Power Transistor (−60V, −4A)

2SB1335

●**Features**

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

●**Absolute maximum ratings (Ta=25℃)**

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	−4	A (DC)
		−6	A (Pulse) ✻
Collector power dissipation	P_C	2	W
		30	W (Tc=25℃)
Junction temperature	Tj	150	℃
Storage temperature	Tstg	−55~+150	℃

✻ Single pulse Pw=100ms

●**Packaging specifications and h_{FE}**

Type	2SB1335
Package	TO-220FP
h_{FE}	EF
Code	—
Basic ordering unit (pieces)	500

●**Electrical characteristics (Ta=25℃)**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	−80	—	—	V	I_C=−50 μA
Collector-emitter breakdown voltage	BV_{CEO}	−60	—	—	V	I_C=−1mA
Emitter-base breakdown voltage	BV_{EBO}	−5	—	—	V	I_E=−50 μA
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_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	h_{FE}	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	Cob	—	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 saturation voltage, typically $V_{CE(sat)}$ =0.3V at I_C / I_B=3A / 0.3A.
2) Excellent DC current gain characteristics.
3) Wide SOA (safe operating area).
4) Complements the 2SB1355.

●**Absolute maximum ratings (Ta=25℃)**

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	4	A (DC)
		6	A (Pulse) ✻
Collector power dissipation	P_C	2	W
		30	W (Tc=25℃)
Junction temperature	Tj	150	℃
Storage temperature	Tstg	−55~+150	℃

✻ Single pulse Pw=100ms

●**Packaging specifications and h_{FE}**

Type	2SD1855
Package	TO-220FP
h_{FE}	EF
Code	—
Basic ordering unit (pieces)	500

●**Electrical characteristics (Ta=25℃)**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	80	—	—	V	I_C=50 μA
Collector-emitter breakdown voltage	BV_{CEO}	60	—	—	V	I_C=1mA
Emitter-base breakdown voltage	BV_{EBO}	5	—	—	V	I_E=50 μA
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_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	h_{FE}	100	—	320	—	V_{CE}/I_C=5V/1A
Transition frequency	f_T	—	8	—	MHz	V_{CE}=5V , I_E=−0.5A , f=5MHz ✻
Output capacitance	Cob	—	90	—	pF	V_{CB}=10V , I_E=0A , f=1MHz

✻ Measured using pulse current

(94L-878-D14)