

GaAs MMIC XM2400LB-PM0601**muRata****LNA / Drv. Amp. MMIC for 2.4GHz Wireless Communications****■ Applications**

Low noise amplifier / Driver amplifier for 2.4GHz WLAN / Bluetooth™ and other ISM2400 applications.

■ Features

1 Positive Supply Voltage +3V

Internal Input and Output Matching Circuit

Low Power Consumption 3V/4.5mA

High Gain G=15.5dB

Low Noise Figure F=1.9dB

High 1dB Compression Point P_{1dB}=4.0dBm

Small Plastic Package 6 pin Mini Mold Package (SOT-23-6)

**■ Absolute Maximum Ratings**

Symbol	Parameter	Conditions	Rating	Unit
VDD	Supply Voltage	Ta = 25°C	5	V
Pin	RF Input Power	Ta = 25°C	-5	dBm
Top	Operating Temperature	-	-20 ~ 85	°C
Tstg	Storage Temperature	-	-55 ~ 150	°C

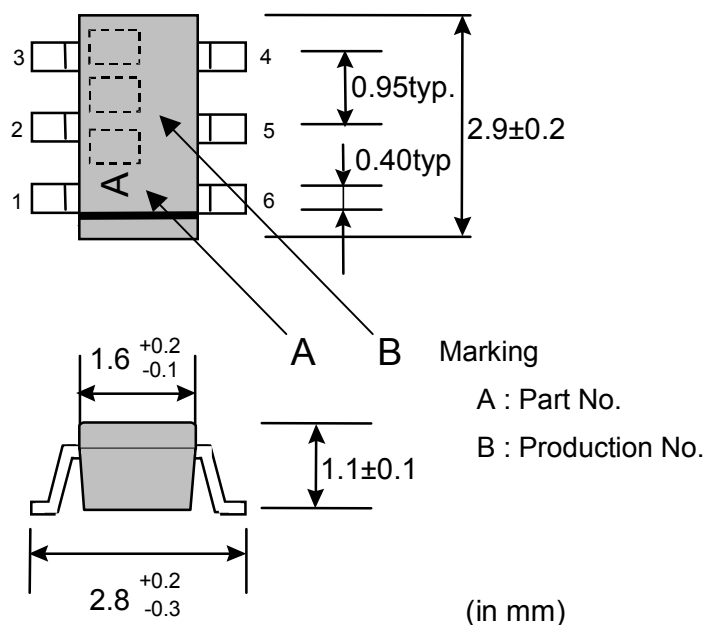
■ Electrical Specifications

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
f ₀	Operation Frequency	-	2.4	-	2.5	GHz
VDD	Supply Voltage (Drain)	-	-	3.0	-	V
IDD	Current Consumption	-	-	4.5	-	mA
G	Small Signal Gain	VDD = 3.0V Z ₀ = 50Ω P _{in} = -30dBm	-	15.5	-	dB
F	Noise Figure		-	1.9	-	dB
VSWR _{in}	Input VSWR		-	1.8	-	-
VSWR _{out}	Output VSWR		-	1.8	-	-
IP ₃	3rd Order Intercept Point	-	-	14.0	-	dBm
P _{1dB}	1dB Compression Point	-	-	4.0	-	dBm

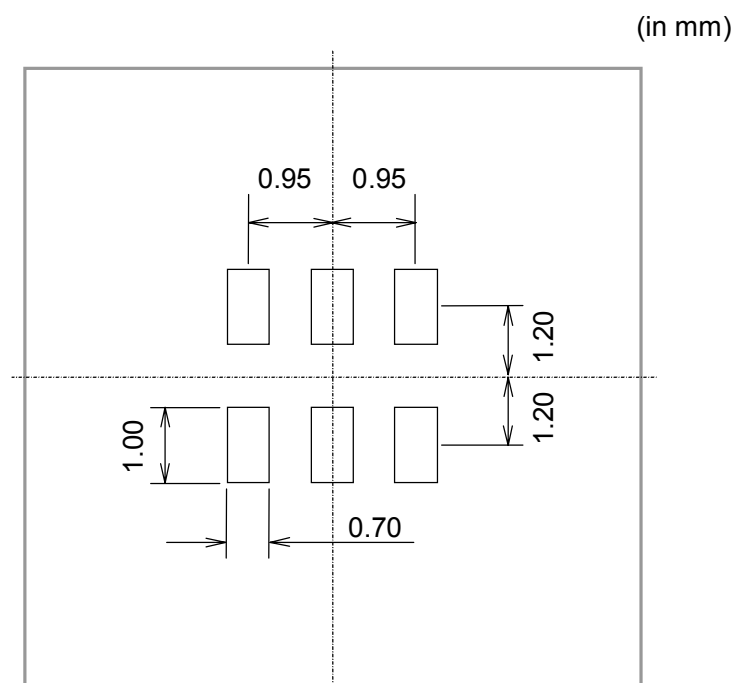
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* Specifications are preliminary and information only.

They are subject to change without advanced notice.

GaAs MMIC XM2400LB-PM0601**muRata****LNA / Drv. Amp. MMIC for 2.4GHz Wireless Communications****■ Package Outline and Pin Connections**

Pin No.	Function
1	RF Input
2	Not Connected
3	VDD
4	RF Output
5	GND
6	GND

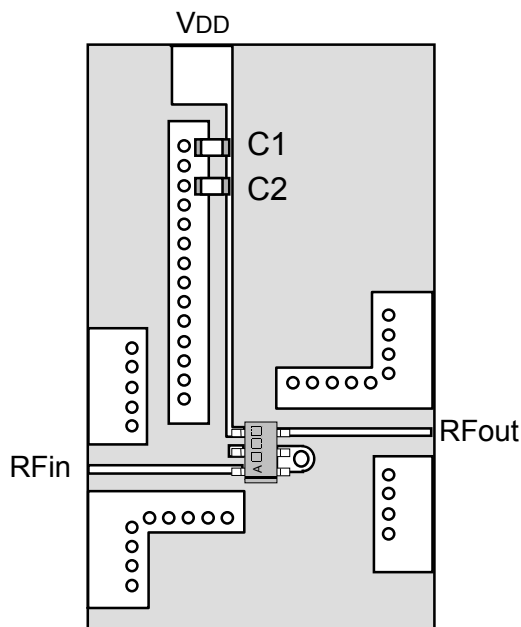
■ Land Pattern

All tolerances would be 0.03.

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GaAs MMIC XM2400LB-PM0601***Murata*****LNA / Drv. Amp. MMIC for 2.4GHz Wireless Communications****■ Evaluation Board 1 (for High Gain)**

Part No.	Value
C1	GRM39 20pF (Murata)
C2	GRM39 200pF (Murata)

Substrate**Glass-epoxy****Thickness = 0.2mm****Metal Thickness = 18μm** **$\epsilon_r = 4.2$**

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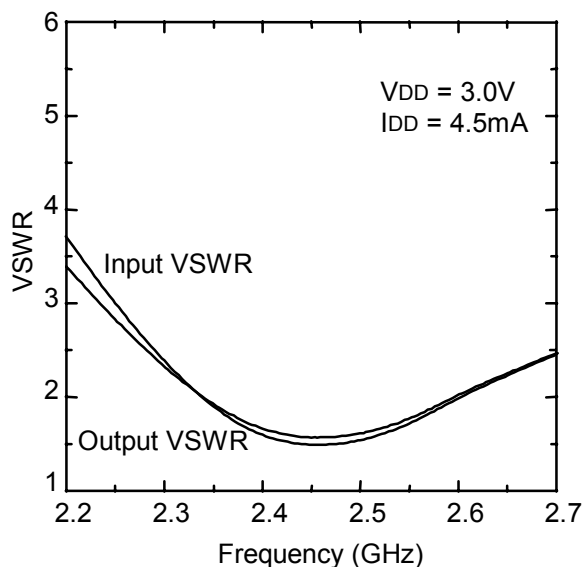
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GaAs MMIC XM2400LB-PM0601

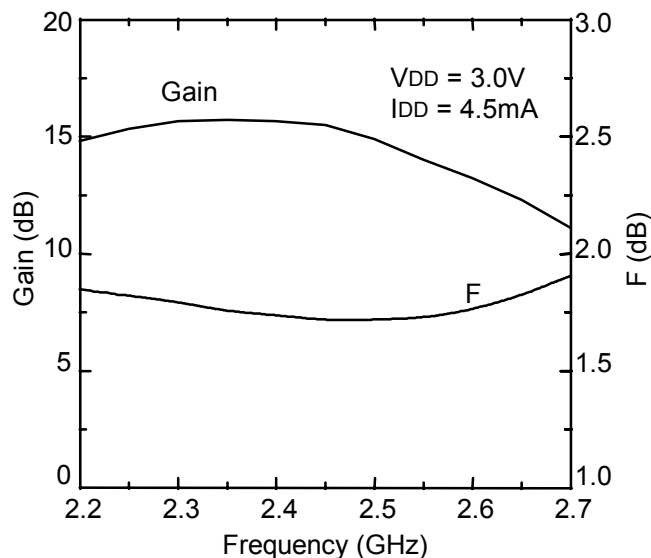
Murata

LNA / Drv. Amp. MMIC for 2.4GHz Wireless Communications

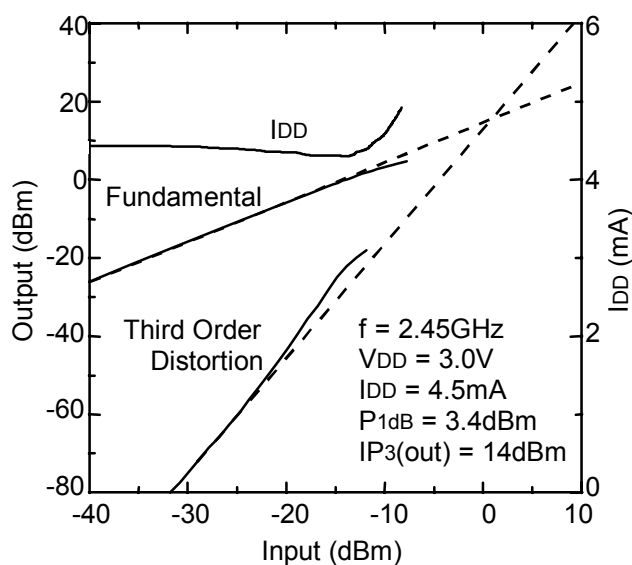
Typical Performance



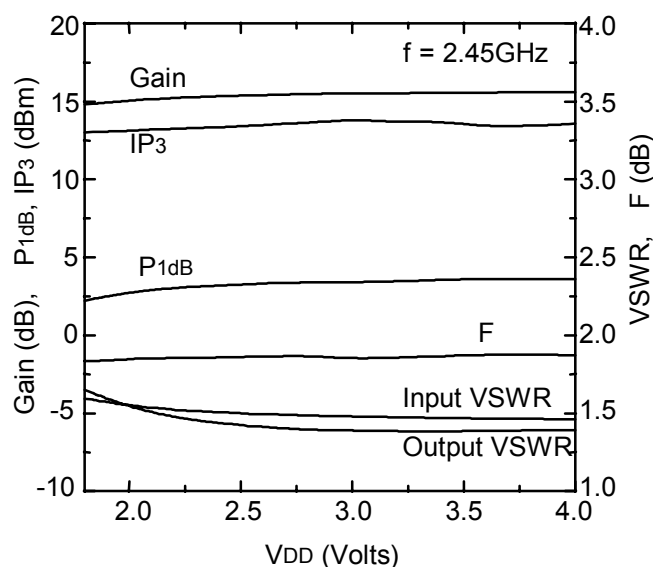
Input and Output VSWR v.s. Frequency



Gain and F v.s. Frequency



Output Power v.s. Input Power

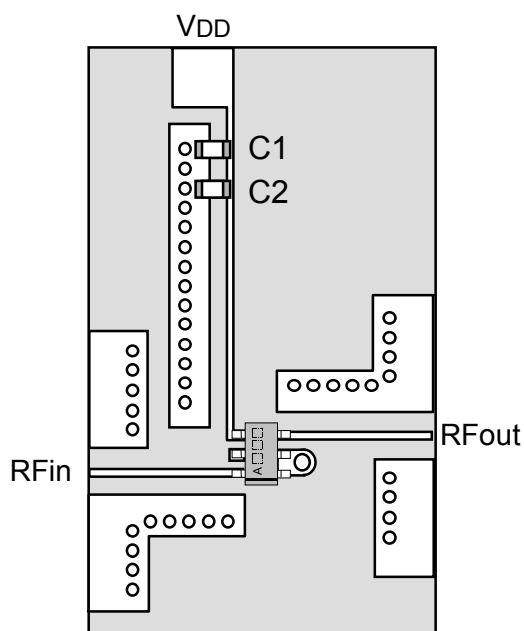


Gain, P1dB, IP3, VSWR and F v.s. VDD

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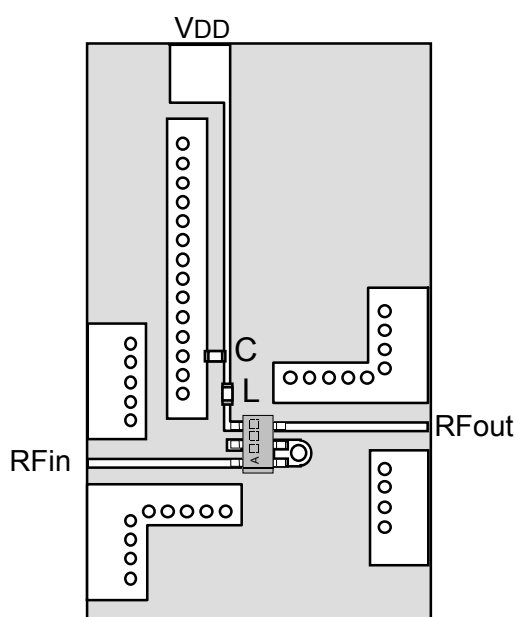
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GaAs MMIC XM2400LB-PM0601**muRata****LNA / Drv. Amp. MMIC for 2.4GHz Wireless Communications****■ Evaluation Board 2 (for Better VSWR)**

Symbol	Parameter	Conditions	Typ.	Unit
IDD	Current Consumption	-	4.5	mA
G	Small Signal Gain	V _{DD} = 3.0V Z ₀ = 50Ω P _{in} = -30dBm	15.0	dB
F	Noise Figure		1.9	dB
VSWR _{in}	Input VSWR		1.6	-
VSWR _{out}	Output VSWR		1.6	-
IP ₃	3rd Order Intercept Point	-	14.0	dBm
P _{1dB}	1dB Compression Point	-	4.0	dBm

Part No.	Value
C1	GRM39 20pF (Murata)
C2	GRM39 470pF (Murata)

Substrate**Glass-epoxy****Thickness = 0.2mm****Metal Thickness = 18μm****ε_r = 4.2****■ Evaluation Board 3 (for Smaller Size)**

Symbol	Parameter	Conditions	Typ.	Unit
IDD	Current Consumption	-	4.5	mA
G	Small Signal Gain	V _{DD} = 3.0V Z ₀ = 50Ω P _{in} = -30dBm	15.7	dB
F	Noise Figure		1.9	dB
VSWR _{in}	Input VSWR		1.8	-
VSWR _{out}	Output VSWR		1.9	-
IP ₃	3rd Order Intercept Point	-	14.0	dBm
P _{1dB}	1dB Compression Point	-	4.0	dBm

Part No.	Value
C	GRM36 5.6pF (Murata)
L	LQP10 6.8nH (Murata)

Substrate**Glass-epoxy****Thickness = 0.2mm****Metal Thickness = 18μm****ε_r = 4.2**

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