

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 h_{FE}

Type	2SB1590K
Package	SMT3
h_{FE}	Q
Marking	BK*
Code	T146
Basic ordering unit (pieces)	3000

* Denotes h_{FE}

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

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	$^\circ\text{C}$
Storage temperature	T_{stg}	−55~+150	$^\circ\text{C}$

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

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

(96-150-B218)

Power Transistor (15V, 1A)

2SD2444K

●Features

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

●Packaging specifications and h_{FE}

Type	2SD2444K
Package	SMT3
h_{FE}	R
Marking	BS*
Code	T146
Basic ordering unit (pieces)	3000

* Denotes h_{FE}

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

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	$^\circ\text{C}$
Storage temperature	T_{stg}	−55~+150	$^\circ\text{C}$

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

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

(96-247-D218)