

**Silicon NPN RF Transistor**

**MMBR920L**

**DESCRIPTION**

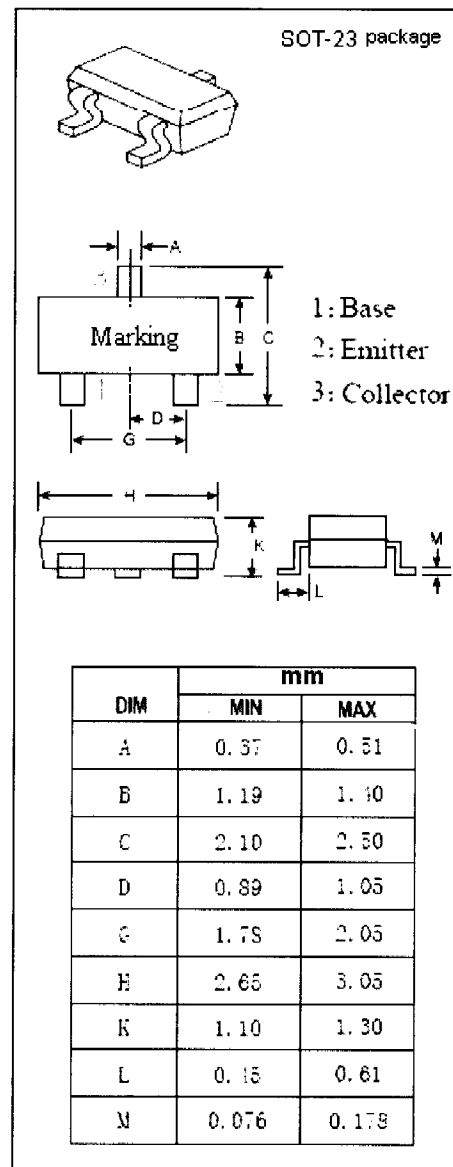
- Low Noise  
 NF= 2.4dB TYP. @ f= 500MHz
- High Gain  
 G<sub>pe</sub>= 15dB TYP. @ f= 500MHz

**APPLICATIONS**

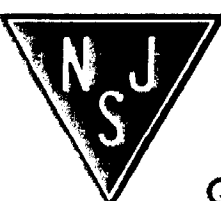
- Designed for thick and thin-film circuits using surface mount components and requiring low-noise , high-gain signal amplification at frequencies to 1 GHz.

**ABSOLUTE MAXIMUM RATINGS(T<sub>a</sub>=25°C)**

| SYMBOL           | PARAMETER   | VALUE   | UNIT |
|------------------|---|---------|------|
| V <sub>CBO</sub> | Collector-Base Voltage                                | 20      | V    |
| V <sub>CEO</sub> | Collector-Emitter Voltage                             | 15      | V    |
| V <sub>EBO</sub> | Emitter-Base Voltage                                  | 3       | V    |
| I <sub>C</sub>   | Collector Current-Continuous                          | 35      | mA   |
| P <sub>C</sub>   | Collector Power Dissipation<br>@T <sub>C</sub> = 25°C | 0.35    | W    |
| T <sub>J</sub>   | Junction Temperature                                  | 150     | °C   |
| T <sub>stg</sub> | Storage Temperature Range                             | -55~150 | °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 | $I_C=1\text{mA}; I_B=0$                               | 15  |      |     | 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            | $V_{CB}=10\text{V}; I_E=0$                            |     |      | 50  | nA   |
| $h_{FE}$      | DC Current Gain                     | $I_C=14\text{mA}; V_{CE}=10\text{V}$                  | 25  |      | 250 |      |
| $C_{OB}$      | Output Capacitance                  | $I_E=0; V_{CB}=10\text{V}; f=1\text{MHz}$             |     |      | 1.0 | pF   |
| $f_T$         | Current-Gain—Bandwidth Product      | $I_C=14\text{mA}; V_{CE}=10\text{V}; f=0.5\text{GHz}$ |     | 4.5  |     | GHz  |
| NF            | Noise Figure                        | $I_C=2\text{mA}; V_{CE}=10\text{V}; f=0.5\text{GHz}$  |     | 2.4  |     | dB   |
| NF            | Noise Figure                        | $I_C=2\text{mA}; V_{CE}=10\text{V}; f=1\text{GHz}$    |     | 3.0  |     | dB   |
| $G_{pe}$      | Common-Emitter Amplifier Power Gain | $I_C=2\text{mA}; V_{CE}=10\text{V}; f=0.5\text{GHz}$  |     | 15   |     | dB   |
| $G_{pe}$      | Common-Emitter Amplifier Power Gain | $I_C=2\text{mA}; V_{CE}=10\text{V}; f=1\text{GHz}$    |     | 10   |     | dB   |