

50 MHz Phase Locked Crystal Oscillator in 0.9 inch SMT (Surface Mount) Package, 10 MHz External Ref., Phase Noise -155 dBc/Hz

The FMXP5000 is a 50 MHz Phase-Locked Crystal Oscillator with an external 10 MHz Reference Oscillator. This design features exceptional phase noise performance of -155 dBc/Hz @ 10 kHz offset. Supply Voltage is +5V DC @ 75 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 +/- 2 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.

Electrical Specifications

Description	Min	Typ	Max	Units
Output Frequency		50		MHz
Output Impedance		50		Ohms
Output Power	+5	+7	+9	dBm
Phase Noise @ 10Hz Offset		-90	-85	dBc/Hz
Phase Noise @ 100Hz Offset		-105	-100	dBc/Hz
Phase Noise @ 1kHz Offset		-135	-130	dBc/Hz
Phase Noise @ 10kHz Offset		-155	-150	dBc/Hz
Reference Frequency		10		MHz
Reference Impedance		50		Ohms
Reference Power	+4	+7	+10	dBm
Ref. Phase Noise @ 10Hz Offset		-110		dBc/Hz
Ref. Phase Noise @ 100Hz Offset		-130		dBc/Hz
Ref. Phase Noise @ 1kHz Offset		-145		dBc/Hz
2nd Harmonics		-20	-15	dBc
Spurious		-70	-65	dBc
Lock Detect	5 VDC TTL, HIGH=LOCK			
Supply Voltage (DC) 1		5		Vdc
Supply Current (DC) 1		75	100	mA

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	External
Package Style	Surface Mount

Environmental Specifications

Temperature	
Operating Range	-30 to +70 deg C



Features:

- 50 MHz Phase-Locked Crystal Oscillator
- External 10 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 FMXP5002

Applications:

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

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Shock
Vibration
ESD Sensitivity

IAW MIL-STD-202, Method 213, Condition A
IAW MIL-STD-202, Method 204, Condition A
ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in ESD Workstation.

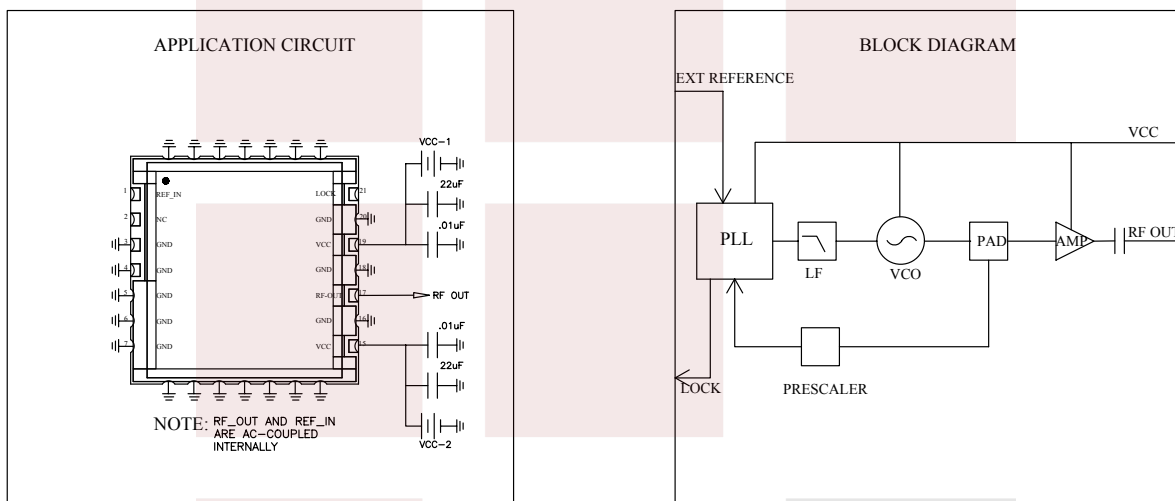


Compliance Certifications (see [product page](#) for current document)

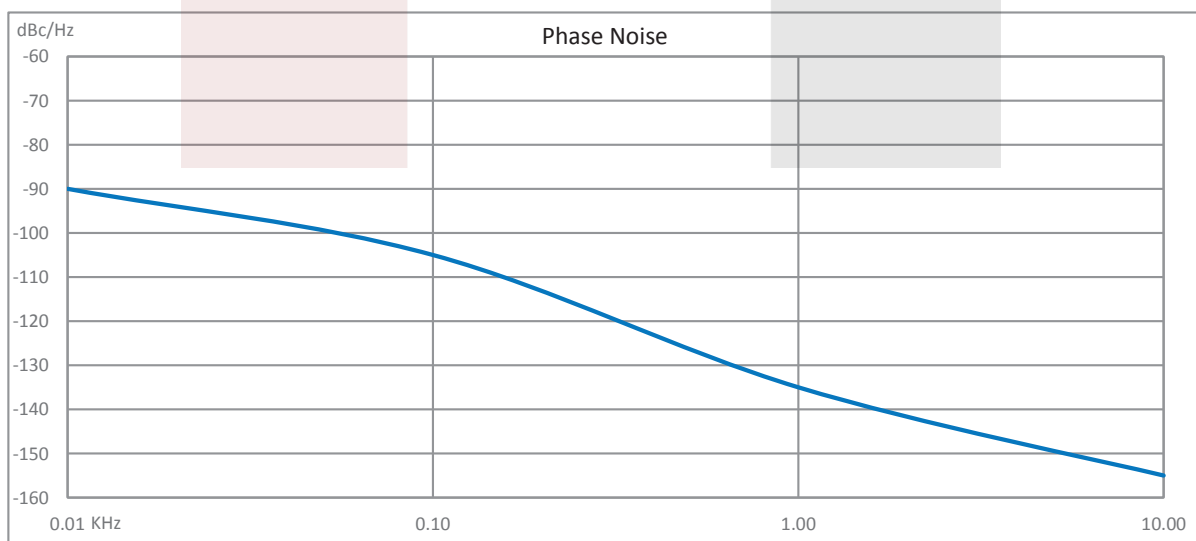
Plotted and Other Data

Notes:

Functional Block Diagram



Typical Performance Data



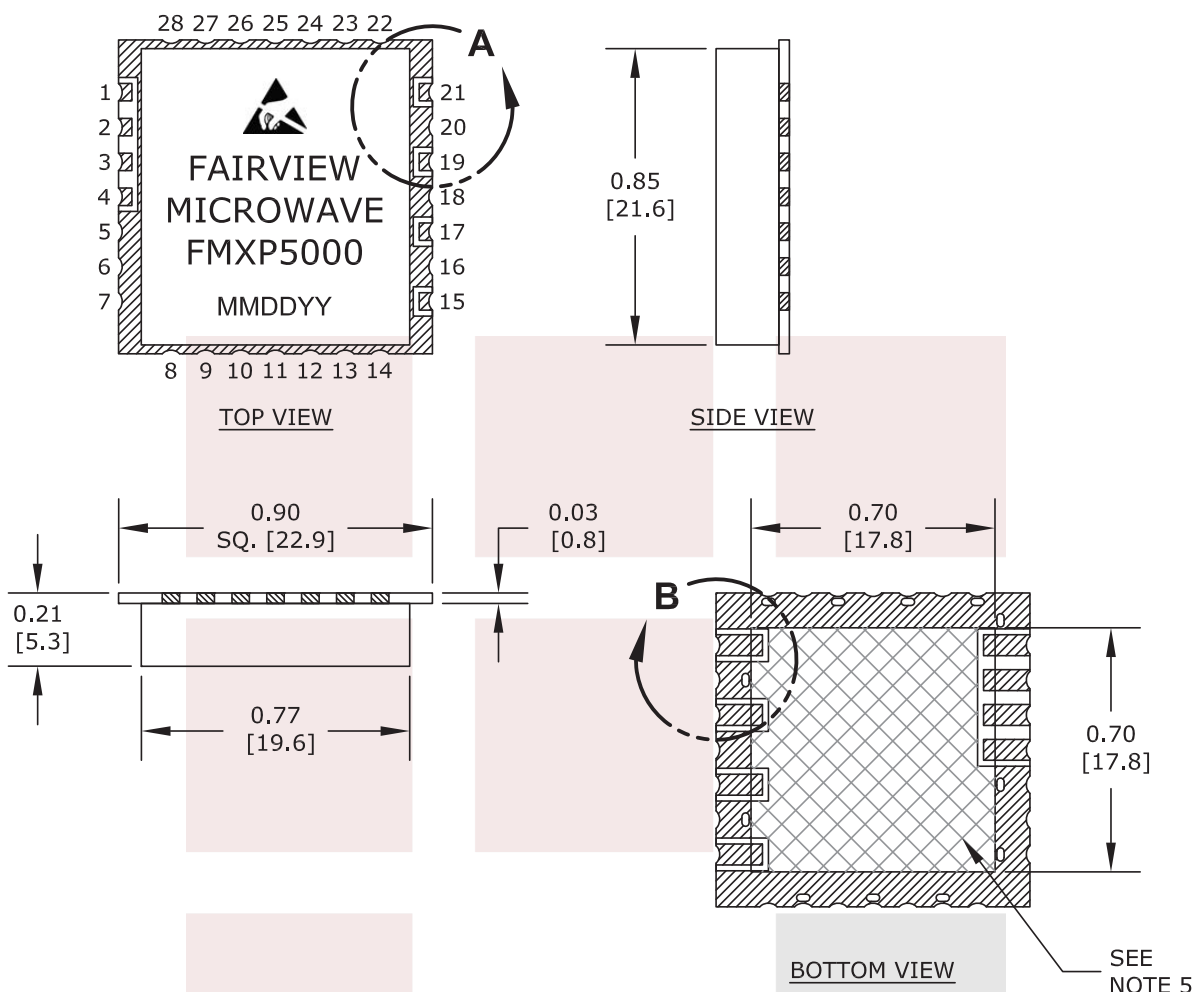
50 MHz Phase Locked Crystal Oscillator in 0.9 inch SMT (Surface Mount) Package, 10 MHz External Ref., Phase Noise -155 dBc/Hz from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [50 MHz Phase Locked Crystal Oscillator in 0.9 inch SMT \(Surface Mount\) Package, 10 MHz External Ref., Phase Noise -155 dBc/Hz FMXP5000](#)

URL: <https://www.fairviewmicrowave.com/50-mhz-phase-locked-crystal-oscillator-smt-surface-mount-external-fmvp5000-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 RF IN	8 GND	15 Vcc-2	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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3. DIMENSIONS ARE IN INCHES [mm].

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SMT (Surface Mount) Package, 10 MHz External Ref.,
Phase Noise -155 dBc/Hz

DWG NO

FMXP5000

CAGE CODE

3FKR5

CAD FILE

120116

SHEET

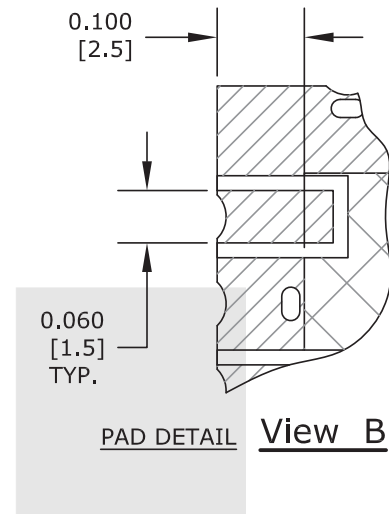
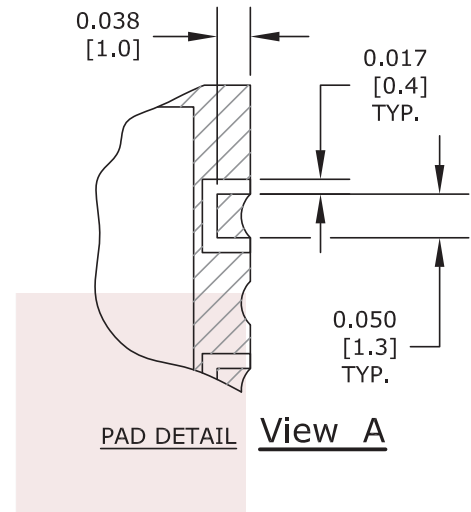
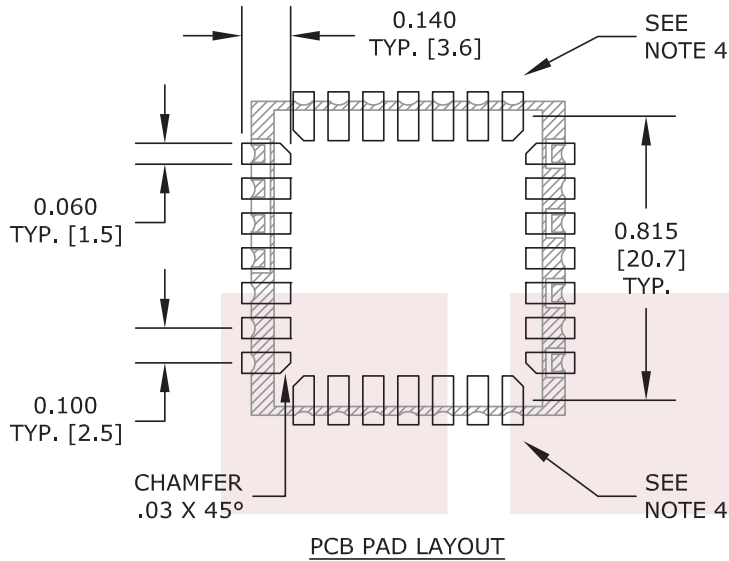
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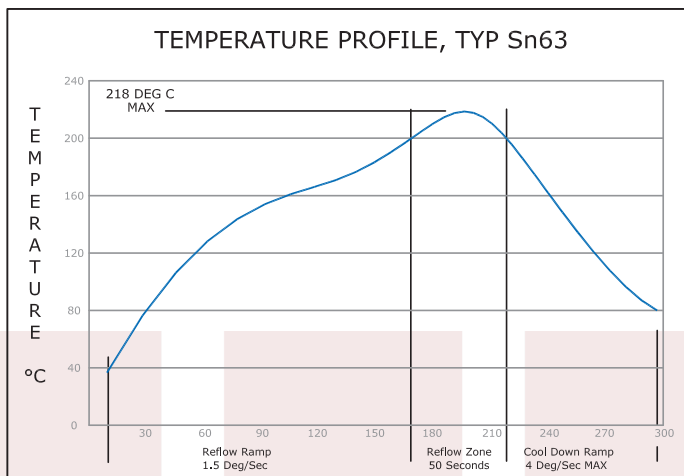
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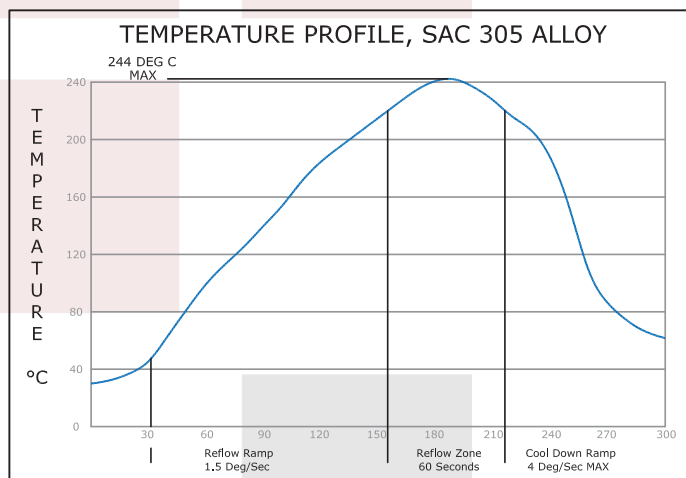
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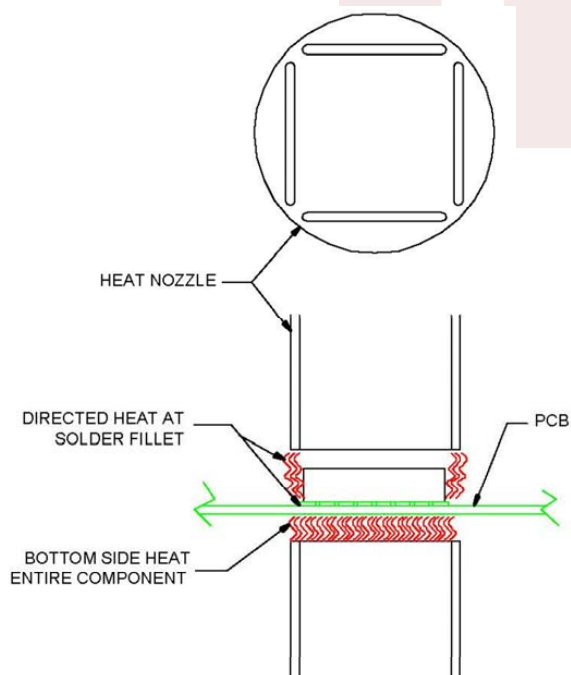
TYPICAL ATTACHMENT REFLOW PROFILES



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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