

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	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}	-50	—	—	V	$I_C = -1mA$
Emitter-base breakdown voltage	BV_{EBO}	-5	—	—	V	$I_E = -50 \mu A$
Collector cutoff current	I_{CBO}	—	—	-1	μA	$V_{CB} = -60V$
Emitter cutoff current	I_{EBO}	—	—	-1	μA	$V_{EB} = -7V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	-1	V	$I_C/I_E = -2A/-0.2A$ *
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	fr	—	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	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}	50	—	—	V	$I_C = 1mA$
Emitter-base breakdown voltage	BV_{EBO}	5	—	—	V	$I_E = 50 \mu A$
Collector cutoff current	I_{CBO}	—	—	1	μA	$V_{CB} = 40V$
Emitter cutoff current	I_{EBO}	—	—	1	μA	$V_{EB} = 4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	1	V	$I_C/I_E = 2A/0.2A$ *
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	fr	—	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)