

100 MHz Free Running Reference Oscillator in 0.9 inch SMT (Surface Mount) Package, Internal Ref., Phase Noise -155 dBc/Hz

The FMXR1002 is a 100 MHz Reference Oscillator. The Oscillator has a stability of +/-5 ppm over a temperature range of -30° C to +70° C and an aging of <1ppm 1st year @ +40° C. This design features exceptional phase noise performance of -155 dBc/Hz @ 10 kHz offset. Supply Voltage is +5V DC @ 50 mA typ. The package is 0.9 inch SMT package with an industry standard mounting footprint. The bottom surface is copper clad with 2-5 micro inches of immersion gold over 150 - 250 micro inches of electroless nickel which makes it resistant to oxidation for ease of soldering. The reference oscillator has an output power level of +7 dBm +/- 3 dB and 2nd harmonic output of -20 dBc typical. The reference oscillator operates over a temperature range of -30°C to +70°C and is designed to meet a variety of MIL-STD-202 test conditions including Humidity, Shock, and Vibration.



Features:

- 100 MHz Reference Oscillator
- -155 dBc/Hz @ 10kHz offset
- Pout +7 dBm
- Harmonics -20 dBc
- Designed to meet MIL-STD-202 Environmental Conditions
- connectorized version available see FMXR1005

Electrical Specifications

Description	Min	Typ	Max	Units
Ouput Frequency		100		MHz
Ouput Impedance		50		Ohms
Output Power	+4	+7	+10	dBm
Phase Noise @ 10Hz Offset		-65		dBc/Hz
Phase Noise @ 100Hz Offset		-95		dBc/Hz
Phase Noise @ 1kHz Offset		-125		dBc/Hz
Phase Noise @ 10kHz Offset		-155		dBc/Hz
2nd Harmonics		-20	-15	dBc
Spurious		-70	-65	dBc
Frequency Stability			±5	ppm
Supply Voltage (DC)		5		Vdc
Supply Current (DC)		50		mA

Applications:

- Phase Locked Loop
- Function Generators
- Frequency Synthesizers
- Receivers
- Electronic Jamming Equipment
- Local Oscillator
- Wireless Communications
- SATCOM
- Optical Communications
- Military Electronic Systems

Mechanical Specifications

Size	
Length	0.9 in [22.86 mm]
Width	0.9 in [22.86 mm]
Height	0.21 in [5.33 mm]
Weight	0.0195 lbs [8.85 g]
Mounting Surface Material and Plating Design	Copper Clad Nickel, Gold Commercial
Reference Type	Internal
Package Style	Surface Mount

Environmental Specifications

Temperature	
Operating Range	-30 to +70 deg C
Shock	IAW MIL-STD-202, Method 213, Condition A
Vibration	IAW MIL-STD-202, Method 204, Condition A

Fairview Microwave
 1130 Junction Dr. #100
 Allen, TX 75013
 Tel: 1-800-715-4396 / (972) 649-6678
 Fax: (972) 649-6689
www.fairviewmicrowave.com
sales@fairviewmicrowave.com

ESD Sensitivity

ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in ESD Workstation.

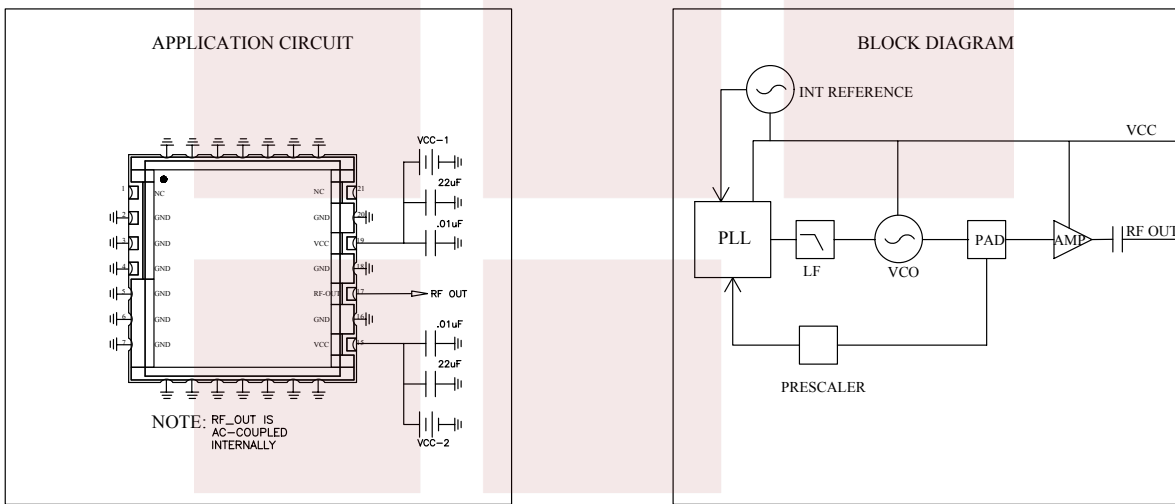


Compliance Certifications (see [product page](#) for current document)

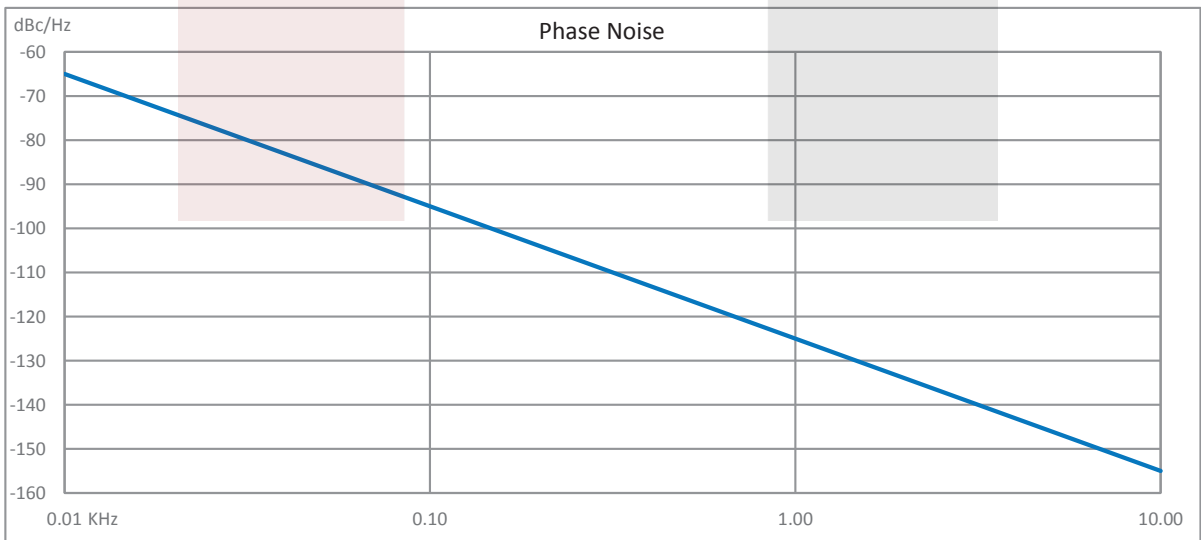
Plotted and Other Data

Notes:

Functional Block Diagram



Typical Performance Data



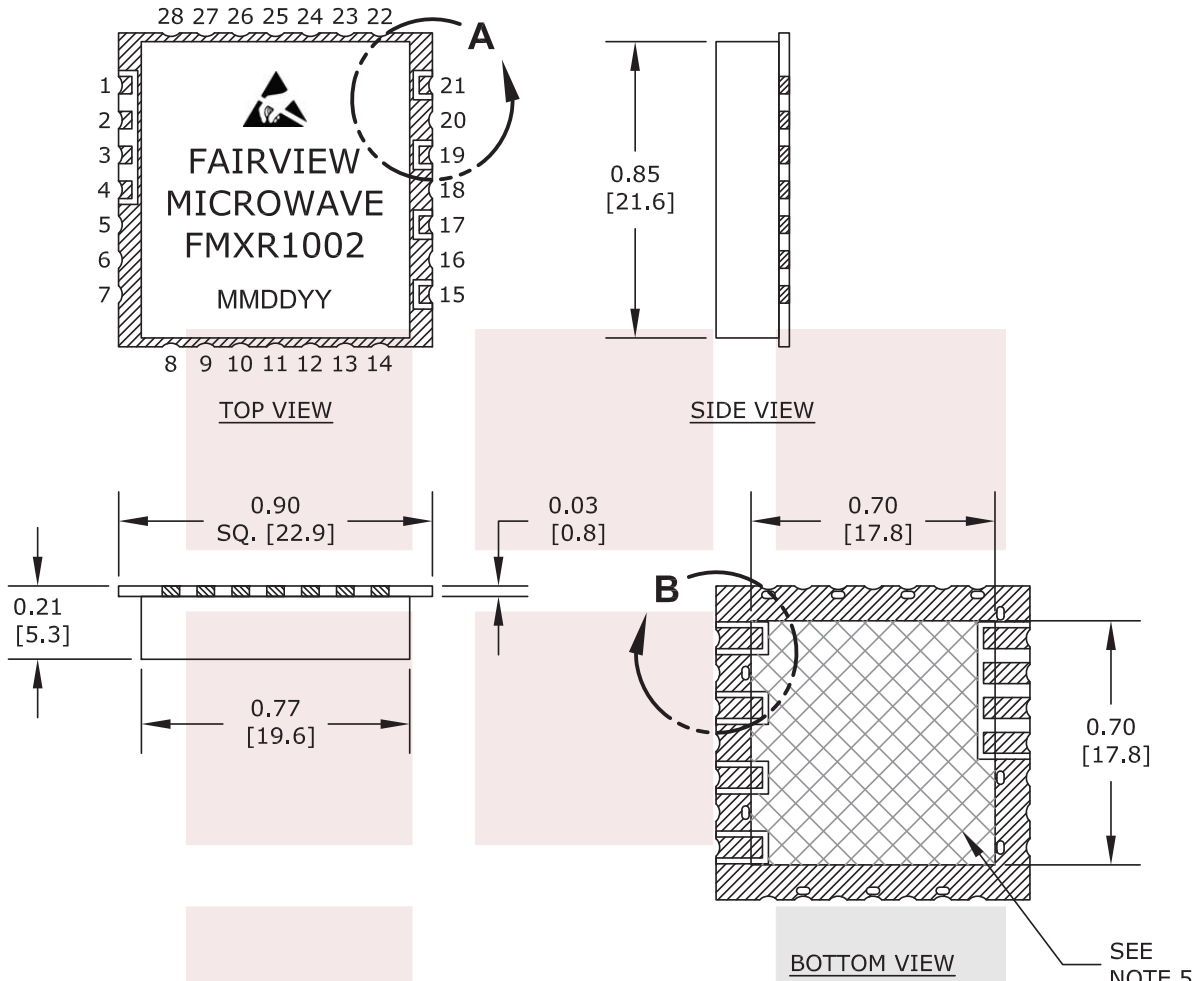
100 MHz Free Running Reference Oscillator in 0.9 inch SMT (Surface Mount) Package, Internal Ref., Phase Noise -155 dBc/Hz from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [100 MHz Free Running Reference Oscillator in 0.9 inch SMT \(Surface Mount\) Package, Internal Ref., Phase Noise -155 dBc/Hz FMXR1002](#)

URL: <https://www.fairviewmicrowave.com/100-mhz-free-running-reference-oscillator-smt-surface-mount-internal-fmxr1002-p.aspx>

The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Fairview Microwave reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Fairview Microwave does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Fairview Microwave does not assume any liability arising out of the use of any part or documentation.





UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN: inches [mm]
TOLERANCES ARE:
.XX = ± .03 [.762]
.XXX = ± .005 [.127]

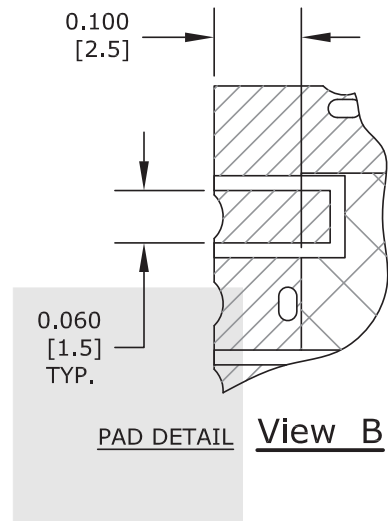
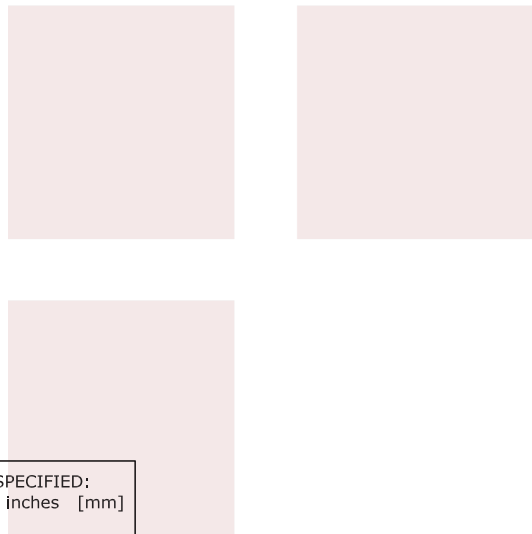
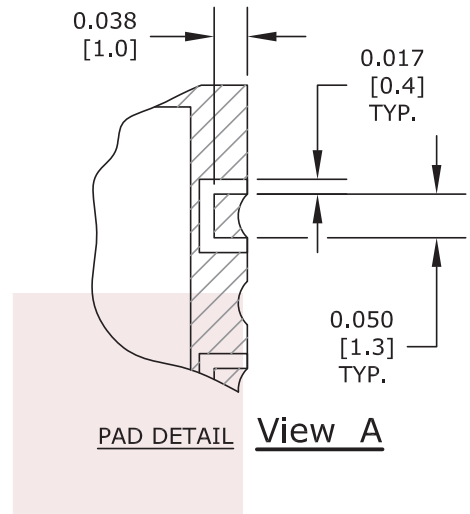
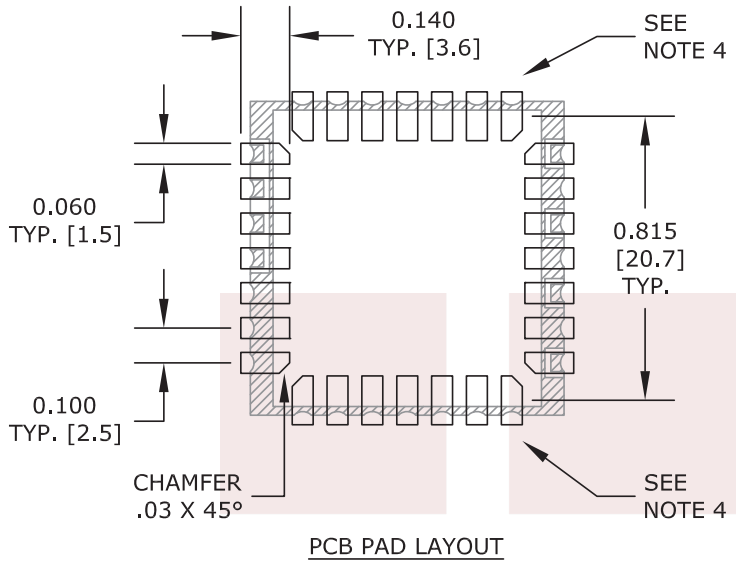
* THESE DIMENSIONS AND TOLERANCES
SUPERSEDE NOTE #1 ON TITLE BLOCK.

NOTES:

1. SINGLE HATCHED AREA REPRESENTS EXPOSED METALIZATION.
2. DOUBLE HATCHED AREA REPRESENTS MASK OVER METALIZATION.
3. RECOMMENDED PAD LAYOUT IAW IPC-7351.
4. TOP AND BOTTOM GROUND PADS MAY BE USED IN HIGH VIBRATION APPLICATIONS, MAY BE OMITTED FOR NORMAL OPERATION.
5. DOUBLE HATCHED AREA REPRESENTS MASKED (TENTED) VIAS AND TRACES, REMOVE ALL METALIZATION FROM THIS AREA ON MATING PART.

Pin Configuration							
1	NC	8	GND	15	Vcc	22	GND
2	GND	9	GND	16	GND	23	GND
3	GND	10	GND	17	RF OUT	24	GND
4	GND	11	GND	18	GND	25	GND
5	GND	12	GND	19	Vcc-1	26	GND
6	GND	13	GND	20	GND	27	GND
7	GND	14	GND	21	LOCK	28	GND

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TITLE	100 MHz Free Running Reference Oscillator in 0.9 inch SMT (Surface Mount) Package, Internal Ref., Phase Noise -155 dBc/Hz		DWG NO	FMXR1002	CAGE CODE	3FKR5
CAD FILE	120116	SHEET	SCALE	N/A	SIZE	A 2233



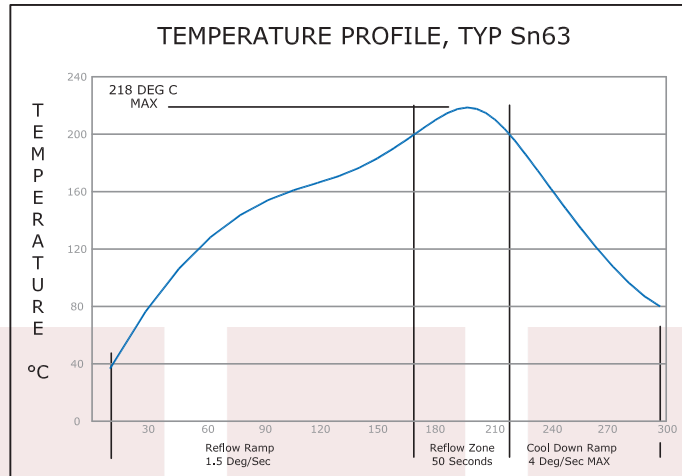
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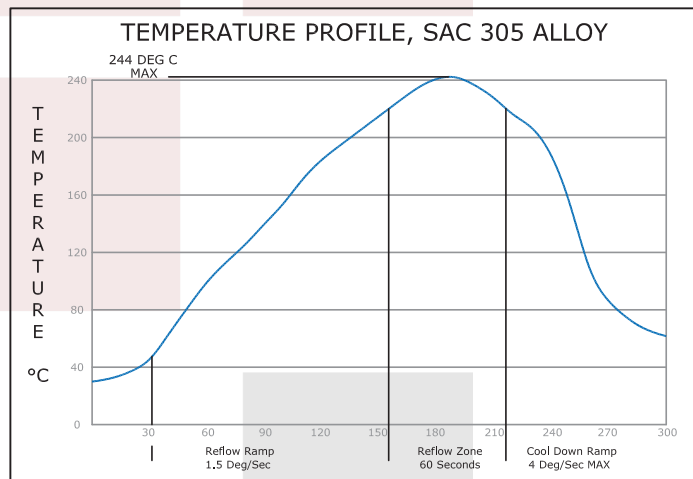
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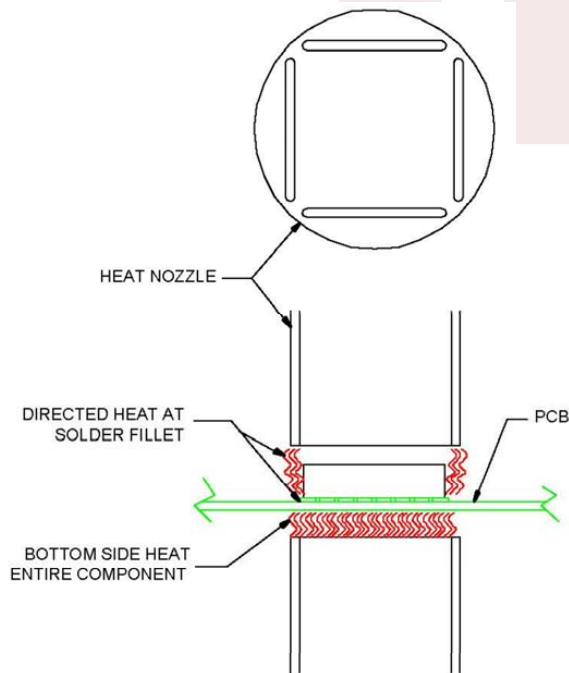
TYPICAL ATTACHMENT REFLOW PROFILES



NON-RoHS



RoHS



REMOVAL INSTRUCTIONS

1. ESD PRECAUTIONS MUST BE OBSERVED DURING REWORK.
2. APPLY A LIBERAL AMOUNT OF FLUX TO ALL SOLDER CONNECTIONS.
3. REMOVE EXCESS SOLDER WITH A SOLDERING IRON AND WICK.
4. APPLY HEAT AND LIFT THE COMPONENT STARTING AT ONE CORNER WITH A SMALL SPATULA OR SIMILAR TOOL. CARE MUST BE TAKEN NOT TO BUMP THE LID WHICH MAY CAUSE INTERNAL SHORTS.
5. REMOVE ANY REMAINING SOLDER ON THE PADS PRIOR TO RE-ATTACHMENT.

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