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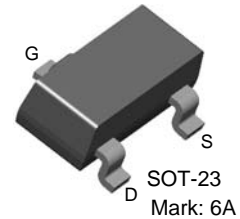
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# MMBF4416

## N-Channel RF Amplifiers

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



### Absolute Maximum Ratings T<sub>A</sub>=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>DG</sub>	Drain-Gate Voltage	30	V
V <sub>GS</sub>	Gate-Source Voltage	-30	V
I <sub>GF</sub>	Forward Gate Current	10	mA
T <sub>J</sub> , T <sub>STG</sub>	Junction and Storage Temperature Range	-55 to +150	°C

### Electrical Characteristics T<sub>A</sub>=25°C unless otherwise noted

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

V <sub>(BR)GSS</sub>	Gate-Source Breakdown Voltage	V <sub>DS</sub> = 0, I <sub>G</sub> = 1μA	-30			V
I <sub>GSS</sub>	Gate Reverse Current	V <sub>GS</sub> = -20V, V <sub>DS</sub> = 0 V <sub>GS</sub> = -20V, V <sub>DS</sub> = 0, T <sub>A</sub> = 150°C			-1 -200	nA nA
V <sub>GS(off)</sub>	Gate Source Cut-off Voltage	V <sub>DS</sub> = 15V, I <sub>D</sub> = 1nA	-2.5		-6	V
V <sub>GS</sub>	Gate Source Voltage	V <sub>DS</sub> = 15V, I <sub>D</sub> = 0.5mA	-1		-5.5	V

#### On Characteristics

I <sub>DSS</sub>	Zero-Gate Voltage Drain Current	V <sub>GS</sub> = 15V, V <sub>GS</sub> = 0	5		15	mA
V <sub>GS(f)</sub>	Gate-Source Forward Voltage	V <sub>DS</sub> = 0, I <sub>G</sub> = 1mA			1	V

#### Small Signal Characteristics

Y <sub>fs</sub>	Forward Transfer Admittance	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 0, f = 1KHz	4500		7500	μmhos
y <sub>os</sub>	Output Admittance	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 0, f = 1KHz			50	μmhos
C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 0, f = 1MHz			4	pF
C <sub>rss</sub>	Reverse Transfer Capacitance	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 0, f = 1MHz			0.9	pF
C <sub>oss</sub>	Output Capacitance	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 0, f = 1MHz			2	pF

#### Functional Characteristics

NF	Noise Figure	V <sub>DS</sub> = 15V, I <sub>D</sub> = 5mA, R <sub>g</sub> = 100Ω, f = 100MHz			2	dB
G <sub>ps</sub>	Common Source Power Gain	V <sub>DS</sub> = 15V, I <sub>D</sub> = 5mA, R <sub>g</sub> = 100Ω, f = 100MHz	18			dB

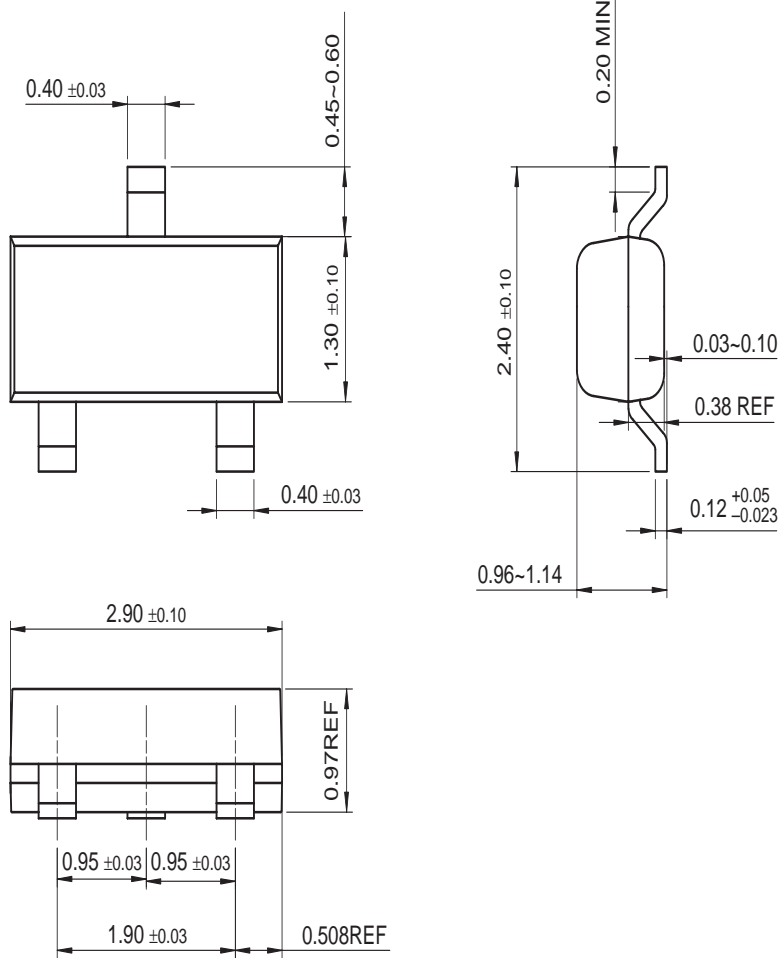
**Thermal Characteristics**  $T_A=25^\circ\text{C}$  unless otherwise noted

Symbol	Parameter	Max.	Units
$P_D$	Total Device Dissipation	225	mW
	Derate above $25^\circ\text{C}$	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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No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
Obsolete	Not In Production	Datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only.

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