

**Silicon NPN RF Transistor**

**MMBR931L**

**DESCRIPTION**

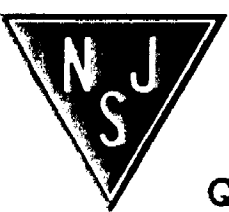
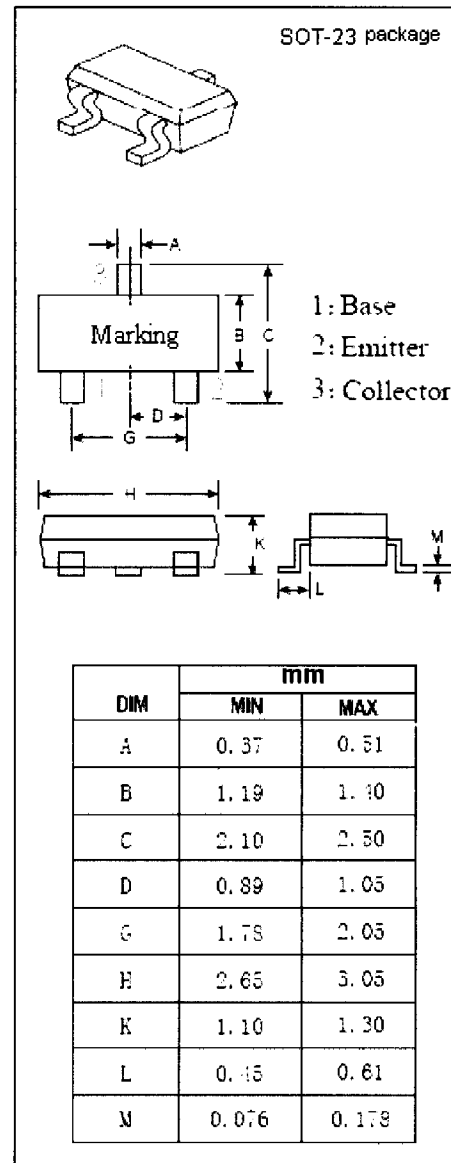
- Low Noise Figure  
 NF = 4.3 dB TYP. @ $V_{CE} = 1\text{ V}$ ,  $I_E = 0.25\text{ mA}$ ,  $f = 1\text{ GHz}$

**APPLICATIONS**

- Designed primarily for use in low-power amplifiers to 1.0 GHz, ideal for pagers and other battery operated systems where power consumption is critical.

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

SYMBOL	PARAMETER	VALUE	UNIT
$V_{CBO}$	Collector-Base Voltage	10	V
$V_{CEO}$	Collector-Emitter Voltage	5	V
$V_{EBO}$	Emitter-Base Voltage	2	V
$I_C$	Collector Current-Continuous	5	mA
$P_C$	Collector Power Dissipation @ $T_C = 75^\circ\text{C}$	0.15	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature Range	-55~150	$^\circ\text{C}$



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### ELECTRICAL CHARACTERISTICS

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

SYMBOL	PARAMETER	CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 0.1\text{mA}$ ; $I_B = 0$	5			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 0.01\text{mA}$ ; $I_E = 0$	10			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 0.1\text{mA}$ ; $I_C = 0$	2			V
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = 5\text{V}$ ; $I_E = 0$			50	nA
$h_{FE}$	DC Current Gain	$I_C = 0.25\text{mA}$ ; $V_{CE} = 1\text{V}$	50		150	
$C_{OB}$	Output Capacitance	$I_E = 0$ ; $V_{CB} = 1\text{V}$ ; $f = 1\text{MHz}$			0.5	pF
$G_{NF}$	Power Gain at Optimum Figure	$I_E = 0.25\text{mA}$ ; $V_{CE} = 1\text{V}$ ; $f = 1\text{GHz}$		10		dB
NF	Noise Figure	$I_E = 0.25\text{mA}$ ; $V_{CE} = 1\text{V}$ ; $f = 1\text{GHz}$		4.3		dB