

Power Transistor (−15V, −1A)

2SB1590K

●Features

- 1) Low saturation voltage, $V_{CE(sat)} = -0.3(\text{Max.})$ at $I_C / I_E = -0.4A / -20mA$.
- 2) $I_C = -1A$
- 3) Complements the 2SD2444K.

●Packaging specifications and hFE

Type	2SB1590K
Package	SMT3
hFE	Q
Marking	BK*
Code	T146
Basic ordering unit (pieces)	3000

* Denotes hFE

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	−15	V
Collector-emitter voltage	V_{CEO}	−15	V
Emitter-base voltage	V_{EBO}	−6	V
Collector current	I_C	−1	A (DC)
Collector power dissipation	P_C	0.2	W
Junction temperature	T_J	150	°C
Storage temperature	T_{stg}	−55~+150	°C

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	−15	—	—	V	$I_C = -50 \mu A$
Collector-emitter breakdown voltage	BV_{CEO}	−15	—	—	V	$I_C = -1mA$
Emitter-base breakdown voltage	BV_{EBO}	−6	—	—	V	$I_E = -50 \mu A$
Collector cutoff current	I_{CBO}	—	—	−0.5	μA	$V_{CB} = -12V$
Emitter cutoff current	I_{EBO}	—	—	−0.5	μA	$V_{EB} = -5V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	−0.3	V	$I_C = -0.4A, I_E = -20mA$
DC current transfer ratio	h_{FE1}	120	—	270	—	$V_{CE}/I_C = -2V/-0.5A$
DC current transfer ratio	h_{FE2}	80	—	—	—	$V_{CE} = -2V, I_C = -800mA$
Transition frequency	f_T	—	200	—	MHz	$V_{CE} = -2V, I_C = 50mA, f = 100MHz$
Output capacitance	C_{ob}	—	15	—	pF	$V_{CB} = -10V, I_E = 0A, f = 1MHz$

(96-150-B218)

Power Transistor (15V, 1A)

2SD2444K

●Features

- 1) Low saturation voltage, $V_{CE(sat)} = 0.3V(\text{Max.})$ at $I_C / I_E = 0.4A / 20mA$.
- 2) $I_C = 1A$
- 3) Complements the 2SB1590K.

●Packaging specifications and hFE

Type	2SD2444K
Package	SMT3
hFE	R
Marking	BS*
Code	T146
Basic ordering unit (pieces)	3000

* Denotes hFE

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	15	V
Collector-emitter voltage	V_{CEO}	15	V
Emitter-base voltage	V_{EBO}	6	V
Collector current	I_C	1	A (DC)
Collector power dissipation	P_C	0.2	W
Junction temperature	T_J	150	°C
Storage temperature	T_{stg}	−55~+150	°C

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	15	—	—	V	$I_C = 50 \mu A$
Collector-emitter breakdown voltage	BV_{CEO}	15	—	—	V	$I_C = 1mA$
Emitter-base breakdown voltage	BV_{EBO}	6	—	—	V	$I_E = 50 \mu A$
Collector cutoff current	I_{CBO}	—	—	0.5	μA	$V_{CB} = 12V$
Emitter cutoff current	I_{EBO}	—	—	0.5	μA	$V_{EB} = 5V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	0.3	V	$I_C = 400mA, I_E = 20mA$
DC current transfer ratio	h_{FE}	180	—	390	—	$V_{CE}/I_C = 2V/50mA$
Transition frequency	f_T	—	200	—	MHz	$V_{CE} = 2V, I_E = -50mA, f = 100MHz$
Output capacitance	C_{ob}	—	15	—	pF	$V_{CB} = -10V, I_E = 0A, f = 1MHz$

(96-247-D218)