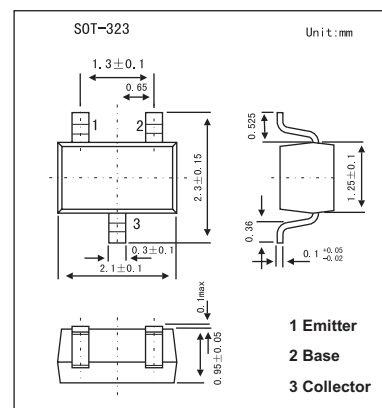


NPN Silicon Epitaxial Transistor

2SC4180

■ Features

- Small dimension
- High DC current gain

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

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CB0}	120	V
Collector-emitter voltage	V_{CE0}	120	V
Emitter-base voltage	V_{EB0}	5	V
Collector current	I_C	50	mA
Total power dissipation	P_T	150	mW
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	Testconditions	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 120\text{V}, I_E = 0$			0.05	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$			0.05	μA
DC current gain	h_{FE}	$V_{CE} = 6\text{V}, I_C = 1\text{mA}^*$	135	600	900	
		$V_{CE} = 6\text{V}, I_C = 0.1\text{mA}$	100	580		
Collector-emitter saturation voltage *	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 1\text{mA}$		0.07	0.3	V
Base-emitter voltage *	V_{BE}	$V_{CE} = 6\text{V}, I_C = 1\text{mA}$	0.55	0.59	0.65	V
Gain bandwidth product	f_T	$V_{CE} = 6\text{V}, I_E = -1\text{mA}$	50	110		MHz
Output capacitance	C_{ob}	$V_{CB} = 30\text{V}, I_E = 0, f = 1.0\text{MHz}$		1.6	2.5	pF

* Pulse test: $t_p \leq 350 \mu\text{s}$; $d \leq 0.02$.

■ h_{FE} Classification

Marking	D15	D16	D17	D18
h_{FE}	135~270	200~400	300~600	450~900