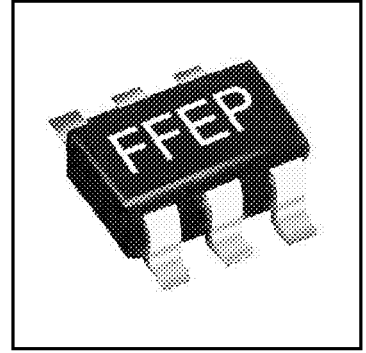


FMM5202ML

Single Oscillator GaAs MMIC

FEATURES

- Integrated Monolithic Oscillator
- Single Frequency Operation
- Ultra-Low Phase Noise: -90dBc/Hz (Typ.)
- Small Size 6-Pin **Plastic** Package for SMT Applications



DESCRIPTION

The FMM5202ML is a GaAs single frequency oscillator MMIC with low phase noise for use in X-Band DBS applications. It is designed to operate with the FMM5107VD downconverter MMIC.

Fujitsu's stringent Quality Assurance Program assures the highest reliability and consistent performance.

ABSOLUTE MAXIMUM RATINGS (Ambient Temperature Ta=25°C)

Item	Symbol	Rating	Unit
DC Bias Voltage	V _{DD}	8	V
Storage Temperature	T _{stg}	-55 to +125	°C
Operating Temperature	T _{op}	-40 to +85	°C

ELECTRICAL CHARACTERISTICS (Ambient Temperature Ta=25°C)

Item	Symbol	Conditions	Limits			Unit
			Min.	Typ.	Max.	
Oscillation Frequency	f _{osc}	V _{DD} = 4V V _{LO} = 0V (GND)	9.75	-	11.5	GHz
Oscillation Frequency (1)	f _{osc}		-	11.3	-	GHz
Oscillation Power (1)	P _{osc}		-	4.5	-	dBm
Operating Current (1)	I _{DD}		17	25.5	37	mA
Phase Noise (2)	φ		-	-90	-	dBc/Hz

CASE STYLE: ML

Notes:

- (1) Measurements are performed in a Fujitsu test circuit as shown in Figure 1.
- (2) The phase noise parameters are guaranteed by design, but not tested. The test circuit and conditions shown in Figure 2 for measuring phase noise uses a 10kHz offset frequency.
- (3) The package marking "FFEP" shows the part number, year and month of manufacturer.
Where: "FF" indicates the part number (FMM5202ML)
"E" indicates the year (1997)
"P" indicates the month (April)

FMM5202ML

Single Oscillator GaAs MMIC

Figure 1. RF CHARACTERISTICS MEASUREMENT CIRCUIT

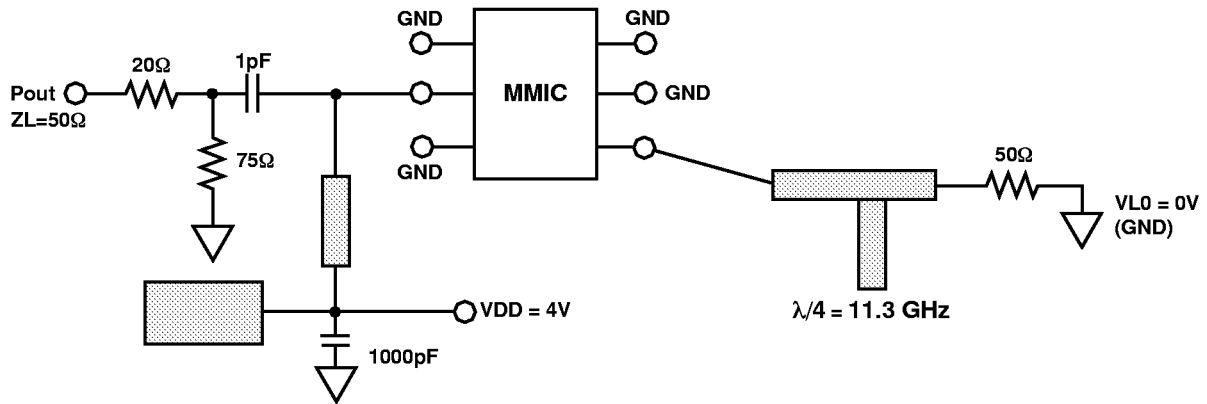
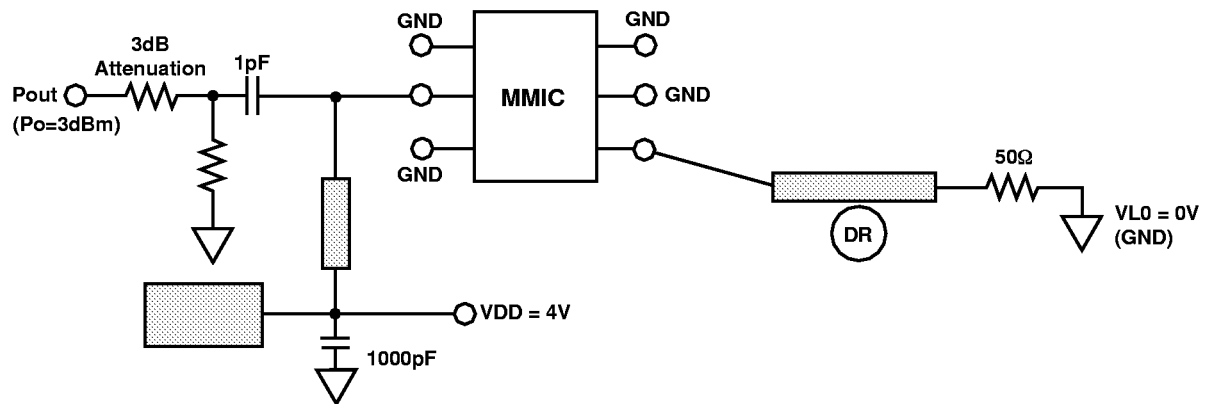
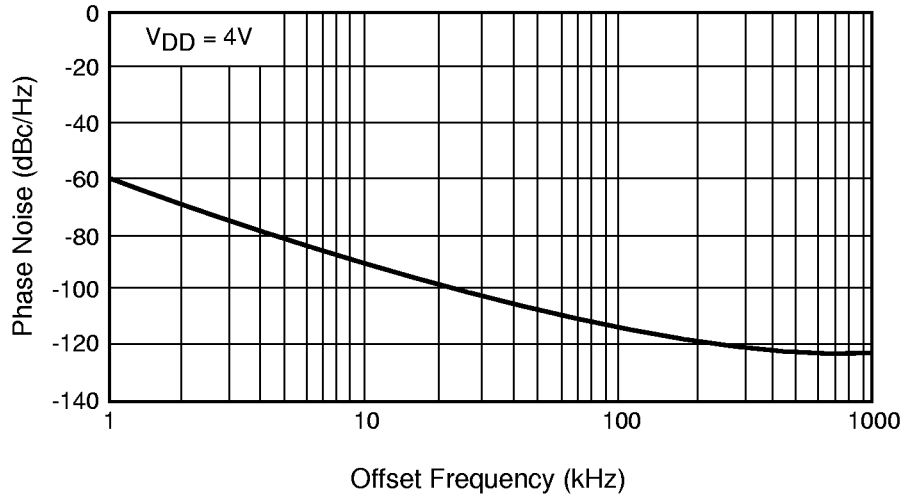


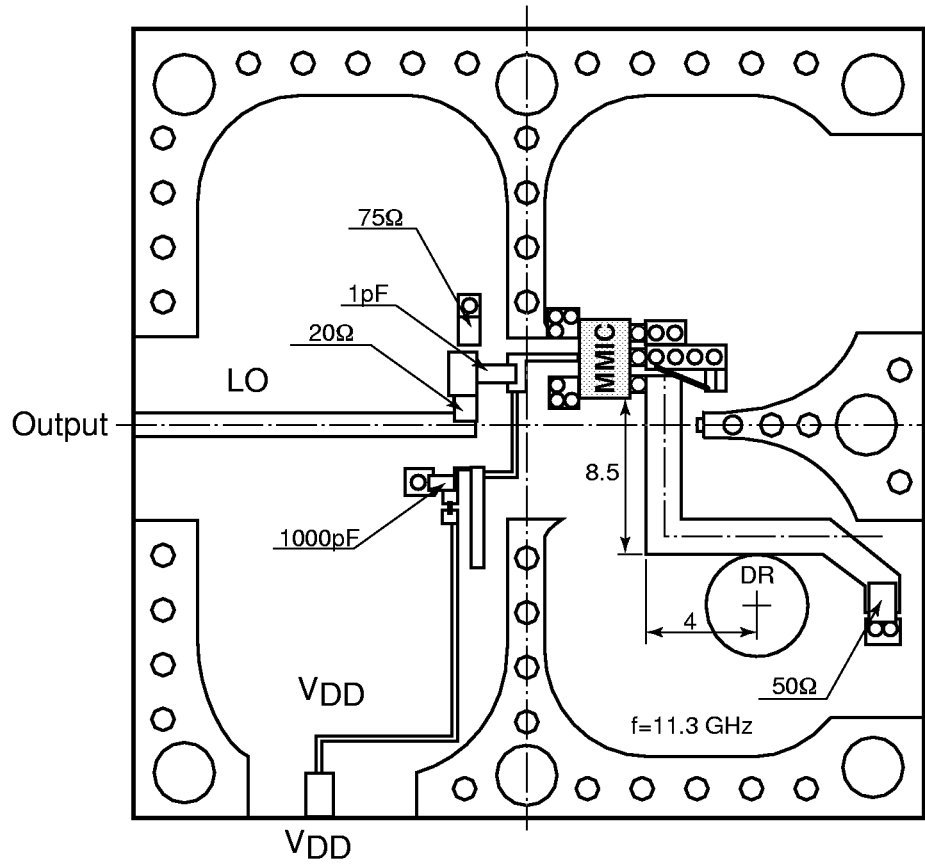
Figure 2. PHASE NOISE MEASUREMENT CIRCUIT



PHASE NOISE vs. OFFSET FREQUENCY



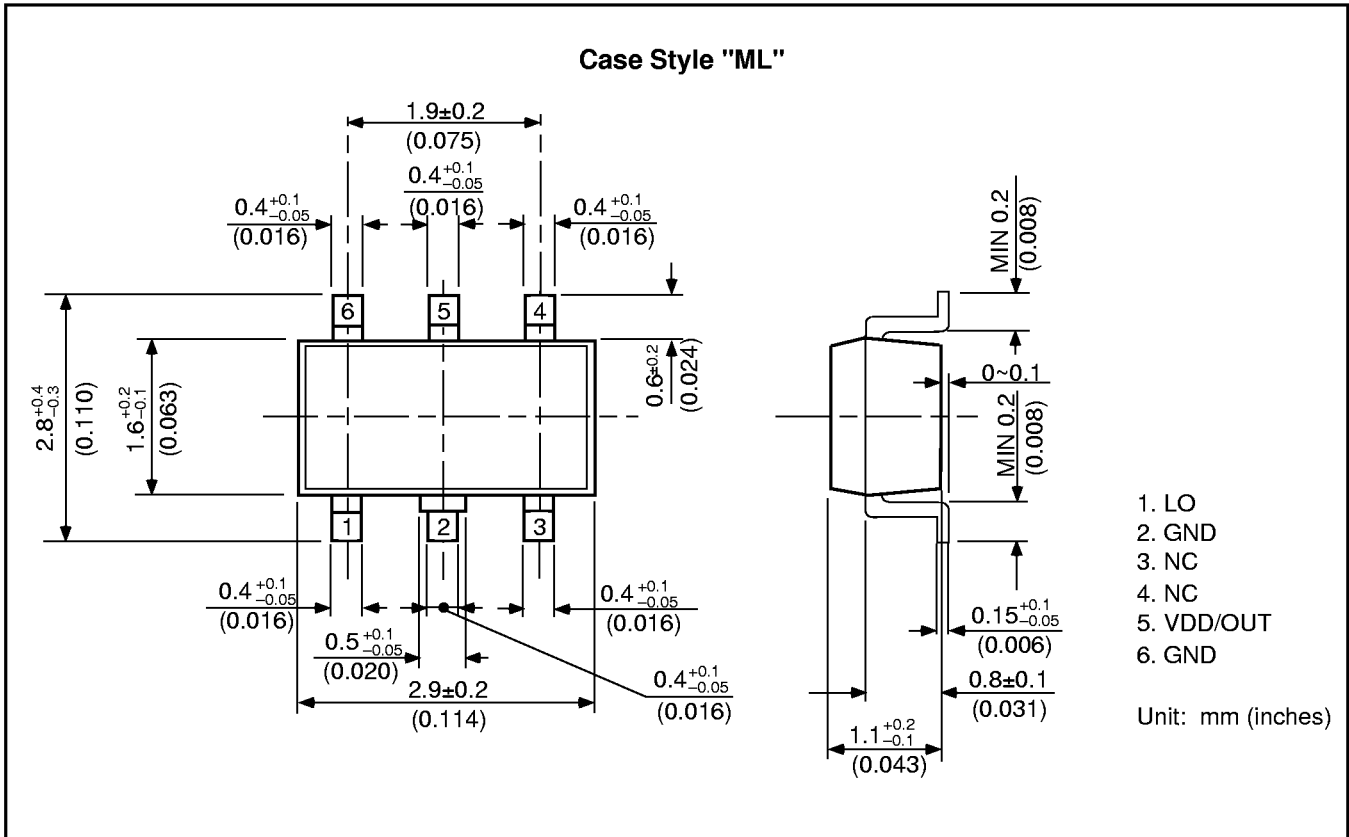
CIRCUIT LAYOUT



$\epsilon_r = 2.5$

FMM5202ML

Single Oscillator GaAs MMIC



For further information please contact:

FUJITSU COMPOUND SEMICONDUCTOR, INC.
 2355 Zanker Rd.
 San Jose, CA 95131-1138, U.S.A.
 Phone: (408) 232-9500
 FAX: (408) 428-9111
 www.fcsi.fujitsu.com

FUJITSU MICROELECTRONICS, LTD.
 Compound Semiconductor Division
 Network House
 Norreys Drive
 Maidenhead, Berkshire SL6 4FJ
 Phone: +44 (0)1628 504800
 FAX: +44 (0)1628 504888

CAUTION

Fujitsu Compound Semiconductor Products contain **gallium arsenide (GaAs)** which can be hazardous to the human body and the environment. For safety, observe the following procedures:

- Do not put these products into the mouth.
- Do not alter the form of this product into a gas, powder, or liquid through burning, crushing, or chemical processing as these by-products are dangerous to the human body if inhaled, ingested, or swallowed.
- Observe government laws and company regulations when discarding this product. This product must be discarded in accordance with methods specified by applicable hazardous waste procedures.

Fujitsu Limited reserves the right to change products and specifications without notice. The information does not convey any license under rights of Fujitsu Limited or others.

© 1998 FUJITSU COMPOUND SEMICONDUCTOR, INC.
 Printed in U.S.A. FCSI0598M200

