

Power Transistor (−80V, −4A)

2SB1644

●Features

- 1) Low saturation voltage, typically $V_{CE(sat)} = -0.5V$ at $I_C / I_B = -3A / -0.3A$.
- 2) Excellent DC current gain characteristics.

●Packaging specifications and hFE

Type	2SB1644
Package	PSD3
h_{FE}	EF
Code	T100
Basic ordering unit (pieces)	1000

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	−80	V
Collector-emitter voltage	V_{CEO}	−80	V
Emitter-base voltage	V_{EBO}	−5	V
Collector current	I_C	−4	A (DC)
		−6	A (Pulse) *
Collector power dissipation	P_C	30	W (Tc=25°C)
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}	−80	—	—	V	$I_C = -50 \mu A$
Collector-emitter breakdown voltage	BV_{CEO}	−60	—	—	V	$I_C = -1mA$
Emitter-base breakdown voltage	BV_{EBO}	−5	—	—	V	$I_E = -50 \mu A$
Collector cutoff current	I_{CBO}	—	—	−10	μA	$V_{CB} = -80V$
Emitter cutoff current	I_{EBO}	—	—	−10	μA	$V_{EB} = -4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	−1.5	V	$I_C/I_E = -3A/-0.3A$ *
Base-emitter saturation voltage	$V_{BE(sat)}$	—	—	−1.5	V	$I_C/I_E = -3A/-0.3A$ *
DC current transfer ratio	h_{FE}	100	—	320	—	$V_{CE}/I_C = -5V/-1A$
Transition frequency	f_T	—	12	—	MHz	$V_{CE} = -5V, I_E = 0.5A, f = 5MHz$ *
Output capacitance	C_{ob}	—	100	—	pF	$V_{CB} = -10V, I_E = 0A, f = 1MHz$

* Measured using pulse current.

(SPEC-B14UP)

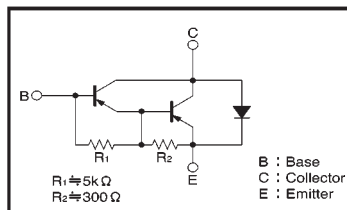
Power Transistor (−80V, −10A)

2SB1551

●Features

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

●Circuit diagram



●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	−80	V
Collector-emitter voltage	V_{CEO}	−80	V
Emitter-base voltage	V_{EBO}	−7	V
Collector current	I_C	−10	A (DC)
		−20	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 $P_w = 100ms$

●Packaging specifications and hFE

Type	2SB1551
Package	TO-220FP
h_{FE}	1k~20k
Code	—
Basic ordering unit (pieces)	500

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	−80	—	—	V	$I_C = -50 \mu A$
Collector-emitter breakdown voltage	BV_{CEO}	−80	—	—	V	$I_C = -5mA$
Collector cutoff current	I_{CBO}	—	—	−10	μA	$V_{CB} = -80V$
Emitter cutoff current	I_{EBO}	—	—	−3	mA	$V_{EB} = -5V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	−1	−1.5	V	$I_C/I_E = -3A/-6mA$ *1
DC current transfer ratio	h_{FE}	1000	—	20000	—	$V_{CE}/I_C = -3V/-5A$
Transition frequency	f_T	—	12	—	MHz	$V_{CE} = -5V, I_E = 0.5A, f = 10MHz$ *2
Output capacitance	C_{ob}	—	90	—	pF	$V_{CB} = -10V, I_E = 0A, f = 1MHz$

*1 Measured using pulse current.

*2 Transition frequency of the device.

(941-453-B415)