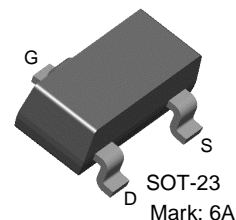


# MMBF4416

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 ~ 150	$^\circ\text{C}$

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

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
<b>Off Characteristics</b>						
$V_{(BR)GSS}$	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
<b>On Characteristics</b>						
$I_{DSS}$	Zero-Gate Voltage Drain Current	$V_{GS} = 15\text{V}, V_{GS} = 0$	5		15	$\mu\text{A}$
$V_{GS(f)}$	Gate-Source Forward Voltage	$V_{DS} = 0, I_G = 1\text{mA}$			1	V
<b>Small Signal Characteristics</b>						
$ Y_{fs} $	Forward Transfer Admittance	$V_{DS} = 15\text{V}, V_{GS} = 0, f = 1\text{KHz}$	4500		7500	$\mu\text{mhos}$
$ Y_{os} $	Output Admittance	$V_{DS} = 15\text{V}, V_{GS} = 0, f = 1\text{KHz}$			50	$\mu\text{mhos}$
$C_{iss}$	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
<b>Functional Characteristics</b>						
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 $25^\circ\text{C}$	225 1.8	mW mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	556	$^\circ\text{C}/\text{W}$

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

# Package Dimensions

## SOT-23



Dimensions in Millimeters

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