

Silicon NPN RF Transistor

MMBR911L

DESCRIPTION

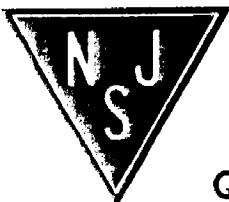
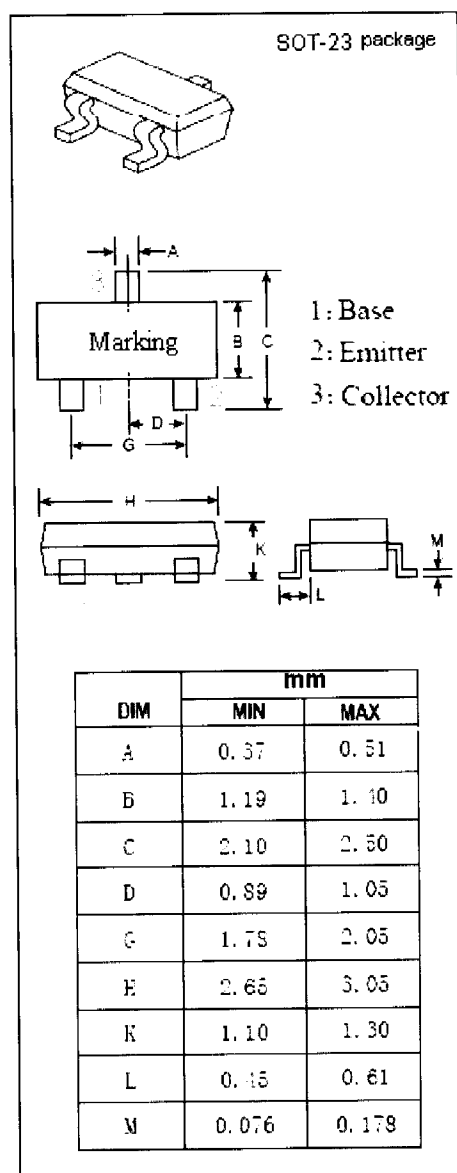
- High Gain
 $G_{NF} = 17 \text{ dB TYP. @ } I_C = 10 \text{ mA, } f = 500 \text{ MHz}$
- Low Noise Figure
 $NF = 1.7 \text{ dB TYP. @ } f = 500 \text{ MHz}$
- High Current-Gain Bandwidth Product
 $f_T = 6.0 \text{ GHz TYP. @ } I_C = 30 \text{ mA}$

APPLICATIONS

- Designed for low noise, wide dynamic range front-end amplifiers and low-noise VCO'S.

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	2	V
I_C	Collector Current-Continuous	60	mA
P_C	Collector Power Dissipation @ $T_C = 75^\circ\text{C}$	0.333	W
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature Range	-55~150	$^\circ\text{C}$



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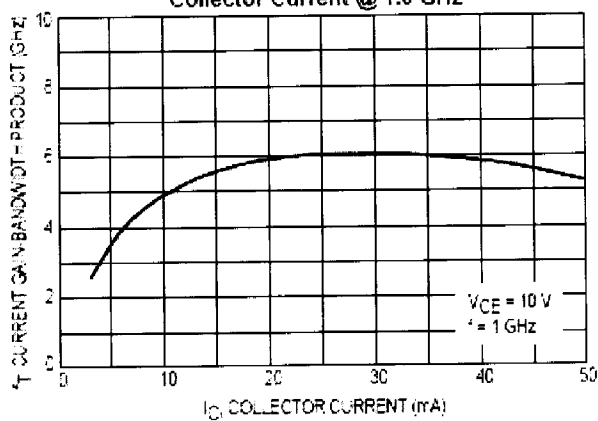
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ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C=1\text{mA}; I_B=0$	12			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C=0.1\text{mA}; I_E=0$	20			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E=0.1\text{mA}; I_C=0$	2			V
I_{CBO}	Collector Cutoff Current	$V_{CB}=15\text{V}; I_E=0$			0.05	μA
h_{FE}	DC Current Gain	$I_C=30\text{mA}; V_{CE}=10\text{V}$	30		200	
C_{OB}	Output Capacitance	$I_E=0; V_{CB}=10\text{V}; f=1\text{MHz}$			1.0	pF
f_T	Current-Gain—Bandwidth Product	$I_C=30\text{mA}; V_{CE}=10\text{V}; f=1\text{GHz}$		6.0		GHz
G_{NF}	Gain@ Noise Figure	$I_C=10\text{mA}; V_{CE}=10\text{V}; f=0.5\text{GHz}$		17		dB
G_{NF}	Gain@ Noise Figure	$I_C=10\text{mA}; V_{CE}=10\text{V}; f=1\text{GHz}$		11		dB
NF	Noise Figure	$I_C=10\text{mA}; V_{CE}=10\text{V}; f=0.5\text{GHz}$		2.0		dB
NF	Noise Figure	$I_C=10\text{mA}; V_{CE}=10\text{V}; f=1\text{GHz}$		2.9		dB

Current Gain—Bandwidth versus
Collector Current @ 1.0 GHz



Input Capacitance versus
Base-Emitter Voltage

