

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 2SB1236A.

●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	160	V
Collector-emitter voltage	V_{CEO}	160	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	1.5	A(DC)
		3	A(Pulse) *1
Collector power dissipation	P_C	1	W *2
		10	W ($T_C=25^\circ C$)
Junction temperature	T_J	150	°C
Storage temperature	T_{stg}	-55 ~ +150	°C

* 1 $P_w=200msec$ duty=1/2
* 2 Printed circuit board 1.7mm thick, collector plating 1cm² or larger.

●Packaging specifications and hFE

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

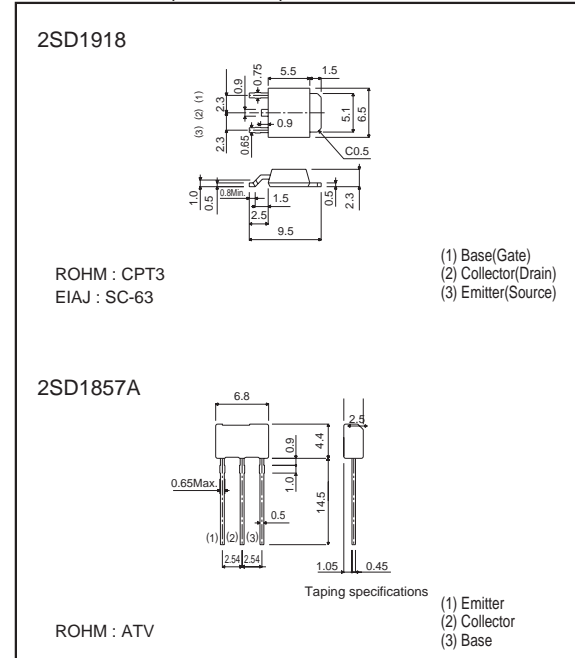
* Denotes hFE

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	V_{CBO}	160	-	-	V	$I_C = 50\mu A$
Collector-emitter breakdown voltage	V_{CEO}	160	-	-	V	$I_C = 1mA$
Emitter-base breakdown voltage	V_{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	$I_C/I_B = 1A/0.1A$ *
Base-emitter saturation voltage	$V_{BE(sat)}$	-	-	1.5	V	$I_C/I_B = 1A/0.1A$ *
DC current transfer ratio	2SD1918	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

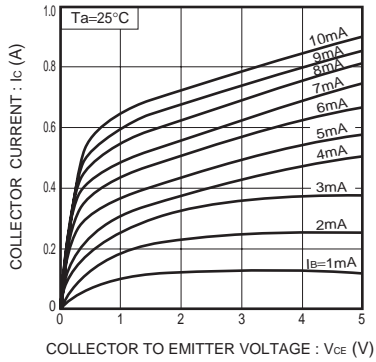


Fig.1 Ground emitter output characteristics

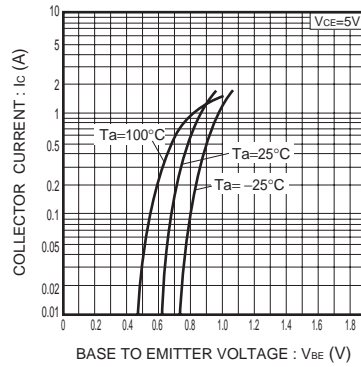


Fig.2 Ground emitter propagation characteristics

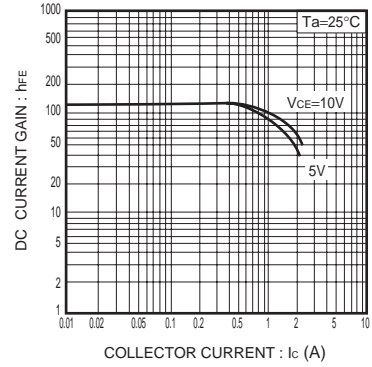


Fig.3 DC current gain vs. collector current (I)

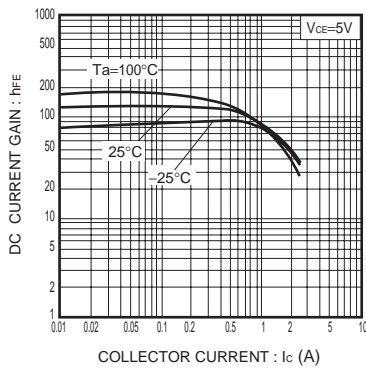


Fig.4 DC current gain vs. collector current (II)

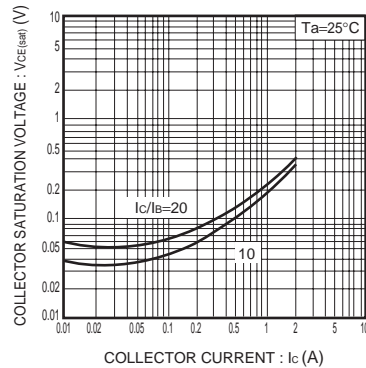


Fig.5 Collector-emitter saturation voltage vs. collector current

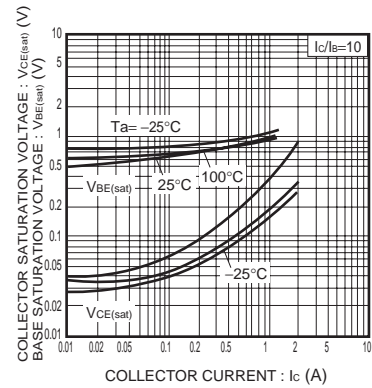


Fig.6 Collector-emitter saturation voltage vs. collector current
Base-emitter saturation voltage

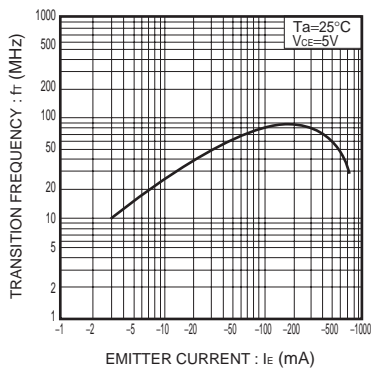


Fig.7 Gain bandwidth products vs. emitter current

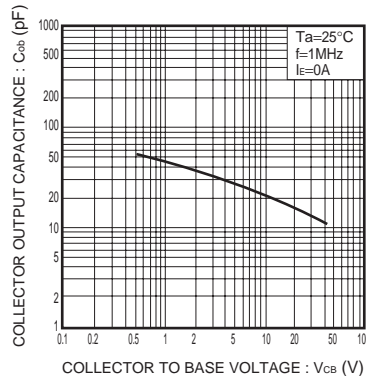


Fig.8 Collector output capacitance vs. collector-base voltage

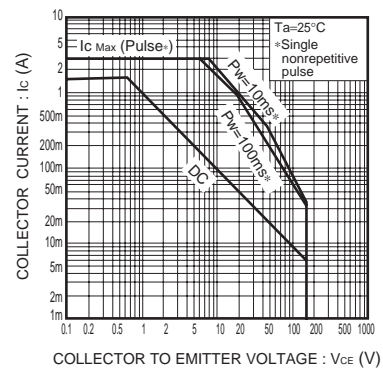


Fig.9 Safe operating area (2SD1918)

Notes

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