

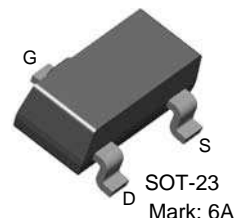


April 2009

MMBF4416

N-Channel RF Amplifiers

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



Absolute Maximum Ratings $T_A=25^\circ\text{C}$ 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	$^\circ\text{C}$

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
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Off Characteristics

$V_{(BR)GSS}$	Gate-Source Breakdown Voltage	$V_{DS} = 0, I_G = 1\mu\text{A}$	-30			V
I_{GSS}	Gate Reverse Current	$V_{GS} = -20\text{V}, V_{DS} = 0$ $V_{GS} = -20\text{V}, V_{DS} = 0, T_A = 150^\circ\text{C}$			-1 -200	nA nA
$V_{GS(off)}$	Gate Source Cut-off Voltage	$V_{DS} = 15\text{V}, I_D = 1\text{nA}$	-2.5		-6	V
V_{GS}	Gate Source Voltage	$V_{DS} = 15\text{V}, I_D = 0.5\text{mA}$	-1		-5.5	V

On Characteristics

I_{DSS}	Zero-Gate Voltage Drain Current	$V_{GS} = 15\text{V}, V_{GS} = 0$	5		15	mA
$V_{GS(f)}$	Gate-Source Forward Voltage	$V_{DS} = 0, I_G = 1\text{mA}$			1	V

Small Signal Characteristics

$ Y_{fs} $	Forward Transfer Admittance	$V_{DS} = 15\text{V}, V_{GS} = 0, f = 1\text{KHz}$	4500		7500	μmhos
$ Y_{os} $	Output Admittance	$V_{DS} = 15\text{V}, V_{GS} = 0, f = 1\text{KHz}$			50	μmhos
C_{iss}	Input Capacitance	$V_{DS} = 15\text{V}, V_{GS} = 0, f = 1\text{MHz}$			4	pF
C_{rss}	Reverse Transfer Capacitance	$V_{DS} = 15\text{V}, V_{GS} = 0, f = 1\text{MHz}$			0.9	pF
C_{oss}	Output Capacitance	$V_{DS} = 15\text{V}, V_{GS} = 0, f = 1\text{MHz}$			2	pF

Functional Characteristics

NF	Noise Figure	$V_{DS} = 15\text{V}, I_D = 5\text{mA}, R_g = 100\Omega, f = 100\text{MHz}$			2	dB
G_{ps}	Common Source Power Gain	$V_{DS} = 15\text{V}, I_D = 5\text{mA}, R_g = 100\Omega, f = 100\text{MHz}$	18			dB

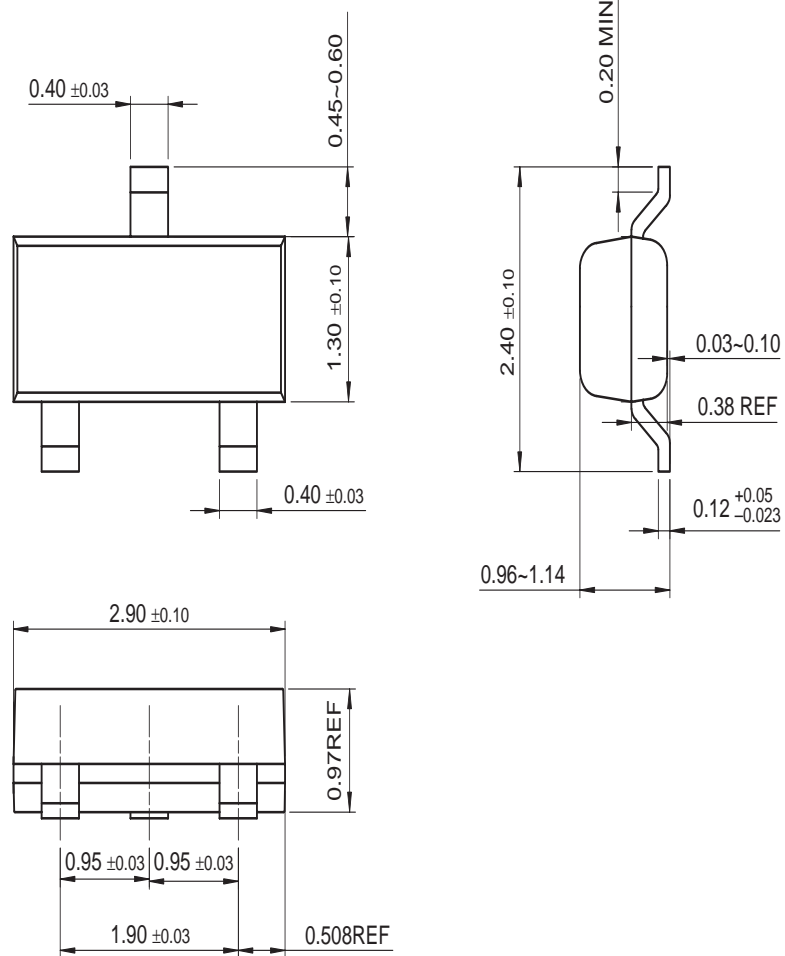
Thermal Characteristics $T_A=25^{\circ}\text{C}$ unless otherwise noted

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

* 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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