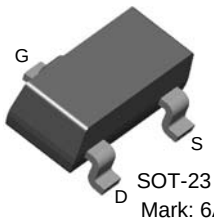
FAIRCHILD SEMICONDUCTOR®

April 2009

MMBF4416
N-Channel RF Amplifiers

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



SOT-23
Mark: 6A

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

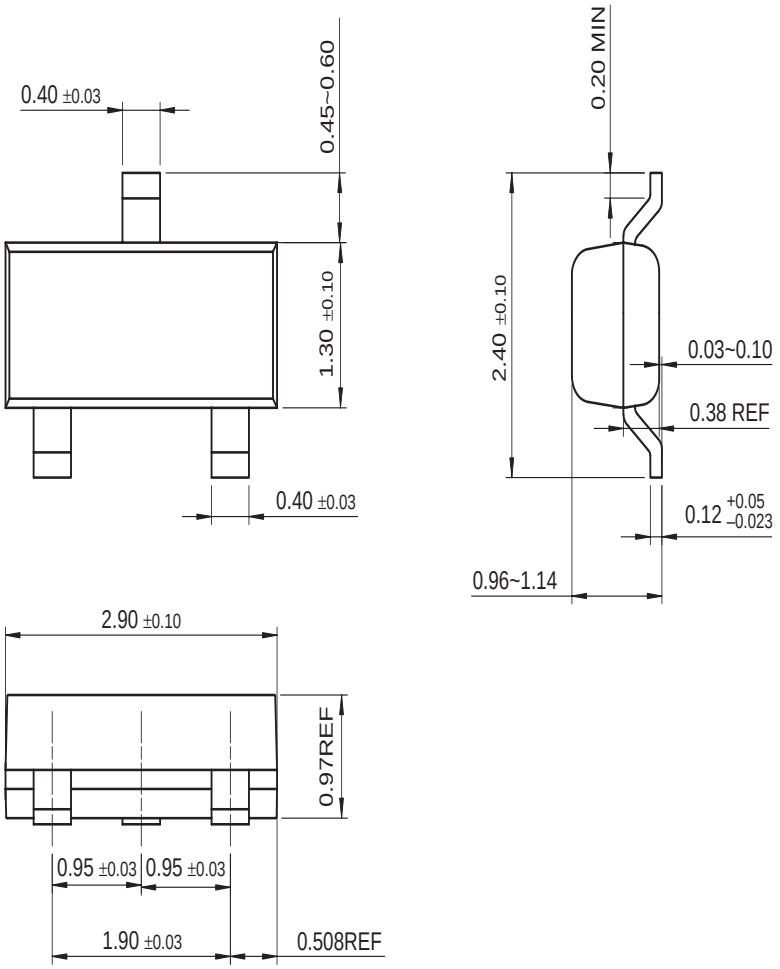
Thermal Characteristics T_A=25°C unless otherwise noted

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

* Device mounted on FR-4 PCB 1.6” × 1.6” × 0.06”.

Mechanical Dimensions

SOT-23



Dimensions in Millimeters

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