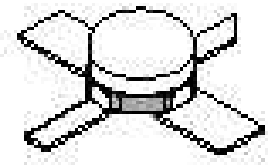
EMM5206LP

K Band Oscillator MMIC

FEATURES

- High Output Power : Pout =5 dBm @ Vdd = 4 V (typ.)
- Low Power Consumption : Idd = 20 mA @ Vdd = 4 V (typ.)
- Low Phase Noise : Φn = -100 dBc/Hz @ 100 kHz offset, fosc = 24 GHz
- Low Spurious Level : RJ2nd < -40 dBc
- High Reliability, High Breakdown Voltage : Vgdo = 20 V, Igdo = 160 uA



DESCRIPTION

The EMM5206LP is a negative resistance MMIC designed for K-band microwave sensor application as an oscillator.

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

ABSOLUTE MAXIMUM RATING

Item	Symbol	Rating	Unit
DC Drain Voltage	Vdd	6	V
Storage Temperature	Tstg	-55 to +125	°C
Operating Case Temperature	Tc	-40 to +85	°C

RECOMMENDED OPERATING CONDITIONS

Item	Symbol	Condition	Unit
DC Drain Voltage	Vdd	4	V
DC Gate Voltage	Vgg	0	V

Recommended operating conditions provide typical electrical characteristics and high reliability.

ELECTRICAL CHARACTERISTICS (Case Temperature Tc = 25°C)

Item	Symbol	Test Conditions	Limits			Unit
			Min.	Typ.	Max.	
Frequency Range with Negative Resistance for S11	fnr			15～24.5		GHz
Output Power	Pout	Vdd = +4.0 V	-	5	-	dBm
Phase Noise at 100KHz Offset	Φn	Vgg = 0 V (GND)	-	-100	-	dBc
Drain Current	Idd	fosc = 24.0 GHz*	-	20	-	mA
2nd Harmonic Rejection	RJ2nd		-	-40	-	dBc
Pushing	Δfv		-	5.7		MHz/V
Temperature Sensitivity	Δft		-	0.2	-	MHz/°C

*The data are measured with the board in page 3.

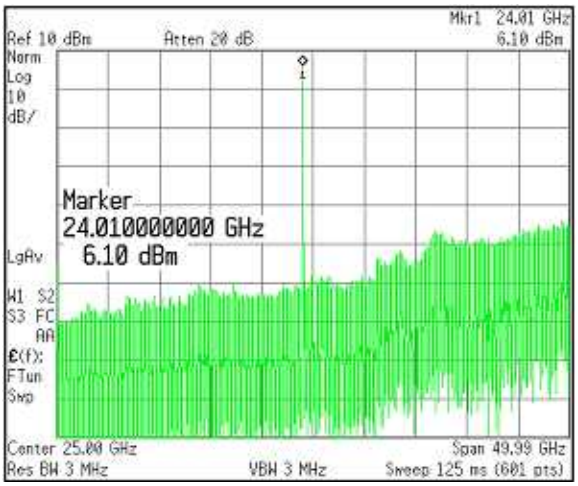
ESD	Class 0	~ 250 V

Note : Based on JEDEC JESD22-A114-C

CASE STYLE	LP

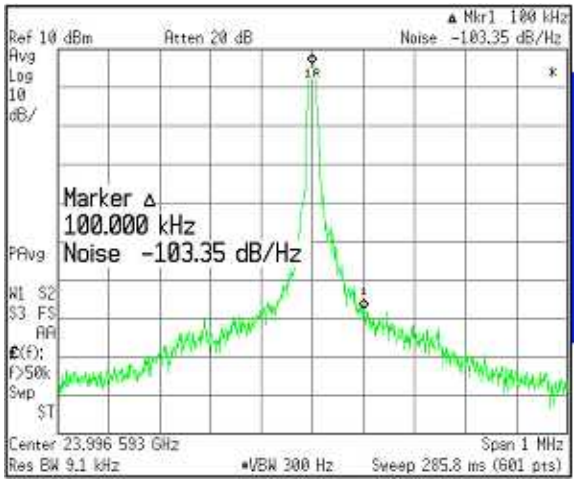
Oscillation Spectrum

Vdd = 4 V, Vgg = 0 V, Idd = 21 mA



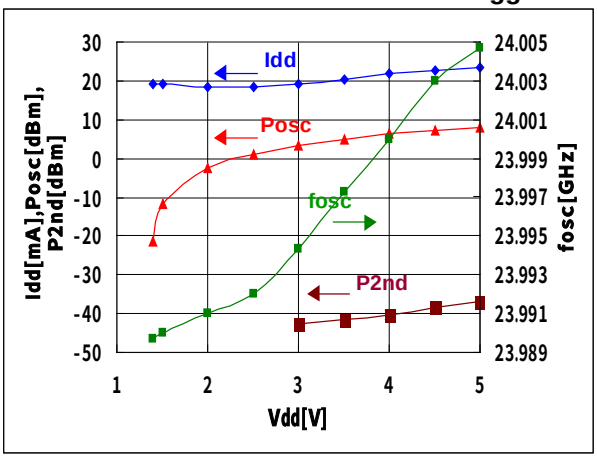
Phase Noise

fosc = 24 GHz, offset = 100 kHz



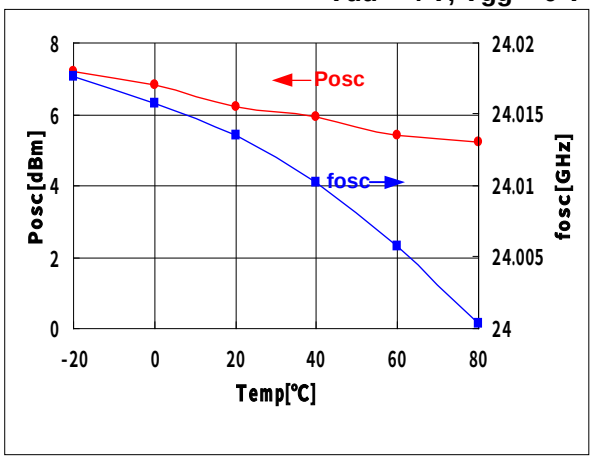
Idd, Posc, P2nd,fosc vs. Vdd

Vgg = 0 V

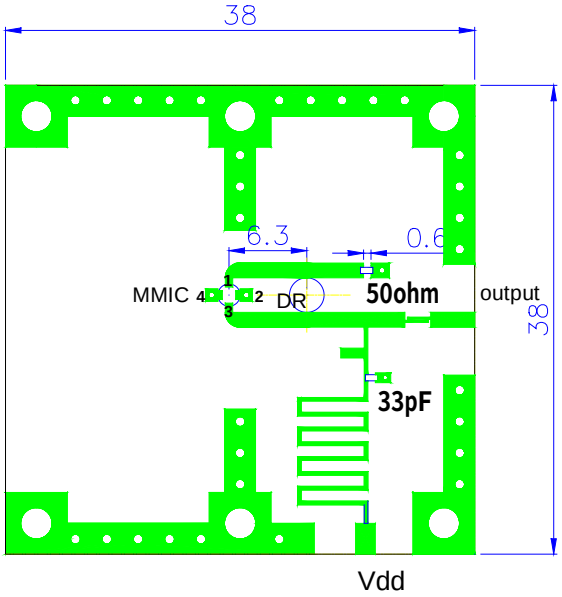


Posc, fosc vs. Temperature

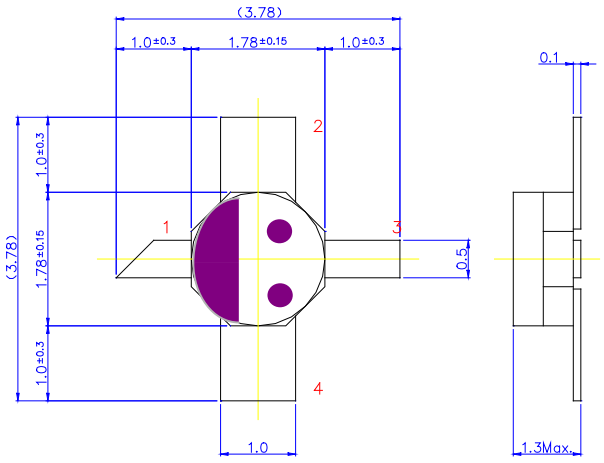
Vdd = 4 V, Vgg = 0 V



■Board Layout (Substrate : RO4003C, εr = 3.38, t = 0.5 mm)



■Package Outline



PIN ASSIGNMENT
1: VGG
2: GND
3: VDD
4: GND

Unit: mm

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CAUTION

Eudyna Devices Inc. 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.