

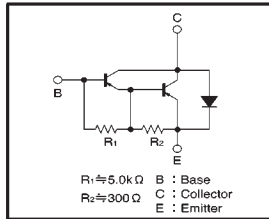
## Power Transistor (−120V, −6A)

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

\*1 Measured using pulse current.

\*2 Transition frequency of the device.

(96-650-B88)

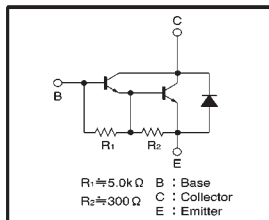
## Power Transistor (120V, 6A)

## 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



## ●Electrical characteristics (Ta=25°C)

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

\*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,  $P_w = 10ms$ 

## ●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,  $P_w = 10ms$ .

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Type	2SD1889
Package	TO-220FP
$h_{FE}$	2k~20k
Code	—
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