

## 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	$V_{CBO}$	-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	$BV_{CBO}$	$I_C = -50\mu\text{A}$	-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	$\mu\text{A}$
Emitter cutoff current	$I_{EBO}$	$V_{EB} = -4\text{V}$			-1	$\mu\text{A}$
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