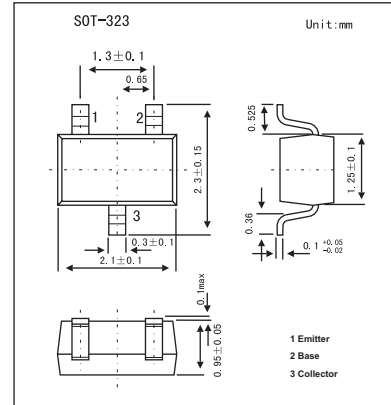


NPN Silicon Epitaxia

2SC4173

■ Features

- High gain bandwidth product: $f_T=200\text{MHz}$ min.

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

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CB0}	60	V
Collector-emitter voltage	V_{CEO}	40	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	500	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}	$V_{CB} = 40\text{V}, I_E = 0$			100	nA
Emitter cutoff current	I_{EBO}	$V_{EB} = 4\text{V}, I_C = 0$			100	nA
DC current gain *	h_{FE}	$V_{CE} = 1\text{V}, I_C = 150\text{mA}$	75	150	300	
Collector-emitter saturation voltage *	$V_{CE(sat)}$	$I_C = 500\text{mA}, I_B = 50\text{mA}$		0.25	0.75	V
Base-emitter saturation voltage *	$V_{BE(sat)}$	$I_C = 500\text{mA}, I_B = 50\text{mA}$		1.0	1.2	V
Gain bandwidth product	f_T	$V_{CE} = 10\text{V}, I_E = -20\text{mA}$	200	400		MHz
Output capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0, f = 1.0\text{MHz}$		3.5	8.0	pF
Turn-on time	t_{on}	$V_{CC} = 30\text{V},$		30		ns
Storage time	t_{stg}	$I_C = 150\text{mA},$		150		ns
Turn-off time	t_{off}	$I_{B1} = -I_{B2} = 15\text{mA}$		180		ns

*. $PW \leq 350\mu\text{s}, \text{duty cycle} \leq 2\%$

■ h_{FE} Classification

Marking	B12	B13	B14
h_{FE}	75~150	100~200	150~300