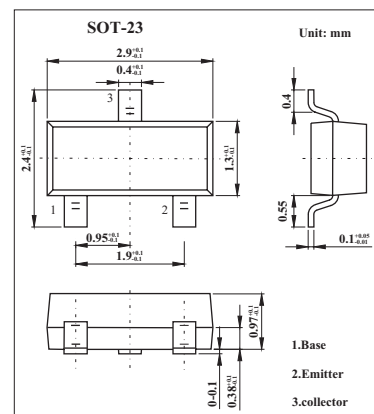


Silicon NPN Epitaxial

2SC3011

■ Features

- High Gain : $|S_{21e}|^2 = 12\text{dB(TYP.)}$
- Low Noise Figure: $NF = 2.3\text{dB(Typ.)}$ $f = 1\text{GHz}$
- High f_T : $f_T = 6.5\text{GHz}$

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

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CB0}	20	V
Collector-emitter voltage	V_{CE0}	7	V
Emitter-base voltage	V_{EB0}	3	V
Collector current	I_C	30	mA
Emitter current	I_E	10	mA
Collector power dissipation	P_C	150	mW
Junction temperature	T_j	125	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +125	$^\circ\text{C}$

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

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector cut-off current	I_{CBO}	$V_{CB} = 10\text{ V}, I_E = 0$			1.0	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 1.0\text{ V}, I_C = 0$			1.0	μA
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 0.5\text{ mA}, I_B = 0$	7			V
DC current gain	h_{FE}	$V_{CE} = 5\text{ V}, I_C = 10\text{ mA}$	30	120		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 10\text{ mA}, I_B = 1\text{ mA}$		0.1		V
Base-emitter saturation voltage	$V_{BE(sat)}$			0.87		V
Collector output capacitance	C_{ob}	$V_{CB} = 5\text{ V}, I_E = 0, f = 1\text{ MHz}$		0.7	0.9	pF
Reverse Transfer Capacitance	C_{re}			0.5		pF
Input Capacitance	C_{ib}	$V_{EB} = 0, I_C = 0, f = 1\text{ MHz}$		0.8		pF
Transition Frequency	f_T	$V_{CE} = 5\text{ V}, I_C = 10\text{ mA}$		6.5		GHz
Insertion Gain	$ S_{21e} ^2$	$V_{CE} = 5\text{ V}, I_C = 10\text{ mA}, f = 1\text{ GHz}$		12		dB
Noise Figure	NF	$V_{CE} = 5\text{ V}, I_C = 5\text{ mA}, f = 1\text{ GHz}$		2.3		dB

■ Marking

Marking	MA
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