

Power Transistor (80V, 1A)

2SD1898 / 2SD1733 / 2SD1768S / 2SD1863

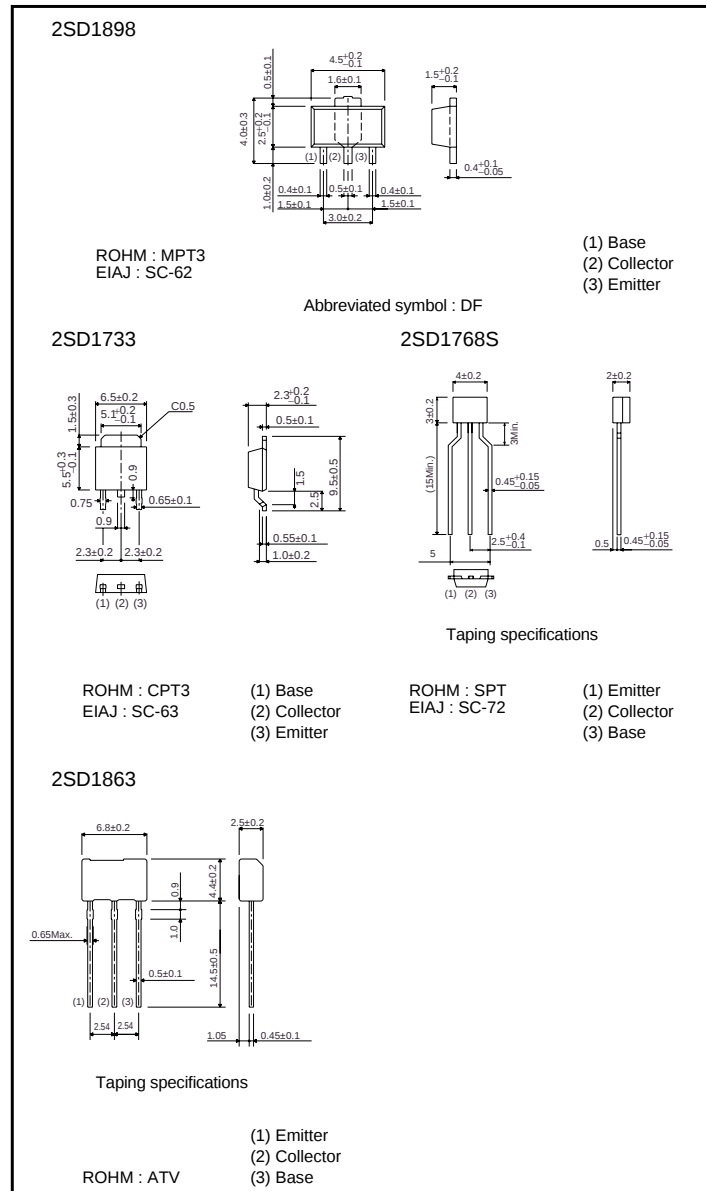
●Features

- 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

●External dimensions (Unit : mm)



2SD1898 / 2SD1733 / 2SD1768S / 2SD1863

Transistors

●Absolute maximum ratings (Ta=25°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 *3
	2SD1733		1	W
			10	W (T _C =25°C)
	2SD1768S		0.3	W
	2SD1863		1	W *2
Junction temperature		T _J	150	°C
Storage temperature		T _{stg}	−55 to +150	°C

*1 Pw=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_{CBO}	120	—	—	V	$I_C=50\mu A$
Collector-emitter breakdown voltage		BV_{CEO}	80	—	—	V	$I_C=1mA$
Emitter-base breakdown voltage		BV_{EBO}	5	—	—	V	$I_E=50\mu A$
Collector cutoff current		I_{CBO}	—	—	1	μA	$V_{CB}=100V$
Emitter cutoff current		I_{EBO}	—	—	1	μA	$V_{EB}=4V$
DC current transfer ratio	2SD1863	h_{FE}	120	—	390	—	$V_{CE}=3V, I_C=0.5A$ *
	2SD1733, 2SD1898		82	—	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

Transistors

●Packaging specifications and h_{FE}

Type	h_{FE}	Package	Taping			
		Code	T100	TL	TP	TV2
		Basic ordering unit (pieces)	1000	2500	5000	2500
2SD1898	PQR		○	—	—	—
2SD1733	PQR		—	○	—	—
2SD1768S	QR		—	—	○	—
2SD1863	R		—	—	—	○

h_{FE} values are classified as follows :

Item	P	Q	R
h_{FE}	82~180	120~270	180~390

●Electrical characteristic curves

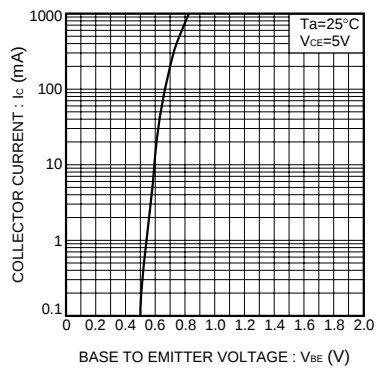


Fig.1 Grounded emitter propagation characteristics

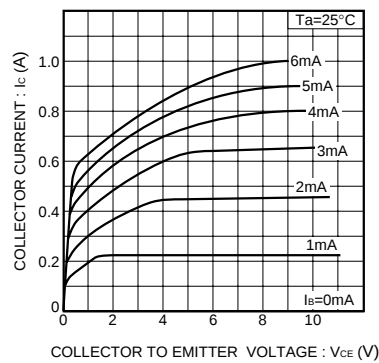


Fig.2 Grounded emitter output characteristics

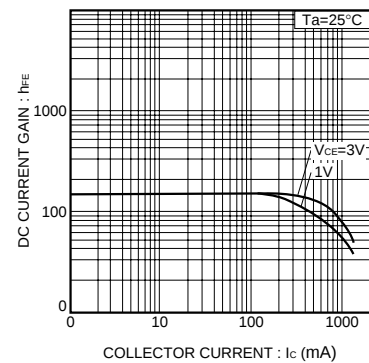


Fig.3 DC current gain vs. collector current

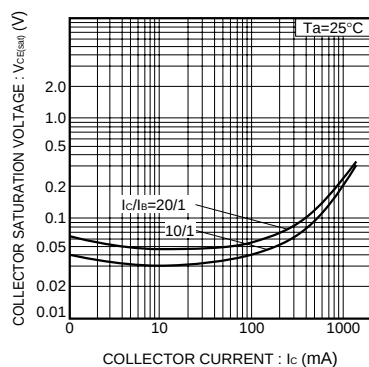


Fig.4 Collector-emitter saturation voltage vs. collector current

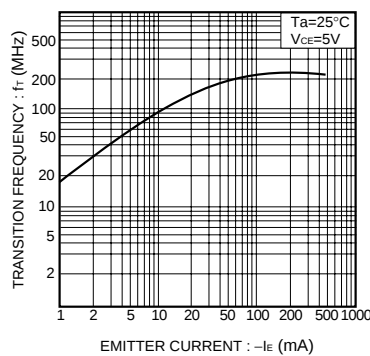


Fig.5 Gain bandwidth product vs. emitter current

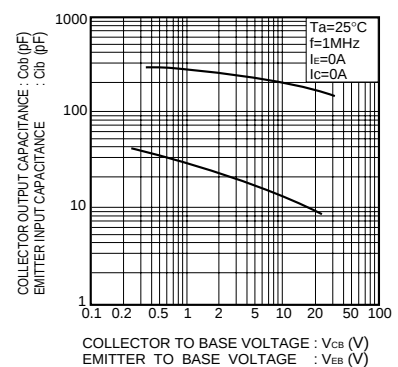


Fig.6 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

Transistors

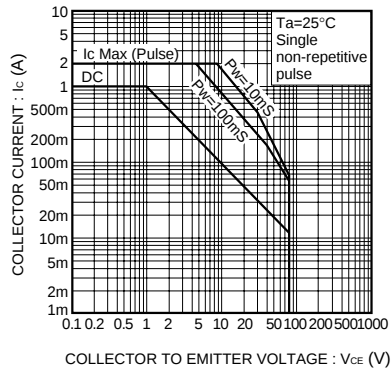


Fig.7 Safe operating area
(2SD1863)

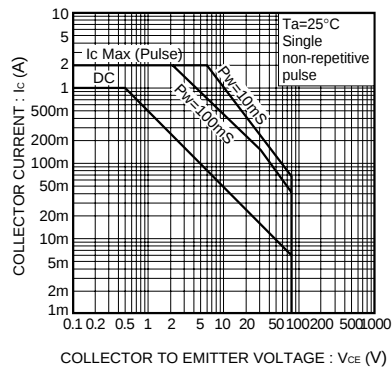


Fig.8 Safe operating area
(2SD1898)

Notes

- No technical content pages of this document may be reproduced in any form or transmitted by any means without prior permission of ROHM CO.,LTD.
- The contents described herein are subject to change without notice. The specifications for the product described in this document are for reference only. Upon actual use, therefore, please request that specifications to be separately delivered.
- Application circuit diagrams and circuit constants contained herein are shown as examples of standard use and operation. Please pay careful attention to the peripheral conditions when designing circuits and deciding upon circuit constants in the set.
- Any data, including, but not limited to application circuit diagrams information, described herein are intended only as illustrations of such devices and not as the specifications for such devices. ROHM CO.,LTD. disclaims any warranty that any use of such devices shall be free from infringement of any third party's intellectual property rights or other proprietary rights, and further, assumes no liability of whatsoever nature in the event of any such infringement, or arising from or connected with or related to the use of such devices.
- Upon the sale of any such devices, other than for buyer's right to use such devices itself, resell or otherwise dispose of the same, no express or implied right or license to practice or commercially exploit any intellectual property rights or other proprietary rights owned or controlled by
- ROHM CO., LTD. is granted to any such buyer.
- Products listed in this document use silicon as a basic material.
Products listed in this document are no antiradiation design.

The products listed in this document are designed to be used with ordinary electronic equipment or devices (such as audio visual equipment, office-automation equipment, communications devices, electrical appliances and electronic toys).

Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.

About Export Control Order in Japan

Products described herein are the objects of controlled goods in Annex 1 (Item 16) of Export Trade Control Order in Japan.

In case of export from Japan, please confirm if it applies to "objective" criteria or an "informed" (by MITI clause) on the basis of "catch all controls for Non-Proliferation of Weapons of Mass Destruction.