

isc Silicon NPN RF Transistor
2SC5065
DESCRIPTION

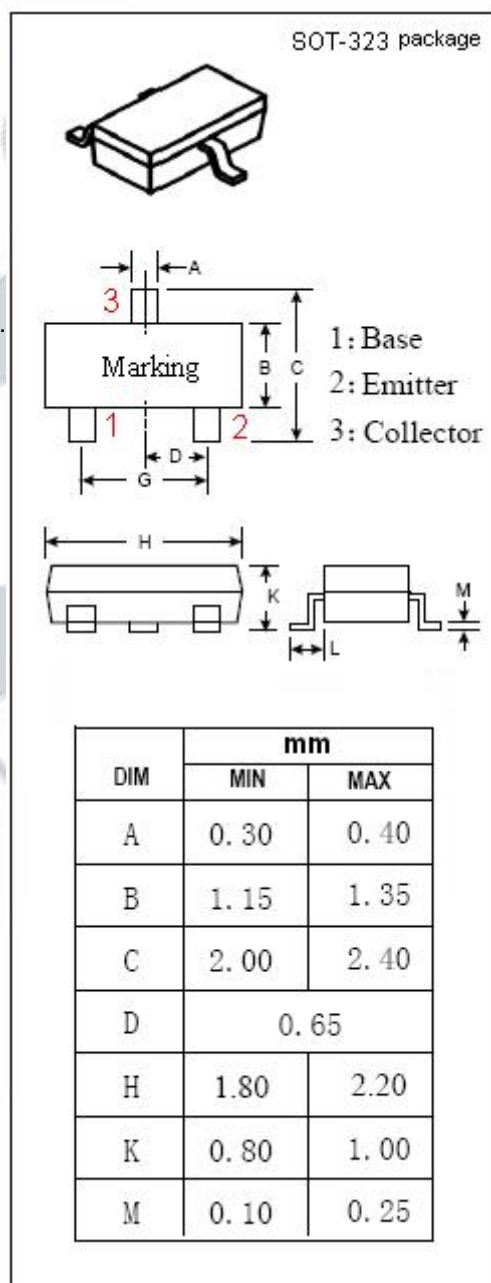
- Low Noise and High Gain
 $NF = 1.1 \text{ dB TYP.}, |S_{21e}|^2 = 12 \text{ dB TYP.}$
 $@V_{CE} = 5 \text{ V}, f = 1.0 \text{ GHz}$
- 100% avalanche tested
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

APPLICATIONS

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

ABSOLUTE MAXIMUM RATINGS($T_a=25^\circ\text{C}$)

SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-Base Voltage	20	V
V_{CEO}	Collector-Emitter Voltage	12	V
V_{EBO}	Emitter-Base Voltage	3.0	V
I_C	Collector Current-Continuous	30	mA
I_B	Base Current-Continuous	15	mA
P_C	Collector Power Dissipation @ $T_c=25^\circ\text{C}$	0.1	W
T_J	Junction Temperature	125	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~125	$^\circ\text{C}$



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ELECTRICAL CHARACTERISTICS

 $T_c=25^\circ\text{C}$ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
I_{CBO}	Collector Cutoff Current	$V_{CB}=10\text{V}; I_E=0$			1.0	μA
I_{EBO}	Emitter Cutoff Current	$V_{EB}=1\text{V}; I_C=0$			1.0	μA
h_{FE}	DC Current Gain	$I_C=10\text{mA}; V_{CE}=5\text{V}$	80		240	
f_T	Current-Gain—Bandwidth Product	$I_C=10\text{mA}; V_{CE}=5\text{V}$	5	7		GHz
C_{re}	Feed-Back Capacitance	$I_E=0; V_{CB}=5\text{V}; f=1.0\text{MHz}$		0.45	0.9	pF
C_{OB}	Output Capacitance	$I_E=0; V_{CB}=5\text{V}; f=1.0\text{MHz}$		0.7		pF
$ S_{21e} ^2$	Insertion Power Gain	$I_C=10\text{mA}; V_{CE}=5\text{V}; f=500\text{MHz}$		17		dB
$ S_{21e} ^2$	Insertion Power Gain	$I_C=10\text{mA}; V_{CE}=5\text{V}; f=1.0\text{GHz}$	8.5	12		dB
NF	Noise Figure	$I_C=3\text{mA}; V_{CE}=5\text{V}; f=500\text{MHz}$		1		dB
NF	Noise Figure	$I_C=3\text{mA}; V_{CE}=5\text{V}; f=1.0\text{GHz}$		1.1	2.0	dB

◆ h_{FE} Classification

O	Y
80-160	120-240