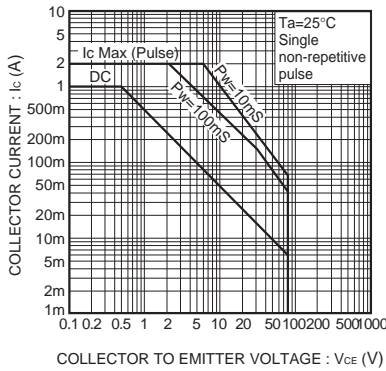


Fig.7 Safe operating area (2SD1898)

Notes

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