

Power Transistor

2SB1181

■ Features

- High breakdown voltage and high current.
- Low $V_{CE(sat)}$.

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CB0}	-80	V
Collector-emitter voltage	V_{CEO}	-80	V
Emitter-base voltage	V_{EBO}	-5	V
Collector current	I_C	-1	A
Collector current pulse	I_{CP}	-2	A
Collector power dissipation	P_C	1	W
Collector power dissipation ($T_c=25^\circ\text{C}$)	P_C	10	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	BV_{CB0}	$I_C = -50\mu\text{A}$	-80			V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C = -1\text{mA}$	-80			V
Emitter-base breakdown voltage	BV_{EBO}	$I_E = -50\mu\text{A}$	-5			V
Collector cutoff current	I_{CBO}	$V_{CB} = -60\text{V}$			-1	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = -4\text{V}$			-1	μA
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -500\text{mA}$, $I_B = -50\text{mA}$			-0.4	V
DC current transfer ratio	h_{FE}	$V_{CE} = -3\text{V}$, $I_C = -0.1\text{A}$	82		390	
Transition frequency	f_T	$V_{CE} = -10\text{V}$, $I_E = 50\text{mA}$, $f = 100\text{MHz}$		100		MHz
Output capacitance	C_{ob}	$V_{CB} = -10\text{V}$, $I_E = 0\text{A}$, $f = 1\text{MHz}$		25		pF

■ h_{FE} Classification

Rank	P	Q	R
h_{FE}	82~180	120~270	180~390