

High-current gain Power Transistor (60V, 3A)

2SD2318

●Features

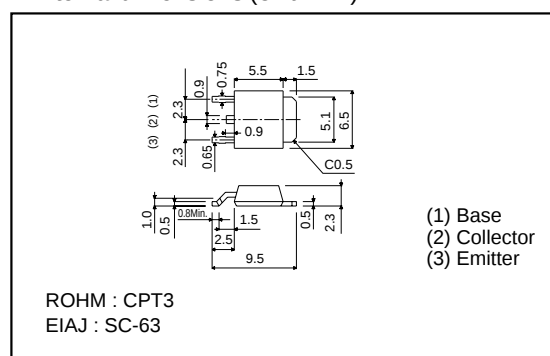
- 1) High DC current gain.
- 2) Low saturation voltage.
(Typ. $V_{CE(sat)} = 0.5V$ at $I_C / I_B = 2A / 0.5A$)
- 3) Complements the 2SB1639.

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	80	V
Collector-emitter voltage	V_{CEO}	60	V
Emitter-base voltage	V_{EBO}	6	V
Collector current	I_C	3	A
		4.5	A(Pulse) *
Collector power dissipation	P_C	1	W
		15	W(T _C =25°C)
Junction temperature	T_J	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

* Single pulse $P_W=100ms$

●External dimensions (Unit : mm)



●Packaging specifications and h_{FE}

Type	2SD2318
Package	CPT3
h _{FE}	UV
Code	TL
Basic ordering unit (pieces)	2500

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	80	—	—	V	$I_C=50\mu A$
Collector-emitter breakdown voltage	BV_{CEO}	60	—	—	V	$I_C=1mA$
Emitter-base breakdown voltage	BV_{EBO}	6	—	—	V	$I_E=50\mu A$
Collector cutoff current	I_{CBO}	—	—	100	μA	$V_{CB}=80V$
Emitter cutoff current	I_{EBO}	—	—	100	μA	$V_{EB}=6V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	1.0	V	$I_C/I_B=2A/0.05A$ *
Base-emitter saturation voltage	$V_{BE(sat)}$	—	—	1.5	V	$I_C/I_B=2A/0.05A$ *
DC current transfer ratio	h_{FE}	560	—	1800	—	$V_{CE}/I_C=4V/0.5A$
Transition frequency	f_T	—	50	—	MHz	$V_{CE}=5V, I_E=0.2A, f=10MHz$
Output capacitance	C_{ob}	—	60	—	pF	$V_{CB}=10V, I_E=0A, f=1MHz$ *

*Measured using pulse current.

Transistors

●Electrical characteristics curves

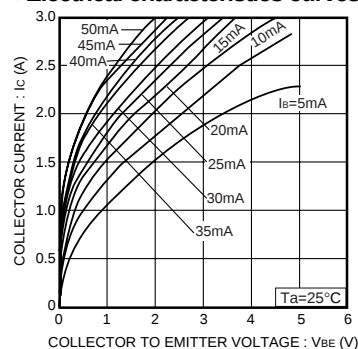


Fig.1 Grounded emitter output characteristics

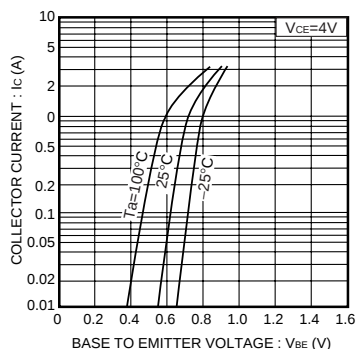


Fig.2 Grounded emitter propagation characteristics

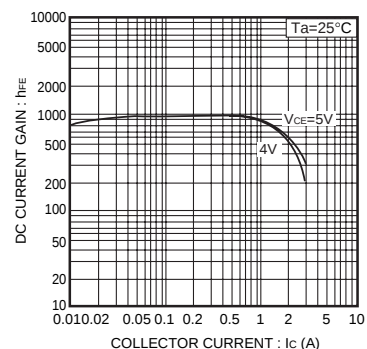


Fig.3 DC current gain vs. collector current

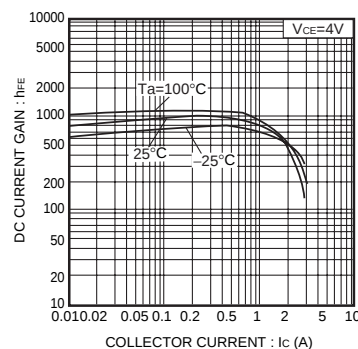


Fig.4 DC current gain vs. collector current

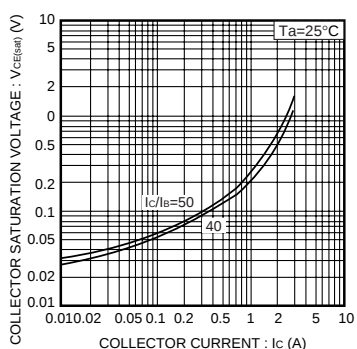


Fig.5 Collector-emitter saturation voltage vs. collector current

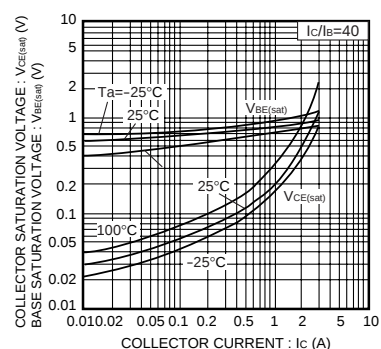


Fig.6 Collector-emitter saturation voltage vs. collector current

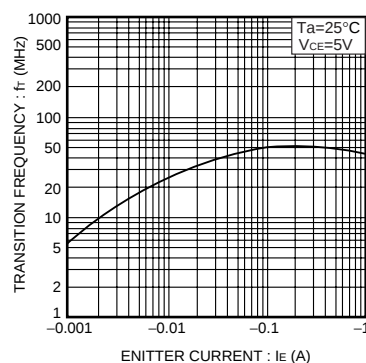


Fig.7 Resistance ratio vs. collector current

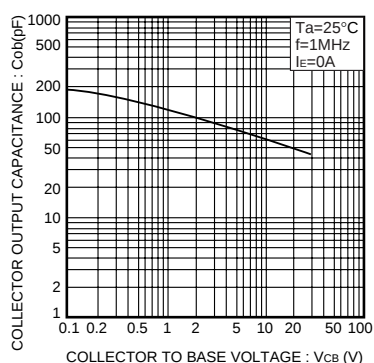


Fig.8 Collector output capacitance vs. collector-base voltage

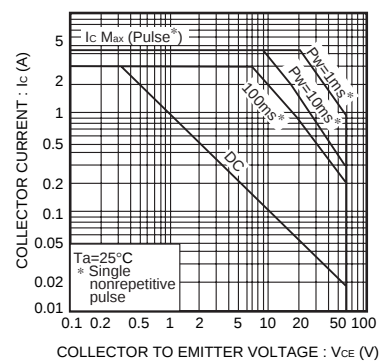


Fig.9 Safe operating area

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