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.

●Absolute maximum ratings (Ta=25℃)

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	W ✻2
Junction temperature	Tj	150	℃
Storage temperature	Tstg	−55~+150	℃

✻1 Single pulse, Pw=100ms ✻2 When mounted on a 40×40×0.7 ceramic board.

●Packaging specifications and h_{FE}

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

✻ Denotes h_{FE}

●Electrical characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	−30	—	—	V	I_C = −50 μA
Collector-emitter breakdown voltage	BV_{CEO}	−20	—	—	V	I_C = −1mA
Emitter-base breakdown voltage	BV_{EBO}	−6	—	—	V	I_E = −50 μA
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	fT	—	120	—	MHz	V_{CE} = −6V, I_E = 50mA, f=30MHz
Output capacitance	Cob	—	60	—	pF	V_{CB} = −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.

●Absolute maximum ratings (Ta=25℃)

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	Tj	150	℃
Storage temperature	Tstg	−55~+150	℃

✻ Single pulse, Pw=100ms

●Packaging specifications and h_{FE}

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

✻ Denotes h_{FE}

●Electrical characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	50	—	—	V	I_C = 50 μA
Collector-emitter breakdown voltage	BV_{CEO}	20	—	—	V	I_C = 1mA
Emitter-base breakdown voltage	BV_{EBO}	6	—	—	V	I_E = 50 μA
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	fT	—	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

(94S-342-D204)