

Power Transistor (−15V, −1A)

2SB1590K

●Features

- 1) Low saturation voltage, $V_{CE(sat)} = -0.3(\text{Max.})$ at $I_c / I_b = -0.4A / -20\text{mA}$.
- 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	$I_c = -1\text{mA}$
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	$I_c = -0.4A, I_b = -20\text{mA}$
DC current transfer ratio	h_{FE1}	120	—	270	—	$V_{CE}/I_c = -2V/-0.5A$
DC current transfer ratio	h_{FE2}	80	—	—	—	$V_{CE} = -2V, I_c = -800\text{mA}$
Transition frequency	f_T	—	200	—	MHz	$V_{CE} = -2V, I_c = 50\text{mA}, f = 100\text{MHz}$
Output capacitance	C_{ob}	—	15	—	pF	$V_{CB} = -10V, I_e = 0A, f = 1\text{MHz}$

(96-150-B218)

Power Transistor (15V, 1A)

2SD2444K

●Features

- 1) Low saturation voltage, $V_{CE(sat)} = 0.3V(\text{Max.})$ at $I_c / I_b = 0.4A / 20\text{mA}$.
- 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	$I_c = 1\text{mA}$
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	$I_c = 400\text{mA}, I_b = 20\text{mA}$
DC current transfer ratio	h_{FE}	180	—	390	—	$V_{CE}/I_c = 2V/50\text{mA}$
Transition frequency	f_T	—	200	—	MHz	$V_{CE} = 2V, I_c = -50\text{mA}, f = 100\text{MHz}$
Output capacitance	C_{ob}	—	15	—	pF	$V_{CB} = -10V, I_e = 0A, f = 1\text{MHz}$



(96-247-D218)