

# Power Transistor (−60V, −5A)

## 2SB1292

### ●Features

- 1) Low saturation voltage, typically  $V_{CE(sat)} = -0.3V$  at  $I_C / I_B = -3A / -0.3A$ .
- 2) Excellent DC current gain characteristics.
- 3)  $P_C = 30W$  ( $T_C = 25^\circ C$ )
- 4) Wide SOA (safe operating area).
- 5) Complements the 2SD1832.

### ●Packaging specifications and hFE

Type	2SB1292
Package	TO-220FP
hFE	EF
Code	—
Basic ordering unit (pieces)	500

### ●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	$V_{CBO}$	−60	V
Collector-emitter voltage	$V_{CEO}$	−60	V
Emitter-base voltage	$V_{EBO}$	−5	V
Collector current	$I_C$	−5	A (DC)
		−10	A (Pulse) *
Collector power dissipation	$P_C$	2	W
		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 (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	$BV_{CBO}$	−60	—	—	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	$\mu A$	$V_{CB} = -60V$
Emitter cutoff current	$I_{EBO}$	—	—	−10	$\mu A$	$V_{EB} = -4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	−1.5	V	$I_C/I_B = -3A/-0.3A$ *
Base-emitter saturation voltage	$V_{BE(sat)}$	—	—	−1.5	V	$I_C/I_B = -3A/-0.3A$ *
DC current transfer ratio	hFE	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	$C_{ob}$	—	150	—	pF	$V_{CB} = -10V, I_E = 0A, f = 1MHz$

\* Measured using pulse current

(94L-316-B75)

# Power Transistor (60V, 5A)

## 2SD1832

### ●Features

- 1) Low saturation voltage, typically  $V_{CE(sat)} = 0.3V$  at  $I_C / I_B = 3A / 0.3A$ .
- 2) Excellent DC current gain characteristics.
- 3)  $P_C = 30W$  ( $T_C = 25^\circ C$ )
- 4) Wide SOA (safe operating area).
- 5) Complements the 2SB1292.

### ●Packaging specifications and hFE

Type	2SD1832
Package	TO-220FP
hFE	EF
Code	—
Basic ordering unit (pieces)	500

### ●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	$V_{CBO}$	80	V
Collector-emitter voltage	$V_{CEO}$	60	V
Emitter-base voltage	$V_{EBO}$	5	V
Collector current	$I_C$	5	A (DC)
		10	A (Pulse) *
Collector power dissipation	$P_C$	2	W
		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 (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	$\mu A$	$V_{CB} = 80V$
Emitter cutoff current	$I_{EBO}$	—	—	10	$\mu A$	$V_{EB} = 4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	1.0	V	$I_C/I_B = 3A/0.3A$ *
Base-emitter saturation voltage	$V_{BE(sat)}$	—	—	1.5	V	$I_C/I_B = 3A/0.3A$ *
DC current transfer ratio	hFE	100	—	320	—	$V_{CE}/I_C = 5V/1A$
Transition frequency	$f_T$	—	8	—	MHz	$V_{CE} = 5V, I_E = -50mA, f = 5MHz$ *
Output capacitance	$C_{ob}$	—	130	—	pF	$V_{CB} = 10V, I_E = 0A, f = 1MHz$

\* Measured using pulse current

(94L-872-D75)