

Power Transistor (−60V, −4A)

2SB1335

●Features

- 1) Low $V_{CE(sat)}$. (Typ. −0.5V at $I_C/I_E = -3/-0.3A$)
- 2) Excellent DC current gain characteristics.
- 3) Wide SOA (safe operating area).
- 4) Complements the 2SD1855.

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CB0}	−80	V
Collector-emitter voltage	V_{CE0}	−60	V
Emitter-base voltage	V_{EB0}	−5	V
Collector current	I_C	−4	A (DC)
		−6	A (Pulse) *
Collector power dissipation	P_C	2	W
		30	W (Tc=25°C)
Junction temperature	Tj	150	°C
Storage temperature	Tstg	−55~150	°C

* Single pulse Pw=100ms

●Packaging specifications and hFE

Type	2SB1335
Package	TO-220FP
hFE	EF
Code	—
Basic ordering unit (pieces)	500

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CB0}	−80	—	—	V	$I_C = -50 \mu A$
Collector-emitter breakdown voltage	BV_{CE0}	−60	—	—	V	$I_C = -1mA$
Emitter-base breakdown voltage	BV_{EB0}	−5	—	—	V	$I_E = -50 \mu A$
Collector cutoff current	I_{CBO}	—	—	−10	μA	$V_{CB} = -80V$
Emitter cutoff current	I_{EBO}	—	—	−10	μA	$V_{EB} = -4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	−1.5	V	$I_C/I_E = -3A/-0.3A$ *
Base-emitter saturation voltage	$V_{BE(sat)}$	—	—	−1.5	V	$I_C/I_E = -3A/-0.3A$ *
DC current transfer ratio	hFE	100	—	320	—	$V_{CE}/I_C = -5V/-1A$
Transition frequency	f _r	—	12	—	MHz	$V_{CE} = -5V, I_E = 0.5A, f = 5MHz$ *
Output capacitance	C _{ob}	—	100	—	pF	$V_{CB} = -10V, I_E = 0A, f = 1MHz$

* Measured using pulse current

(94L-356-B14)

Power Transistor (60V, 4A)

2SD1855

●Features

- 1) Low $V_{CE(sat)}$. (Typ. 0.3V at $I_C/I_E = 3/0.3A$)
- 2) Excellent DC current gain characteristics.
- 3) Wide SOA (safe operating area).
- 4) Complements the 2SB1335.

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CB0}	80	V
Collector-emitter voltage	V_{CE0}	60	V
Emitter-base voltage	V_{EB0}	5	V
Collector current	I_C	4	A (DC)
		6	A (Pulse) *
Collector power dissipation	P_C	2	W
		30	W (Tc=25°C)
Junction temperature	Tj	150	°C
Storage temperature	Tstg	−55~150	°C

* Single pulse Pw=100ms

●Packaging specifications and hFE

Type	2SD1855
Package	TO-220FP
hFE	EF
Code	—
Basic ordering unit (pieces)	500

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CB0}	80	—	—	V	$I_C = 50 \mu A$
Collector-emitter breakdown voltage	BV_{CE0}	60	—	—	V	$I_C = 1mA$
Emitter-base breakdown voltage	BV_{EB0}	5	—	—	V	$I_E = 50 \mu A$
Collector cutoff current	I_{CBO}	—	—	10	μA	$V_{CB} = 60V$
Emitter cutoff current	I_{EBO}	—	—	10	μA	$V_{EB} = 4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	1	V	$I_C/I_E = 3A/0.3A$ *
Base-emitter saturation voltage	$V_{BE(sat)}$	—	—	1.5	V	$I_C/I_E = 3A/0.3A$ *
DC current transfer ratio	hFE	100	—	320	—	$V_{CE}/I_C = 5V/1A$
Transition frequency	f _r	—	8	—	MHz	$V_{CE} = 5V, I_C = -0.5A, f = 5MHz$ *
Output capacitance	C _{ob}	—	90	—	pF	$V_{CB} = 10V, I_E = 0A, f = 1MHz$

* Measured using pulse current

(94L-878-D14)

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