isc Silicon NPN RF Transistor 2SC5090

DESCRIPTION

- High Gain Bandwidth Product
  f_T = 10 GHz TYP.
- High Gain, Low Noise Figure
  $|S_{21e}|^2$ = 13 dB TYP., NF = 1.1 dB TYP @ f = 1 GHz
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

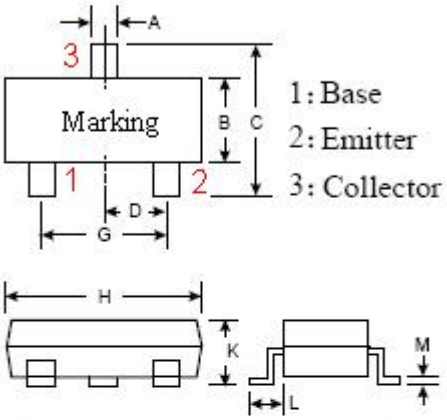
APPLICATIONS

- Designed for VHF~UHF band low noise amplifier applications.

ABSOLUTE MAXIMUM RATINGS(T_a=25℃)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	20	V
V_{CEO}	Collector-Emitter Voltage	10	V
V_{EBO}	Emitter-Base Voltage	1.5	V
I_C	Collector Current-Continuous	40	mA
I_B	Base Current-Continuous	20	mA
P_C	Collector Power Dissipation @T_C=25℃	0.1	W
T_J	Junction Temperature	125	℃
T_{stg}	Storage Temperature Range	-55~125	℃

SOT-323 package



DIM	mm MIN	MAX
A	0.30	0.40
B	1.15	1.35
C	2.00	2.40
D	0.65	
H	1.80	2.20
K	0.80	1.00
M	0.10	0.25

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ELECTRICAL CHARACTERISTICS

T_C=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
I_{CBO}	Collector Cutoff Current	V_{CB}= 10V; I_E= 0			1	μA
I_{EBO}	Emitter Cutoff Current	V_{EB}= 1V; I_C= 0			1	μA
h_{FE}	DC Current Gain	I_C= 20mA ; V_{CE}= 8V	50		160	
$\|S_{21e}\|^2$	Insertion Power Gain	I_C= 20mA;V_{CE}= 8V; f= 1GHz	10	13		dB
$\|S_{21e}\|^2$	Insertion Power Gain	I_C= 20mA;V_{CE}= 8V; f= 2GHz		7		dB
f_T	Current-Gain—Bandwidth Product	I_C= 20mA ; V_{CE}= 8V	7	10		GHz
C_{OB}	Output Capacitance	I_E= 0 ; V_{CB}= 10V;f= 1.0MHz		0.7		pF
C_{re}	Feedback Capacitance	I_E= 0 ; V_{CB}= 10V;f= 1.0MHz		0.5	0.95	pF
NF	Noise Figure	I_C= 5mA ; V_{CE}= 8V; f= 1GHz		1.1	2.5	dB
NF	Noise Figure	I_C= 5mA ; V_{CE}= 8V; f= 2GHz		1.7		dB

◆ **h_{FE} Classification**

R	O
50-100	80-160

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