

## Power Transistor (−50V, −3A)

## 2SB1566

## ●Features

- 1) Low saturation voltage, typically  $V_{CE(sat)} = -0.3V$  at  $I_C / I_B = -2A / -0.2A$ .
- 2) Wide SOA (safe operating area).
- 3) Complements the 2SD2395.

## ●Packaging specifications and hFE

Type	2SB1566
Package	TO-220FN
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	$V_{CEO}$	−50	V
Emitter-base voltage	$V_{EBO}$	−5	V
Collector current	$I_C$	−3	A (DC)
	$I_{CP}$	−4.5	A (Pulse) *
Collector power dissipation	$P_C$	2	W
		25	W (Tc=25°C)
Junction temperature	TJ	150	°C
Storage temperature	Tstg	−55~+150	°C

\* Single pulse, Pw=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	$BV_{CEO}$	−50	—	—	V	$I_C = -1mA$
Emitter-base breakdown voltage	$BV_{EBO}$	−5	—	—	V	$I_E = -50 \mu A$
Collector cutoff current	$I_{CBO}$	—	—	−1	$\mu A$	$V_{CB} = -60V$
Emitter cutoff current	$I_{EBO}$	—	—	−1	$\mu A$	$V_{EB} = -7V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	−1	V	$I_C/I_B = -2A/-0.2A$ *
Base-emitter saturation voltage	$V_{BE(sat)}$	—	—	−1.5	V	$I_C/I_B = -2A/-0.2A$ *
DC current transfer ratio	hFE	100	—	320	—	$V_{CE}/I_C = -3V/-0.5A$
Gain bandwidth product	f <sub>r</sub>	—	60	—	MHz	$V_{CE} = -5V, I_E = 0.5A, f = 5MHz$ *
Collector output capacitance	Cob	—	40	—	pF	$V_{CB} = -10V, I_E = 0A, f = 1MHz$

\* Measured using pulse current

(94L-459-B350)

## Power Transistor (50V, 3A)

## 2SD2395

## ●Features

- 1) Low saturation voltage, typically  $V_{CE(sat)} = 0.2V$  at  $I_C / I_B = 2A / 0.2A$ .
- 2) Wide SOA (safe operating area).
- 3) Complements the 2SB1566.

## ●Packaging specifications and hFE

Type	2SD2395
Package	TO-220FN
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	$V_{CEO}$	50	V
Emitter-base voltage	$V_{EBO}$	5	V
Collector current	$I_C$	3	A (DC)
	$I_{CP}$	4.5	A (Pulse) *
Collector power dissipation	$P_C$	2	W
		25	W (Tc=25°C)
Junction temperature	TJ	150	°C
Storage temperature	Tstg	−55~+150	°C

\* Single pulse, Pw=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	$BV_{CEO}$	50	—	—	V	$I_C = 1mA$
Emitter-base breakdown voltage	$BV_{EBO}$	5	—	—	V	$I_E = 50 \mu A$
Collector cutoff current	$I_{CBO}$	—	—	1	$\mu A$	$V_{CB} = 40V$
Emitter cutoff current	$I_{EBO}$	—	—	1	$\mu A$	$V_{EB} = 4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	1	V	$I_C/I_B = 2A/0.2A$ *
Base-emitter saturation voltage	$V_{BE(sat)}$	—	—	1.5	V	$I_C/I_B = 2A/0.2A$ *
DC current transfer ratio	hFE	100	—	320	—	$V_{CE}/I_C = 5V/0.5A$
Transition frequency	f <sub>r</sub>	—	100	—	MHz	$V_{CE} = 5V, I_E = -0.5A, f = 30MHz$ *
Output capacitance	Cob	—	35	—	pF	$V_{CB} = 10V, I_E = 0A, f = 1MHz$

\* Measured using pulse current

(94L-1101-D350)