

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 h_{FE}

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

●Absolute maximum ratings ($T_a=25^\circ C$)

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 -6	A (DC) A (Pulse) *
Collector power dissipation	P_C	30	W ($T_c=25^\circ C$)
Junction temperature	T_J	150	°C
Storage temperature	T_{STG}	-55~+150	°C

* Single pulse, $P_w=100ms$ ●Electrical characteristics ($T_a=25^\circ C$)

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	—	$V_{CE}= -5V, I_E=0.5A, f=5MHz$
Transition frequency	f_T	—	12	—	MHz	$V_{CE}=-5V, I_E=0A, f=1MHz$
Output capacitance	Cob	—	100	—	pF	$V_{CB}=-10V, I_E=0A, f=1MHz$

* Measured using pulse current.

(SPEC-B14UP)

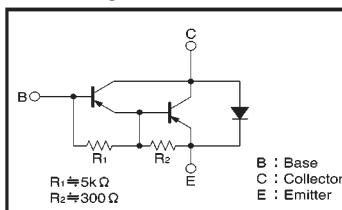
Power Transistor (-80V, -10A)

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 ($T_a=25^\circ C$)

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)
	I_{CP}	-20	A (Pulse) *
Collector power dissipation	P_C	2	W
Junction temperature	T_J	150	°C
Storage temperature	T_{STG}	-55~+150	°C

* Single pulse $P_w=100ms$ ●Packaging specifications and h_{FE}

Type	2SB1551
Package	TO-220FP
h_{FE}	1k~20k
Code	—

Basic ordering unit (pieces) 500

●Electrical characteristics ($T_a=25^\circ C$)

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	$I_C/I_E=-3A/-6mA$
DC current transfer ratio	h_{FE}	1000	—	20000	—	$V_{CE}= -5V, I_E=0.5A, f=10MHz$
Transition frequency	f_T	—	12	—	MHz	$V_{CE}=-5V, I_E=0A, f=1MHz$
Output capacitance	Cob	—	90	—	pF	$V_{CB}=-10V, I_E=0A, f=1MHz$

*1 Measured using pulse current.

*2 Transition frequency of the device.

(941-453-B415)