

M4001 & M4002 Series

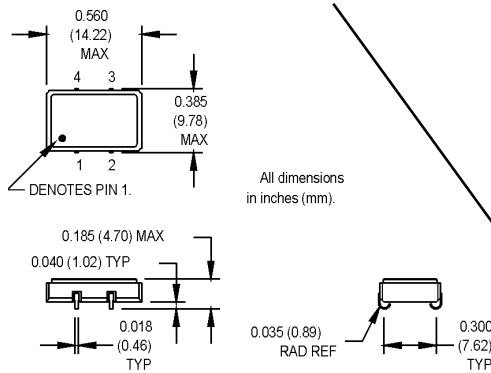
9x14 mm, 5.0 or 3.3 Volt, Sinewave, VCSCO



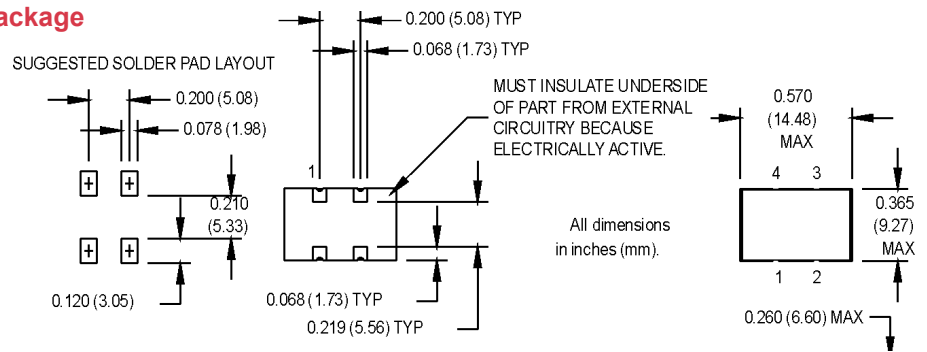
- Low Jitter - <1 ps from 12 kHz to 20 MHz
- Ideal for clock smoothing application for OC-48 and OC-192

Ordering Information						
	M4001/M4002	1	3	V	S	K -R
Product Series						00.0000 MHz
M4001 = 3.3 V						
M4002 = 5.0 V						
Temperature Range						
1: 0°C to +70°C						
7: 0°C to +85°C						
Stability						
3: ±100 ppm (typical)						
Output Type						
V: Voltage Controlled						
Symmetry/Output Type						
S: 45/55% Sinewave						
Package/Lead Configurations						
J: J-lead						
K: FR-4						
RoHS Compliance						
Blank: non-RoHS compliant part						
-R: RoHS compliant part						
Frequency (customer specified)						

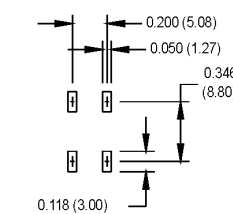
J-Lead Package



FR-4 Package



SUGGESTED SOLDER PAD LAYOUT



Pin Connections

PIN	FUNCTION
1	Control Voltage
2	Ground
3	RF Out
4	+Vdd

PARAMETER	Symbol	Min.	Typ.	Max.	Units	Condition/Notes
Frequency Range	F	622.08		2488	MHz	See Note 1
Operating Temperature	Ta	(See Ordering Information)				
Storage Temperature	Ts	-55		+125	°C	
Frequency Stability	ΔF/F	(See Ordering Information)				
Aging						
1st Year						
Thereafter (per year)						
Pullability/APR		50			ppm	See Note 2
Control Voltage	Vc	0		3.3	V	M4001
		0		5.0	V	M4002
Linearity				15	%	Positive Monotonic Slope
Modulation Bandwidth	fm	500			kHz	-3dB Bandwidth
Input Impedance	Zin	50k			Ohms	
Input Voltage	Vdd	3.135	3.3	3.465	V	M4001
		4.5	5.0	5.5	V	M4002
Input Current	Idd		50	80	mA	M4001
			70	100	mA	M4002
Output Type						Sinewave
Load			50		Ohms	See Note 3
Symmetry (Duty Cycle)		45/55		55/45	%	@ 0 VDC
Output Power	Po	+2	+5	+8	dBm	M4001
		+4	+7	+10	dBm	M4002
Start up Time						
Sub-Harmonic Levels				-20	dBc	
Non-Harmonic Levels				-60	dBc	
Phase Jitter	φ J					
@ 1244.16 MHz						
Phase Noise (Typical)	10 Hz	100 Hz	1 kHz	10 kHz	100 kHz	Integrated 12 kHz - 20 MHz
@ 1244.16 MHz	-35	-63	-90	-117	-152	Offset from carrier
						dBc/Hz

- Consult factory for extended temperature operation and exact frequency availability.
- APR specification inclusive of initial calibration, deviation over temperature, shock, vibration, supply voltage, and aging.
- See load circuit diagram #3.

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Please see www.mtronpti.com for our complete offering and detailed datasheets. Contact us for your application specific requirements: MtronPTI 1-800-762-8800.

MtronPTI Lead Free Solder Profile

