Power Transistor (−80V, −7A)

2SB1290

●**Features**

1) Low $V_{CE(sat)}$. (Typ. −0.3V at I_C/I_B=−4/−0.4A)
2) Excellent DC current gain characteristics.
3) P_C=30W (T_C=25℃)
4) Wide SOA (safe operating area).
5) Complements the 2SD1833.

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

Type	2SB1290
Package	TO-220FP
h_{FE}	EF
Code	—
Basic ordering unit (pieces)	500

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

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	−80	V
Collector-emitter voltage	V_{CEO}	−80	V
Emitter-base voltage	V_{EBO}	−5	V
Collector current	I_C	−7	A (DC)
		−10	A (Pulse) *
Collector power dissipation	P_C	2	W
		30	W (T_C=25℃)
Junction temperature	Tj	150	℃
Storage temperature	Tstg	−55~150	℃

* Sigle pulse Pw=100ms

●**Electrical characteristics (T_a=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}	−80	—	—	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	V	I_C/I_B=−4A/−0.4A *
Base-emitter saturation voltage	$V_{BE(sat)}$	—	—	−1.5	V	I_C/I_B=−4A/−0.4A *
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	—	200	—	pF	V_{CB}=−10V, I_E=0A, f=1MHz

* Measured using pulse current

(96-630-B55)

Power Transistor (80V, 7A)

2SD1833

●**Features**

1) Low $V_{CE(sat)}$. (Typ. 0.3V at I_C/I_B=4/0.4A)
2) Excellent DC current gain characteristics.
3) P_C=30W (T_C=25℃)
4) Wide SOA (safe operating area).
5) Complements the 2SB1290.

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

Type	2SD1833
Package	TO-220FP
h_{FE}	DEF
Code	—
Basic ordering unit (pieces)	500

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

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	100	V
Collector-emitter voltage	V_{CEO}	80	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	7	A (DC)
		10	A (Pulse) *
Collector power dissipation	P_C	2	W
		30	W (T_C=25℃)
Junction temperature	Tj	150	℃
Storage temperature	Tstg	−55~150	℃

* Sigle pulse Pw=100ms

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	100	—	—	V	I_C=50 μA
Collector-emitter breakdown voltage	BV_{CEO}	80	—	—	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}=100V
Emitter cutoff current	I_{EBO}	—	—	10	μA	V_{EB}=4V
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	1	V	I_C/I_B=4A/0.4A *
Base-emitter saturation voltage	$V_{BE(sat)}$	—	—	1.5	V	I_C/I_B=4A/0.4A *
DC current transfer ratio	h_{FE}	60	—	320	—	V_{CE}=5V, I_C=1A *
Transition frequency	f_T	—	5	—	MHz	V_{CE}=5V, I_E=−0.5A, f=5MHz *
Output capacitance	Cob	—	150	—	pF	V_{CB}=10V, I_E=0A, f=1MHz

* Measured using pulse current

(96-741-D55)

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