

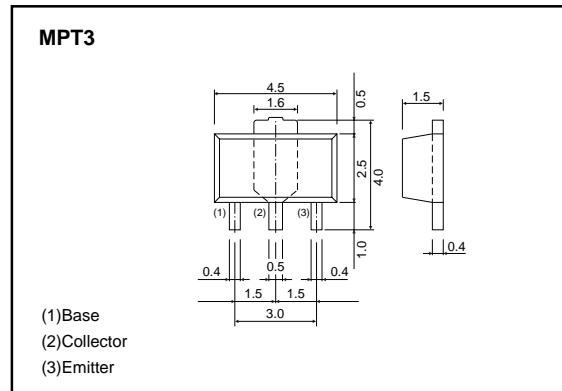
# Power transistor (50V, 3A)

## 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)



### ●Absolute maximum ratings ( $T_a=25^\circ C$ )

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	$T_J$	150	°C
Storage temperature	$T_{STG}$	-55 to 150	°C

\*1 Single pulse,  $P_w=10ms$

\*2 When mounted on a  $40\times 40\times 0.7$ mm ceramic board.

### ●Electrical characteristics ( $T_a=25^\circ C$ )

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	$BV_{CBO}$	50	—	—	V	$I_C=50\mu A$
Collector-emitter breakdown voltage	$BV_{CEO}$	20	—	—	V	$I_C=1mA$
Emitter-base breakdown voltage	$BV_{EBO}$	6	—	—	V	$I_E=50\mu A$
Collector cutoff current	$I_{CBO}$	—	—	0.5	$\mu A$	$V_{CB}=40V$
Emitter cutoff current	$I_{EBO}$	—	—	0.5	$\mu A$	$V_{EB}=5V$
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	$C_{OB}$	—	35	—	pF	$V_{CB}=20V, I_E=0A, f=1MHz$

\* Measured using pulse current.

## Transistors

●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

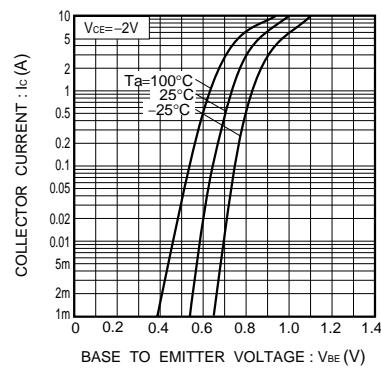


Fig.1 Grounded emitter propagation characteristics

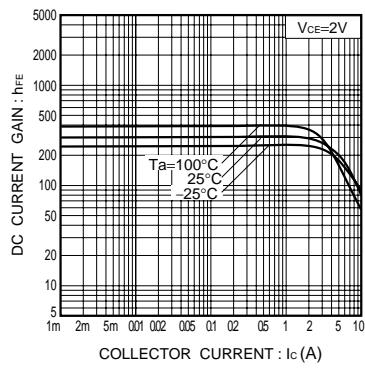


Fig.2 DC current gain vs. collector current

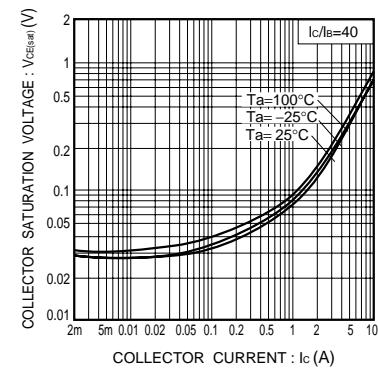


Fig.3 Collector-emitter saturation voltage vs. collector current

## Appendix

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