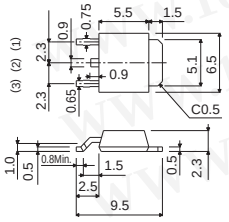
High-current gain Power Transistor (60V, 3A)

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)

●Dimensions (Unit : mm)



(1) Base
(2) Collector
(3) Emitter

ROHM : CPT3
EIAJ : SC-63

●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	Tj	150	°C
Storage temperature	Tstg	−55 to +150	°C

* Single pulse P_W=100ms

●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=50μA
Collector-emitter breakdown voltage	BV_{CEO}	60	–	–	V	I_C=1mA
Emitter-base breakdown voltage	BV_{EBO}	6	–	–	V	I_E=50μA
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	Cob	–	60	–	pF	V_{CB}=10V, I_E=0A, f=1MHz *

*Measured using pulse current.

●Electrical characteristic curves

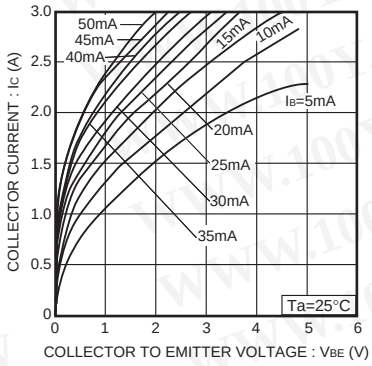


Fig.1 Grounded emitter output characteristics

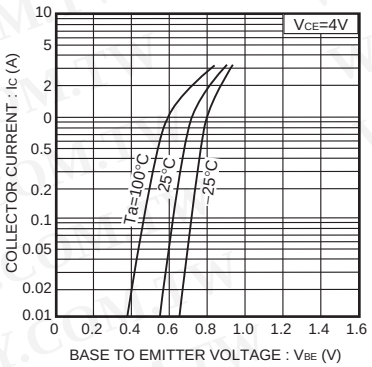


Fig.2 Grounded emitter propagation characteristics

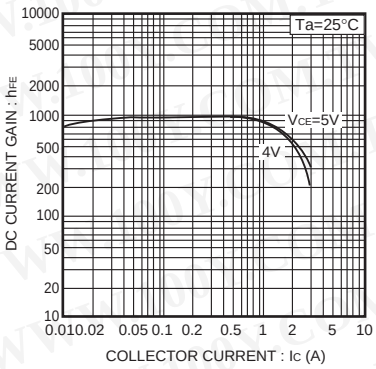


Fig.3 DC current gain vs. collector current

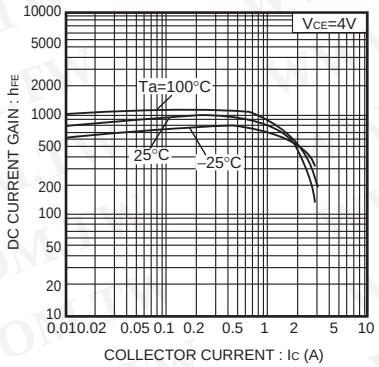


Fig.4 DC current gain vs. collector current

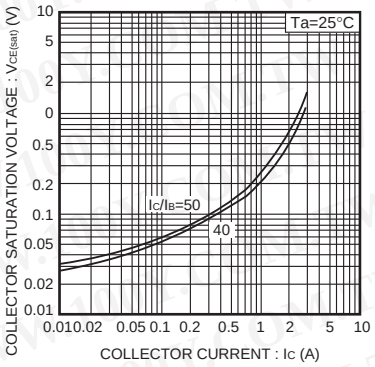


Fig.5 Collector-emitter saturation voltage vs. collector current

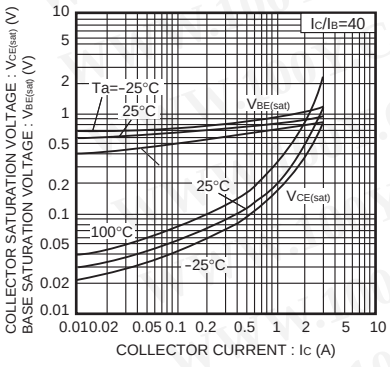


Fig.6 Collector-emitter saturation voltage
Base-emitter saturation voltage -Collector current

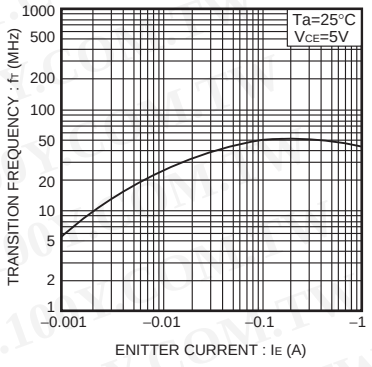


Fig.7 Resistance ratio vs. collector current

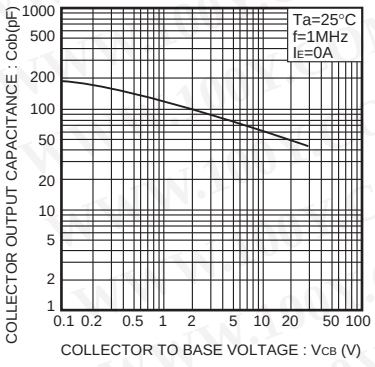


Fig.8 Collector output capacitance vs. collector-base voltage

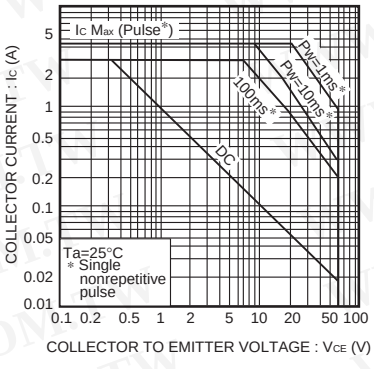


Fig.9 Safe operating area

Notes

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