

Power Transistor (−50V, −3A)

2SB1308

●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 2SD1963.

●Packaging specifications and h_{FE}

Type	2SB1308
Package	MPT3
h_{FE}	PQR
Marking	BF*
Code	T100
Basic ordering unit (pieces)	1000

* Denotes h_{FE}

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	−30	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	
Junction temperature	T_J	150	°C
Storage temperature	T_{stg}	−55~+150	°C

*1 Single pulse, $P_w=100ms$

*2 When mounted on a 40×40×0.7 ceramic board.

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	−30	—	—	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	μA	$V_{CB} = -20V$
Emitter cutoff current	I_{EBO}	—	—	−0.5	μA	$V_{EB} = -5V$
DC current transfer ratio	h_{FE}	82	—	390	—	$V_{CE}/I_C = -2V/-0.5A$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	−0.45	V	$I_C/I_B = -1.5A/-0.15A$
Transition frequency	f_T	—	120	—	MHz	$V_{CE} = -6V, I_E = 50mA, f = 30MHz$
Output capacitance	C_{ob}	—	60	—	pF	$V_{CE} = -20V, I_E = 0A, f = 1MHz$

* Measured using pulse current

(94S-166-B204)

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.

●Packaging specifications and h_{FE}

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

* Denotes h_{FE}

●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) *
Collector power dissipation	P_C	0.5	W
Junction temperature	T_J	150	°C
Storage temperature	T_{stg}	−55~+150	°C

* Single pulse, $P_w=100ms$

●Electrical characteristics (Ta=25°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	μA	$V_{CB} = 40V$
Emitter cutoff current	I_{EBO}	—	—	0.5	μA	$V_{EB} = 5V$
DC current transfer ratio	h_{FE}	120	—	560	—	$V_{CE}/I_C = 2V/0.5A$
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

(94S-342-D204)

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