

Medium Power Transistor (32V, 1A)

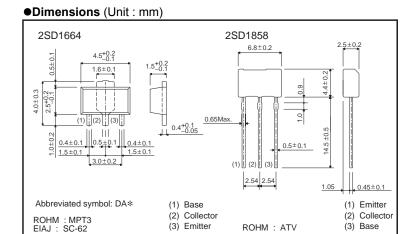
2SD1664 / 2SD1858

Features

- 1) Low $V_{CE(sat)} = 0.15V(Typ.)$ (Ic / IB = 500mA / 50mA)
- 2) Compliments 2SB1132 / 2SB1237

Structure

Epitaxial planar type NPN silicon transistor



^{*} Denotes her

●Absolute maximum ratings (Ta=25°C)

	•	,			
Parameter		Symbol	Limits	Unit	
Collector-base voltage		Vсво	40	V	
Collector-emitter voltage		VCEO	32	V	
Emitter-base voltage		VEBO	5	V	
Collector current		Ic	1	A (DC)	
Collector current		IC	2	A (Pulse) *1	
	2SD1664	Pc	0.5		
Collector power dissipation			2	W *2	
power dissipation	2SD1858		1	*3	
Junction temperature		Tj	150	°C	
Storage temperature		Tstg	-55 to +150	°C	

^{*1} Pw=20ms, duty=1/2

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
Collector-base breakdown voltage	ВУсво	40	_	_	V	Ic=50μA
Collector-emitter breakdown voltage	BVceo	32	_	_	V	Ic=1mA
Emitter-base breakdown voltage	ВУево	5	_	_	V	Iε=50μA
Collector cutoff current	Ісво	_	_	0.5	μΑ	Vcb=20V
Emitter cutoff current	ІЕВО	_	_	0.5	μΑ	V _{EB} =4V
DC current transfer ratio	hfe	120	_	390	_	VcE=3V, Ic=100mA
Collector-emitter saturation voltage	VCE(sat)	_	0.15	0.4	V	Ic/I _B =500mA / 50mA
Transition frequency	f⊤	_	150	_	MHz	Vc=5V, I=-50mA, f=100MHz
Output capacitance	Cob	_	15	_	pF	Vcb=10V, Ie=0A, f=1MHz

^{*2} When mounted on a $40 \times 40 \times 0.7$ mm ceramic board.

^{*3} When it is mounted on the copper clad PCB (1.7mm thick) with land size for collector 1 square CM or larger.

2SD1664 / 2SD1858 Data Sheet

●Packaging specifications and hFE

		Package	Taping	
		Code	T100	TV2
Туре	hfe	Basic ordering unit (pieces)	1000	2500
2SD1664	QR		0	_
2SD1858	QR		_	0

hfe values are classified as follows:

Item	Q	R
hfe	120 to 270	180 to 390

•Electrical characteristics curves

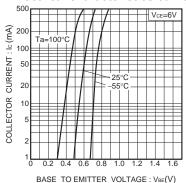


Fig.1 Grounded emitter propagation characteristics

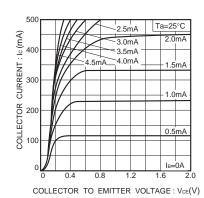


Fig.2 Grounded emitter output characteristics

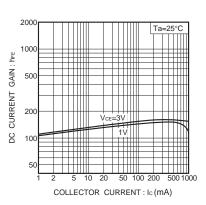


Fig.3 DC current gain vs. collector current (I)

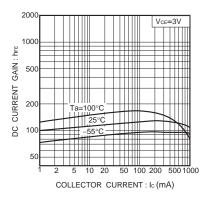


Fig.4 DC current gain vs. collector current (II)

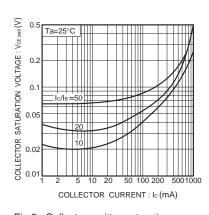


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

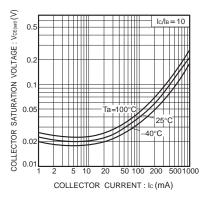


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

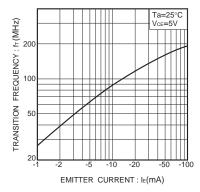


Fig.7 Gain bandwidth product vs. emitter current

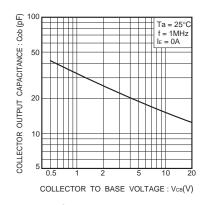


Fig.8 Collector output capacitance vs. collector-base voltage

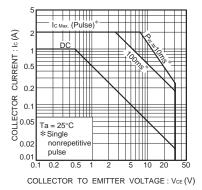


Fig.9 Safe operating area

(2SD1664)

2SD1664 / 2SD1858 Data Sheet

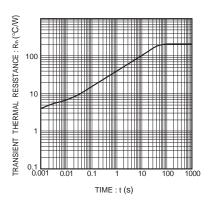


Fig.10 Transient thermal resistance (2SD1664)

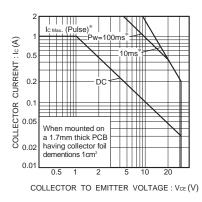


Fig.11 Safe operating area (2SD1858)

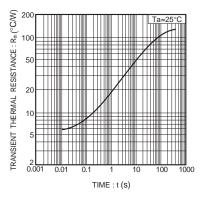


Fig.12 Transient thermal resistance (2SD1858)

Notes

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