

Power Transistor (160V , 1.5A)

2SD1918 / 2SD1857A

●Features

- 1) High breakdown voltage.($V_{CE0}=160V$)
- 2) Low collector output capacitance.
(Typ. 20pF at $V_{CB}=10V$)
- 3) High transition frequency.($f_T=80MHz$)
- 4) Complements the 2SB1275.

●Absolute maximum ratings (Ta = 25°C)

Parameter		Symbol	Limits	Unit
Collector-base voltage		V _{CB0}	160	V
Collector-emitter voltage		V _{CE0}	160	V
Emitter-base voltage		V _{EB0}	5	V
Collector current		I _C	1.5	A(DC)
			3	A(Pulse)
Collector power dissipation	2SD1857A	P _C	1	W
	2SD1918		1	W
			10	W(T _C =25°C)
Junction temperature		T _J	150	°C
Storage temperature		T _{st0}	-55~+150	°C

* 1 Pw=200msec duty=1/2

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- * 2 Printed circuit board 1.7mm thick, collector plating 1cm² or larger.

●Packaging specifications and h_{FE}

Type	2SD1918	2SD1857A
Package	CPT3	ATV
hFE	QR	PQ
Marking	—	—
Code	TL	TV2
Basic ordering unit (pieces)	2500	2500

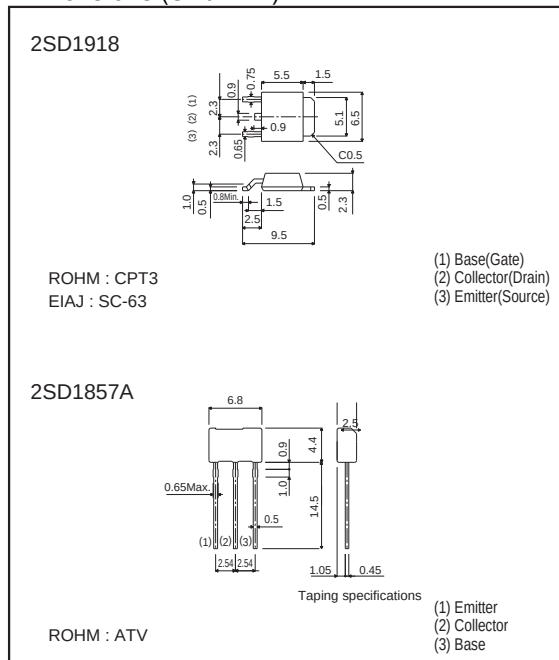
* Denotes h_{FE}

●Electrical characteristics (Ta = 25°C)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage		BV_{CBO}	160	—	—	V	$I_C = 50\mu A$
Collector-emitter breakdown voltage		BV_{CEO}	160	—	—	V	$I_C = 1mA$
Emitter-base breakdown voltage		BV_{EBO}	5	—	—	V	$I_E = 50\mu A$
Collector cutoff current		I_{CBO}	—	—	1	μA	$V_{CB} = 120V$
Emitter cutoff current		I_{EBO}	—	—	1	μA	$V_{EB} = 4V$
Collector-emitter saturation voltage		$V_{CE(sat)}$	—	—	2	V	$I_C/I_E = 1A/0.1A$ *
Base-emitter saturation voltage		$V_{BE(sat)}$	—	—	1.5	V	$I_C/I_E = 1A/0.1A$ *
DC current transfer ratio	2SD1918	h_{FE}	120	—	390	—	$V_{CE}/I_C = 5V/0.1A$
	2SD1857A		82	—	270	—	
Transition frequency		f_T	—	80	—	MHz	$V_{CE} = 5V$, $I_E = -0.1A$, $f = 30MHz$
Output capacitance		C_{ob}	—	20	—	pF	$V_{CB} = 10V$, $I_E = 0A$, $f = 1MHz$

* Measured using pulse current.

● **Dimensions** (Unit : mm)



●Electrical characteristic curves

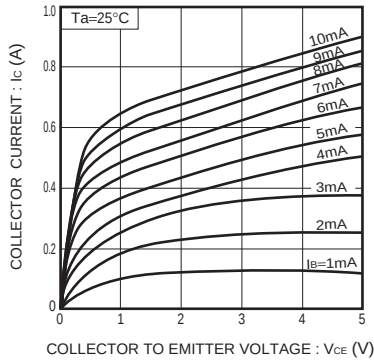


Fig.1 Ground emitter output characteristics

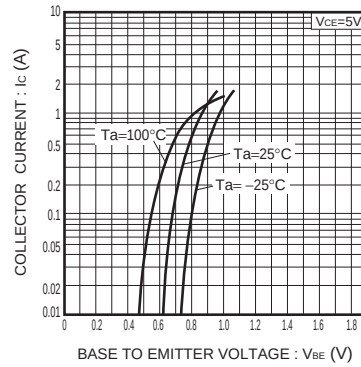


Fig.2 Ground emitter propagation characteristics

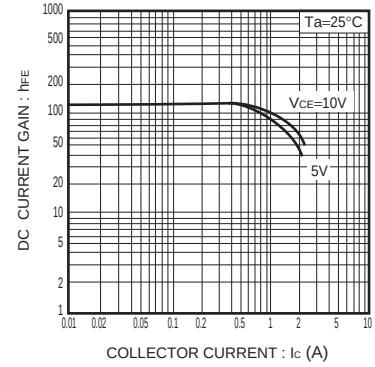


Fig.3 DC current gain vs. collector current (I)

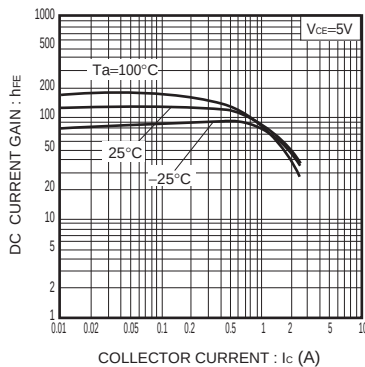


Fig.4 DC current gain vs. collector current (II)

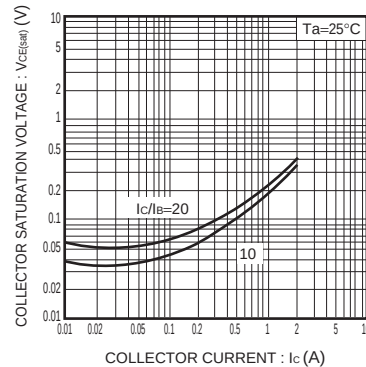


Fig.5 Collector-emitter saturation voltage vs. collector current

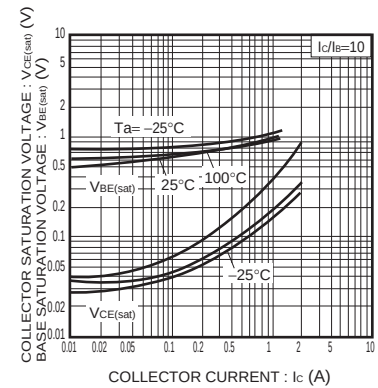
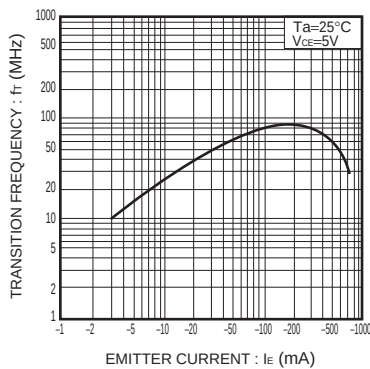
Fig.6 Collector-emitter saturation voltage vs. collector current
Base-emitter saturation voltage

Fig.7 Gain bandwidth products vs. emitter current

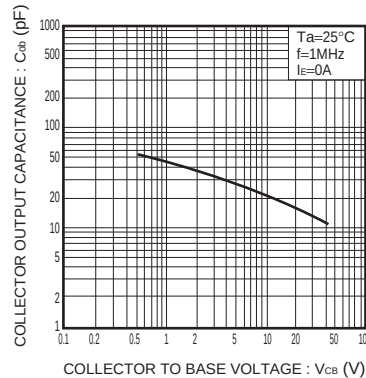


Fig.8 Collector output capacitance vs. collector-base voltage

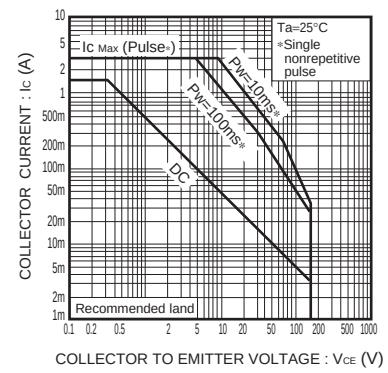


Fig.9 Safe operating area (2SD2211)

Notes

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