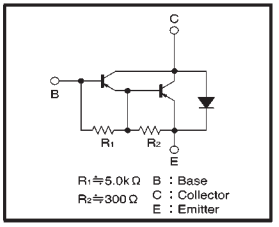
Power Transistor (−120V, −6A)

2SB1340

●Features

1) Darlington connection for high DC current gain.
2) Built-in resistor between base and emitter.
3) Built-in damper diode.
4) Complements the 2SD1889.

●Circuit diagram



●Absolute maximum ratings (Ta=25℃)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	−120	V
Collector-emitter voltage	V_{CES}	−120	V
Emitter-base voltage	V_{EBO}	−6	V
Collector current	I_C	−6	A (DC)
		−10	A (Pulse) ✻
Collector power dissipation	P_C	2	W
		30	W (Tc=25℃)
Junction temperature	Tj	150	℃
Storage temperature	Tstg	−55～+150	℃

✻ Single pulse, P_W=10ms

●Packaging specifications and h_{FE}

Type	2SB1340
Package	TO-220FP
h_{FE}	2k～20k
Code	—
Basic ordering unit (pieces)	500

●Electrical characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	−120	—	—	V	I_C=−50μA
Collector-emitter breakdown voltage	BV_{CEO}	−120	—	—	V	I_C=−5mA
Collector cutoff current	I_{CBO}	—	—	−100	μA	V_{CB}=−120V
Emitter cutoff current	I_{EBO}	—	—	−3	mA	V_{EB}=−5V
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	−1.5	V	I_C/I_B=−3A/−6mA ✻1
DC current transfer ratio	h_{FE}	2k	—	20k	—	V_{CE}/I_C=−3V/−2A ✻1
Transition frequency	fT	—	12	—	MHz	V_{CE}=−5V, I_E=0.5A, f=10MHz ✻2
Output capacitance	Cob	—	70	—	pF	V_{CB}=−10V, I_E=0A, f=1MHz

✻1 Measured using pulse current. ✻2 Transition frequency of the device.

(96-650-B88)

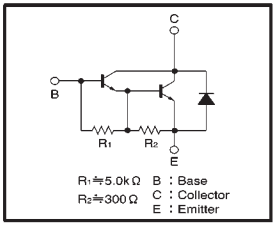
Power Transistor (120V, 6A)

2SD1889

●Features

1) Darlington connection for high DC current gain.
2) Built-in resistor between base and emitter.
3) Built-in damper diode.
4) Complements the 2SB1340.

●Circuit diagram



●Absolute maximum ratings (Ta=25℃)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	120	V
Collector-emitter voltage	V_{CES}	120	V
Emitter-base voltage	V_{EBO}	6	V
Collector current	I_C	6	A (DC)
		10	A (Pulse) ✻
Collector power dissipation	P_C	2	W
		30	W (Tc=25℃)
Junction temperature	Tj	150	℃
Storage temperature	Tstg	−55～+150	℃

✻ Single pulse, P_W=10ms.

●Packaging specifications and h_{FE}

Type	2SD1889
Package	TO-220FP
h_{FE}	2k～20k
Code	—
Basic ordering unit (pieces)	500

●Electrical characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	120	—	—	V	I_C=50μA
Collector-emitter breakdown voltage	BV_{CEO}	120	—	—	V	I_C=5mA
Collector cutoff current	I_{CBO}	—	—	100	μA	V_{CB}=120V
Emitter cutoff current	I_{EBO}	—	—	3	mA	V_{EB}=5V
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	1.5	V	I_C/I_B=3A/6mA ✻1
DC current transfer ratio	h_{FE}	2k	—	20k	—	V_{CE}/I_C=3V/2A ✻1
Transition frequency	fT	—	40	—	MHz	V_{CE}=5V, I_E=−0.2A, f=10MHz ✻2
Output capacitance	Cob	—	50	—	pF	V_{CB}=10V, I_E=0A, f=1MHz

✻1 Measured using pulse current. ✻2 Transition frequency of the device.

(96-765-D88)