Power transistor (50V, 3A)

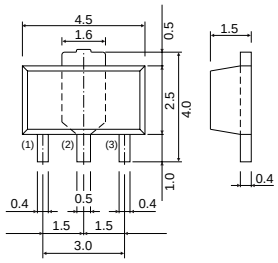
2SD1963

●**Features**

1) Low saturation voltage, typically
   $V_{CE(sat)}$ = –0.45V (Max.) at I_C/I_B = –1.5A / –0.15A.
2) Excellent DC current gain characteristics.
3) Complements the 2SB1308.

●**External dimensions** (Unit : mm)

MPT3



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

●**Absolute maximum ratings** (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	50	V
Collector-emitter voltage	V_{CEO}	20	V
Emitter-base voltage	V_{EBO}	6	V
Collector current	I_C	3	A(DC)
		5	A(Pulse) ✻1
Collector power dissipation	P_C	0.5	W
		2.0	W ✻2
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to 150	°C

✻1 Single pulse, Pw=10ms
✻2 When mounted on a 40×40×0.7mm ceramic board.

●**Electrical characteristics** (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	50	–	–	V	I_C=50μA
Collector-emitter breakdown voltage	BV_{CEO}	20	–	–	V	I_C= 1mA
Emitter-base breakdown voltage	BV_{EBO}	6	–	–	V	I_E= 50μA
Collector cutoff current	I_{CBO}	–	–	0.5	μA	V_{CB}=40V
Emitter cutoff current	I_{EBO}	–	–	0.5	μA	V_{EB}=5V
DC current transfer ratio	h_{FE}	180	–	560	–	V_{CE}=2V, I_C=0.5A ✻
Collector-emitter saturation voltage	$V_{CE(sat)}$	–	0.25	0.45	V	I_C/I_B=1.5A/ 0.15A ✻
Transition frequency	f_T	–	150	–	MHz	V_{CE}=6V, I_E= –50mA, f=100MHz
Output capacitance	Cob	–	35	–	pF	V_{CB}=20V, I_E=0A, f=1MHz

✻ Measured using pulse current.

●Packaging specifications and h_{FE}

Type	2SD1963
Package	MPT3
h_{FE}	RS
Marking	DG∗
Code	T100
Basic ordering unit (pieces)	1000

∗ Denotes h_{FE}

●Electrical characteristic curves

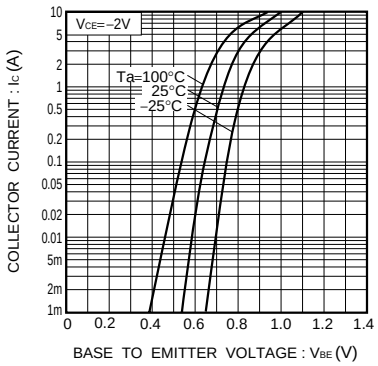


Fig.1 Grounded emitter propagation characteristics

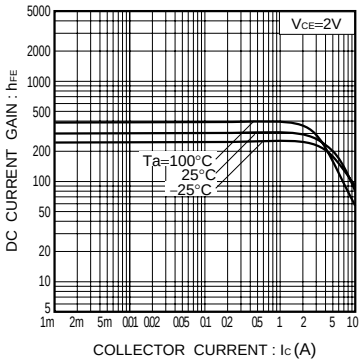


Fig.2 DC current gain vs. collector current

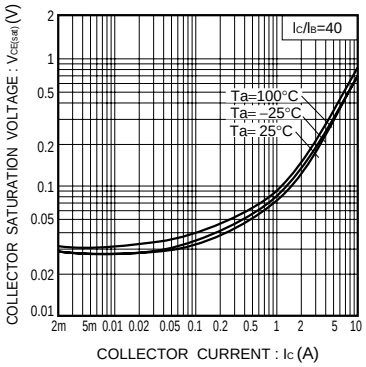


Fig.3 Collector-emitter saturation voltage vs. collector current

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