

EMM5206LP

K Band Oscillator MMIC

FEATURES

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



DESCRIPTION

The ES/EMM5206LP is a negative resistance MMIC designed for K-band doppler sensor application as an oscillator. This product is well suited for radiowave sensor and LMDS applications.

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.	
Oscillation frequency	fosc	Vdd=+4.0V typ. Vgg=0V(GND) fosc=24.0GHz	15	-	24.5	GHz
Output Power	Pout		-	5	-	dBm
Phase Noise at 100KHz offset	Φ_n		-	-100	-	dBc
Drain Current	Idd		-	20	-	mA
2nd Harmonic Rejection	RJ2nd		-	-40	-	dBc
Pushing	Δf_v		-	5.7	-	MHz/V
Temperature Sencitivity	Δf_t		-	0.2	-	MHz/°C

ESD	Class 1	200 ~ 499V
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Note : Based on EIAJ ED-4701 C-111A(C=100pF, R=1.5k Ω)

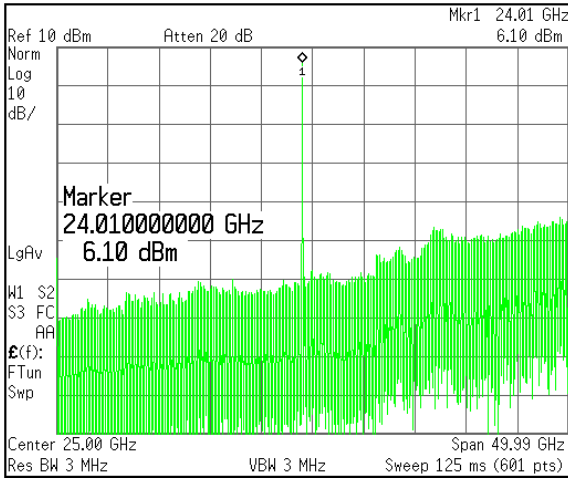
CASE STYLE	LP
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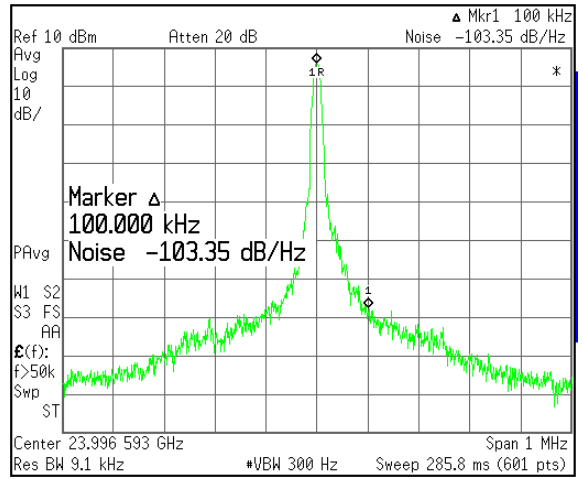
Oscillation Spectrum

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



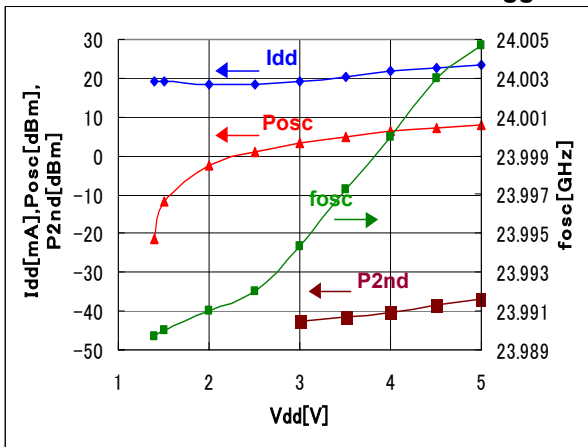
Phase Noise

fosc=24GHz, offset=100KHz



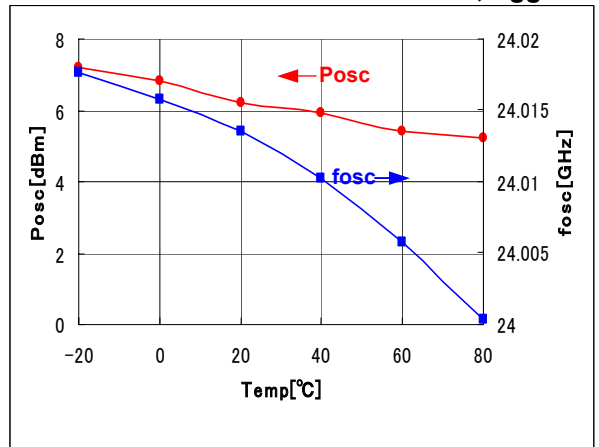
Idd, Posc, P2nd, fosc vs. Vdd

Vgg=0V



Posc, fosc vs. Temperature

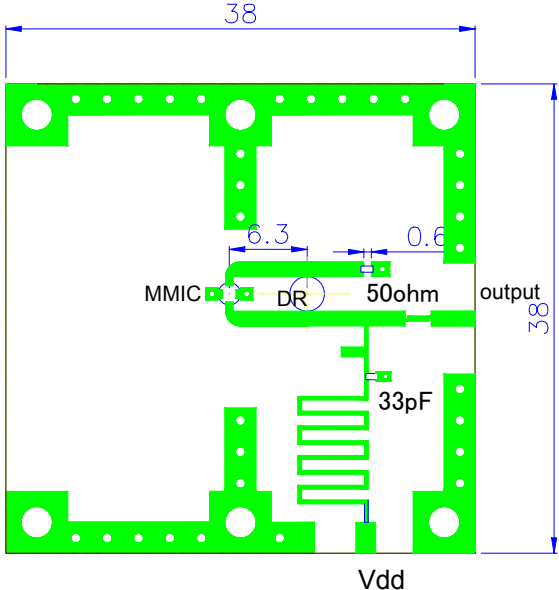
Vdd=4V, Vgg=0V



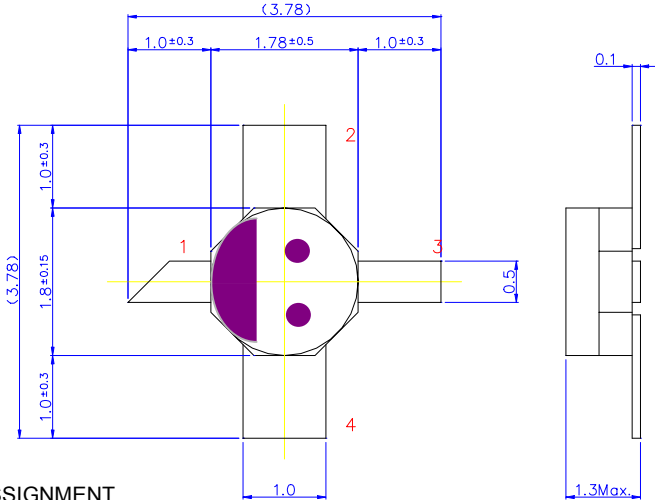
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■ Board Layout (Substrate : RO4003C, $\epsilon_r=3.38$, $t=0.5\text{mm}$
DR : DRD02600115R00Z00T)



■ Package Outline



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

Unit: mm

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- 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.

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