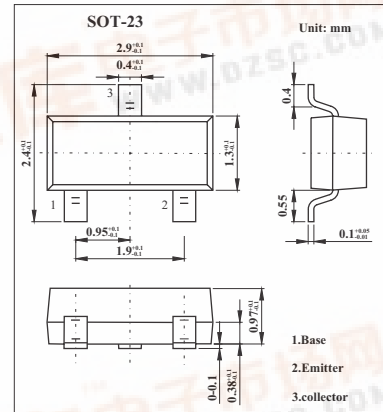


SMD Type Transistors

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	$V_{CBO}$	20	V
Collector-emitter voltage	$V_{CEO}$	7	V
Emitter-base voltage	$V_{EBO}$	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	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 1.0\text{ V}, I_C = 0$			1.0	$\mu\text{A}$
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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