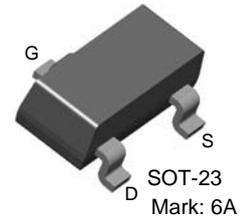


MMBF4416

N-Channel RF Amplifiers

- This device is designed for RF amplifiers.
- Sourced from process 50.



Absolute Maximum Ratings T_A=25°C unless otherwise noted

| Symbol | Parameter | Value | Units |
|-----------------------------------|--|-------------|-------|
| V _{DG} | Drain-Gate Voltage | 30 | V |
| V _{GS} | Gate-Source Voltage | -30 | V |
| I _{GF} | Forward Gate Current | 10 | mA |
| T _J , T _{STG} | Junction and Storage Temperature Range | -55 to +150 | °C |

Electrical Characteristics T_A=25°C unless otherwise noted

| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Units |
|--------|-----------|----------------|------|------|------|-------|
|--------|-----------|----------------|------|------|------|-------|

Off Characteristics

| | | | | | | |
|----------------------|-------------------------------|--|------|--|------------|----------|
| V _{(BR)GSS} | Gate-Source Breakdown Voltage | V _{DS} = 0, I _G = 1μA | -30 | | | V |
| I _{GSS} | Gate Reverse Current | V _{GS} = -20V, V _{DS} = 0 V _{GS} = -20V, V _{DS} = 0, T _A = 150°C | | | -1 -200 | nA nA |
| V _{GS(off)} | Gate Source Cut-off Voltage | V _{DS} = 15V, I _D = 1nA | -2.5 | | -6 | V |
| V _{GS} | Gate Source Voltage | V _{DS} = 15V, I _D = 0.5mA | -1 | | -5.5 | V |

On Characteristics

| | | | | | | |
|--------------------|---------------------------------|--|---|--|----|----|
| I _{DSS} | Zero-Gate Voltage Drain Current | V _{GS} = 15V, V _{GS} = 0 | 5 | | 15 | mA |
| V _{GS(f)} | Gate-Source Forward Voltage | V _{DS} = 0, I _G = 1mA | | | 1 | V |

Small Signal Characteristics

| | | | | | | |
|------------------|------------------------------|--|------|--|------|-------|
| Y _{fs} | Forward Transfer Admittance | V _{DS} = 15V, V _{GS} = 0, f = 1KHz | 4500 | | 7500 | μmhos |
| y _{os} | Output Admittance | V _{DS} = 15V, V _{GS} = 0, f = 1KHz | | | 50 | μmhos |
| C _{iss} | Input Capacitance | V _{DS} = 15V, V _{GS} = 0, f = 1MHz | | | 4 | pF |
| C _{rss} | Reverse Transfer Capacitance | V _{DS} = 15V, V _{GS} = 0, f = 1MHz | | | 0.9 | pF |
| C _{oss} | Output Capacitance | V _{DS} = 15V, V _{GS} = 0, f = 1MHz | | | 2 | pF |

Functional Characteristics

| | | | | | | |
|-----------------|--------------------------|--|----|--|---|----|
| NF | Noise Figure | V _{DS} = 15V, I _D = 5mA, R _g = 100Ω, f = 100MHz | | | 2 | dB |
| G _{ps} | Common Source Power Gain | V _{DS} = 15V, I _D = 5mA, R _g = 100Ω, f = 100MHz | 18 | | | dB |

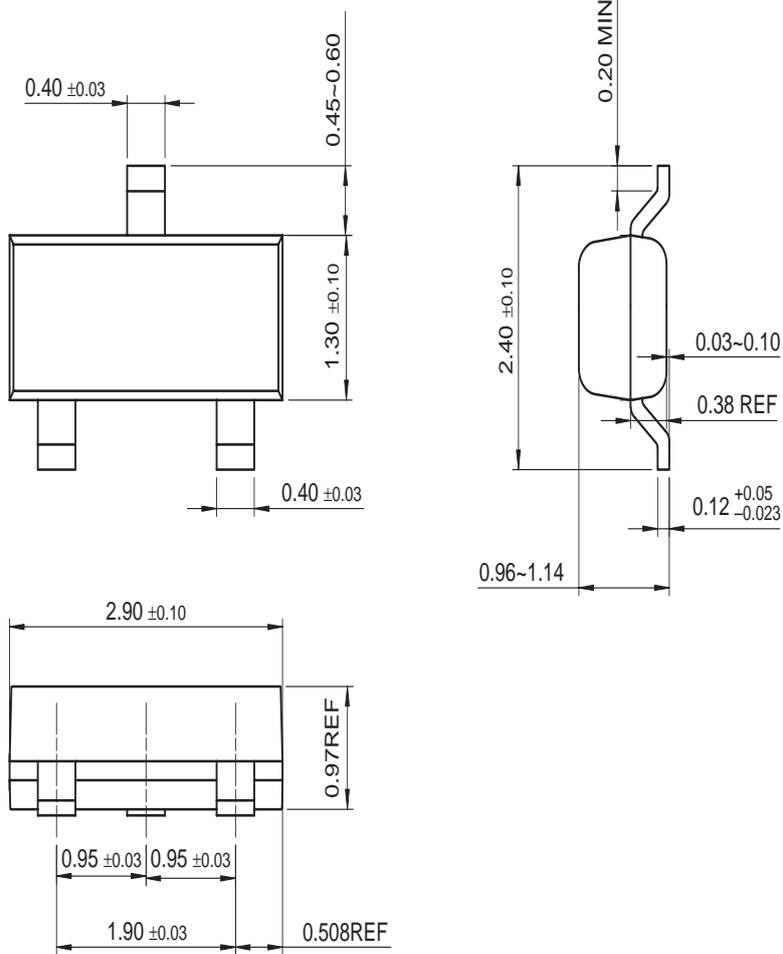
Thermal Characteristics $T_A=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Max. | Units |
|-----------------|---|------|---------------------------|
| P_D | Total Device Dissipation | 225 | mW |
| | Derate above 25°C | 1.8 | mW/ $^\circ\text{C}$ |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 556 | $^\circ\text{C}/\text{W}$ |

* Device mounted on FR-4 PCB $1.6'' \times 1.6'' \times 0.06''$.

Mechanical Dimensions

SOT-23

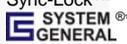


Dimensions in Millimeters



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