

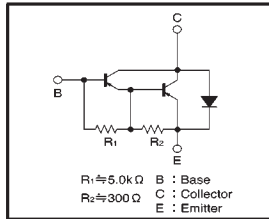
Power Transistor (−120V, −6A)

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



●Electrical characteristics (Ta=25°C)

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

*1 Measured using pulse current.

*2 Transition frequency of the device.

(96-650-B88)

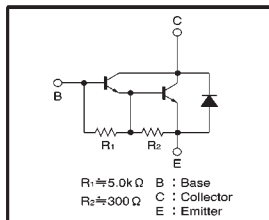
Power Transistor (120V, 6A)

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



●Electrical characteristics (Ta=25°C)

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

*1 Measured using pulse current.

*2 Transition frequency of the device.

(96-765-D88)

●Absolute maximum ratings (Ta=25°C)

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°C)
Junction temperature	T_J	150	°C
Storage temperature	T_{stg}	−55~+150	°C

* Single pulse, $P_w = 10\text{ms}$

●Packaging specifications and hFE

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

●Absolute maximum ratings (Ta=25°C)

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°C)
Junction temperature	T_J	150	°C
Storage temperature	T_{stg}	−55~+150	°C

* Single pulse, $P_w = 10\text{ms}$.

●Packaging specifications and hFE

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