

Power Transistor (80V, 1A)

2SD1898 / 2SD1733 / 2SD1768S / 2SD1863

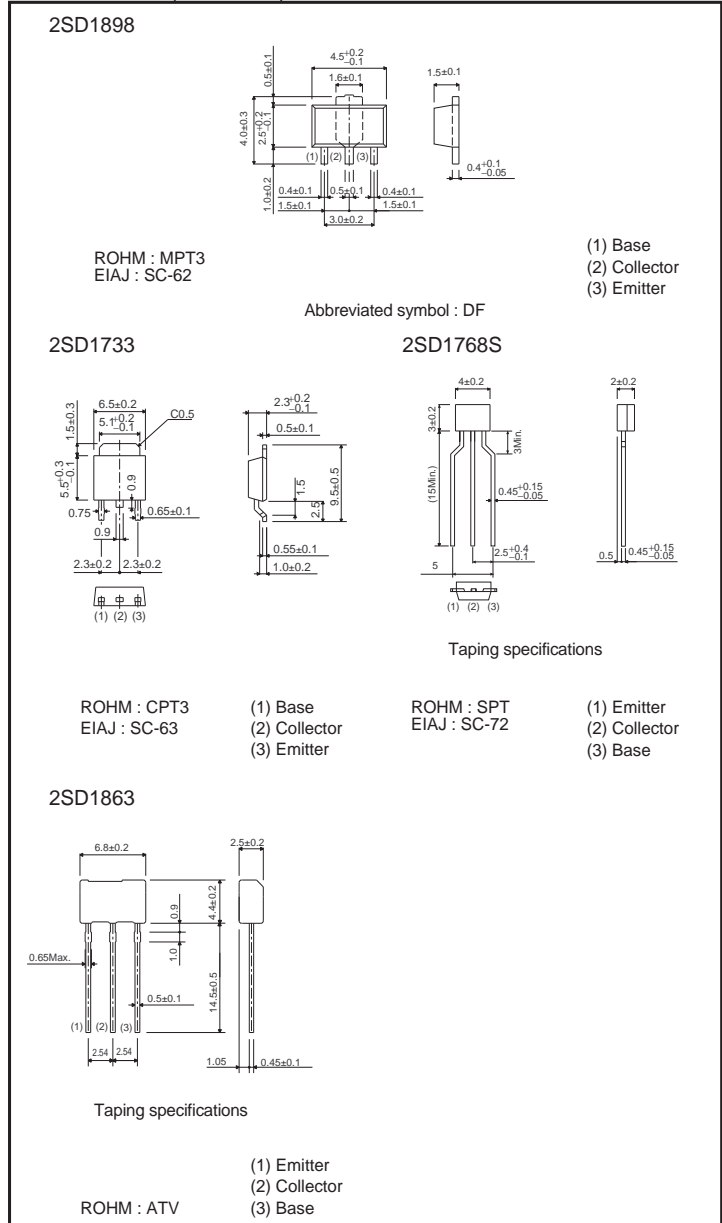
●Features

- 1) High V_{CE0} , $V_{CE0}=80V$
- 2) High I_C , $I_C=1A$ (DC)
- 3) Good h_{FE} linearity
- 4) Low V_{CE} (sat)
- 5) Complements the 2SB1260 / 2SB1241 / 2SB1181

●Structure

Epitaxial planer type
NPN silicon transistor

●Dimensions (Unit : mm)



●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit	
Collector-base voltage	V _{CB0}	120	V	
Collector-emitter voltage	V _{CE0}	80	V	
Emitter-base voltage	V _{EB0}	5	V	
Collector current	I _c	1	A (DC)	
		2	A (Pulse) *1	
Collector power dissipation	2SD1898	P _c	0.5	W
			2	W *3
			1	W
			10	W (T _c =25°C)
			0.3	W
2SD1733	P _c	1	W *2	
2SD1768S		0.3	W	
2SD1863		1	W *2	
Junction temperature	T _j	150	°C	
Storage temperature	T _{stg}	-55 to +150	°C	

*1 P_w=20ms, duty=1 / 2*2 Printed circuit board 1.7mm thick, collector copper plating 1cm² or larger.

*3 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 _{CE0}	80	-	-	V	I _c =1mA
Emitter-base breakdown voltage	BV _{EB0}	5	-	-	V	I _E =50μA
Collector cutoff current	I _{CB0}	-	-	1	μA	V _{CB} =100V
Emitter cutoff current	I _{EB0}	-	-	1	μA	V _{EB} =4V
DC current transfer ratio	2SD1863	120	-	390	-	V _{CE} =3V, I _c =0.5A
	2SD1733, 2SD1898	120	-	390	-	
	2SD1768S	120	-	390	-	
Collector-emitter saturation voltage	V _{CE(sat)}	-	0.15	0.4	V	I _c /I _B =500mA/20mA
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	TP	TV2
		Basic ordering unit (pieces)	1000	2500	5000	2500
2SD1898	QR		○	-	-	-
2SD1733	QR		-	○	-	-
2SD1768S	QR		-	-	○	-
2SD1863	QR		-	-	-	○

h_{FE} values are classified as follows :

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

●Electrical characteristic curves

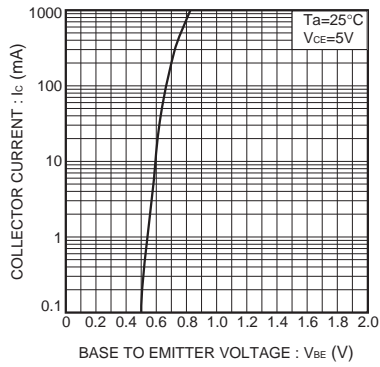


Fig.1 Grounded emitter propagation characteristics

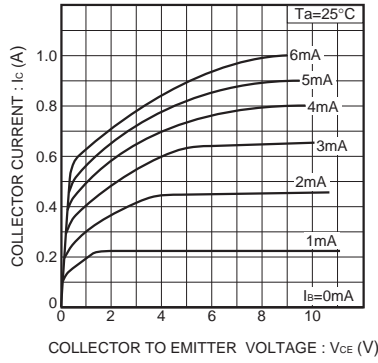


Fig.2 Grounded emitter output characteristics

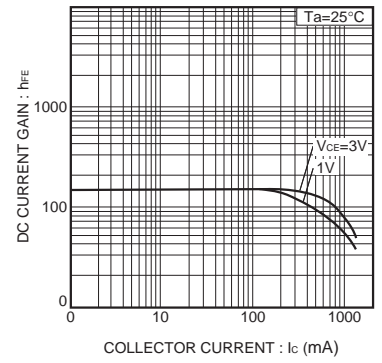


Fig.3 DC current gain vs. collector current

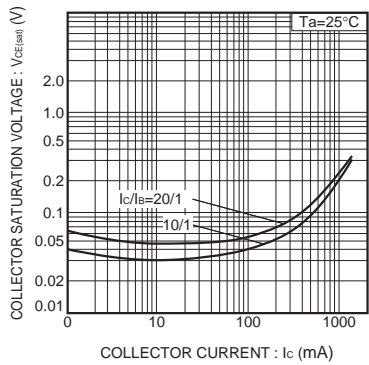


Fig.4 Collector-emitter saturation voltage vs. collector current

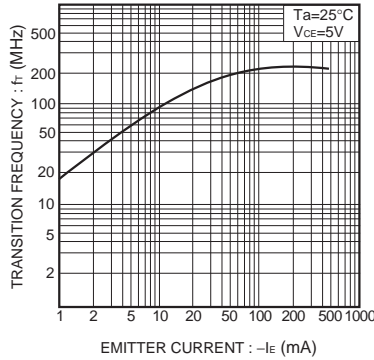


Fig.5 Gain bandwidth product vs. emitter current

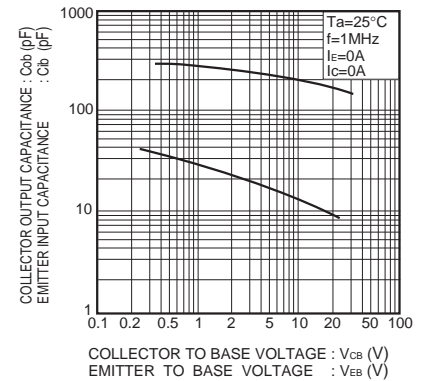


Fig.6 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

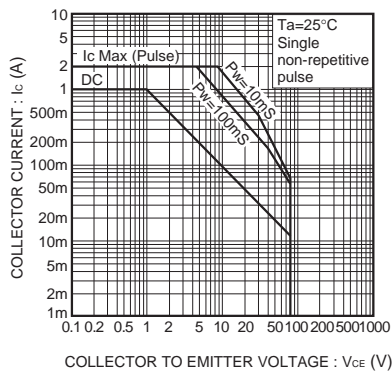


Fig.7 Safe operating area (2SD1863)

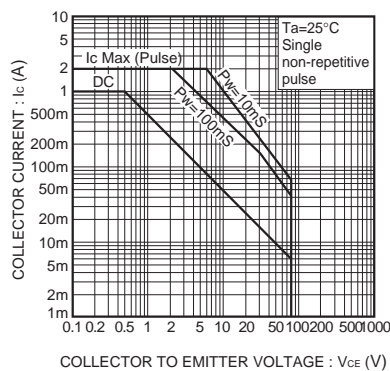


Fig.8 Safe operating area (2SD1898)

Notes

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