



## COAXIAL

# X3 Active Frequency Multiplier ZXF90A-3-34X+

50Ω Output 18 to 36 GHz SMA-Female to 2.92 mm-Male

### KEY FEATURES

- Wideband Output, 18 to 36 GHz
- Wide Input Power Range, -3.5 to +1.5 dBm
- Excellent Conversion Gain, -5 dB Typ.
- Excellent Fundamental and Harmonic Suppression:  
F1 < -55 dBc; F2 < -55 dBc; F4 < -35 dBc.
- Wide DC Operating Voltage, +10 to +15 V
- Over Voltage and Reverse Voltage Protected

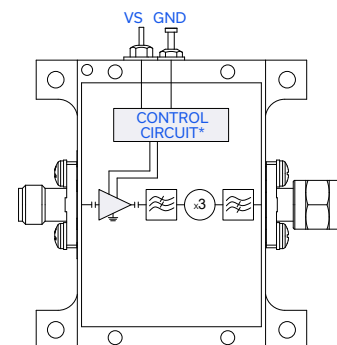


Generic photo used for illustration purposes only

### APPLICATIONS

- 5G MIMO and Back Haul Radio Systems
- Satellite Communications
- Test and Measurement Equipment
- Radar, EW, and ECM Defense Systems

### FUNCTIONAL DIAGRAM



### PRODUCT OVERVIEW

Mini-Circuits' ZXF90A-3-34X+ is a wideband active frequency multiplier, converting input frequencies from 6 to 12 GHz into output frequencies from 18 to 36 GHz. Its wide output range makes this model suitable for broadband systems, as well as a wide variety of narrow-band applications. The ZXF90A-3-34X+ utilizes MCLs' own GaAs HBT LVA-273PN-D+ MMIC amplifier to drive MCLs' own GaAs HBT CY3-453-D+ frequency tripler. The fundamental, 2nd and 4th harmonics are suppressed further through use of MCLs' integrated reflectionless filters, XLF-962-DG+ & XHF-1832-DG+. The ultra-low additive phase noise of the LVA-273PN-D+ (-167 dBc/Hz @ 10 kHz Offset) makes this a great LO driver, or source for chipset testing.

### ELECTRICAL SPECIFICATIONS<sup>1</sup> AT +25°C AND Z<sub>0</sub> = 50Ω, UNLESS NOTED OTHERWISE

Parameter	Input Frequency (GHz)	Min.	Typ.	Max.	Unit
Multiplication Factor		3			
Frequency Range, Input (F1)		6		12	GHz
Frequency Range, Output (F3)		18	-	36	GHz
Input Power		-3.5		+1.5	dBm
Conversion Gain <sup>1</sup>	6 - 12	-9	-5		dB
Harmonic Output <sup>2</sup>	F1	-	55	-	dBc
	F2	-	55	-	
	F4	-	35	-	
DC Supply Voltage (Vs)		+10	-	+15	V
DC Current at Vs = +10 V		-	120	175	mA

1. Open and short-circuit loads are not recommended at the modules' output. Ensure proper 50 Ω before turning the module on.

2. Harmonics of input frequency below the power level of F3.





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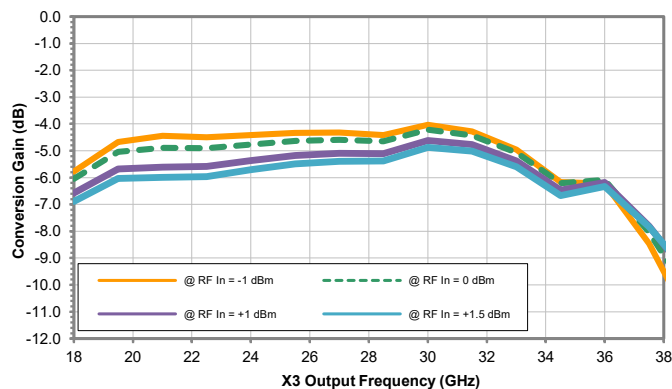
# X3 Active Frequency Multiplier ZXF90A-3-34X+

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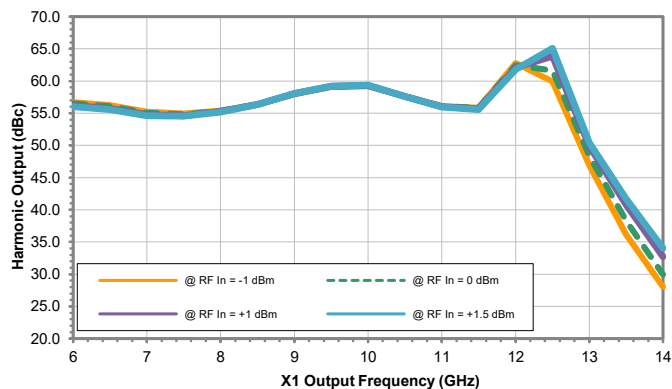
50Ω Output 18 to 36 GHz SMA-Female to 2.92 mm-Male

## TYPICAL PERFORMANCE CURVES

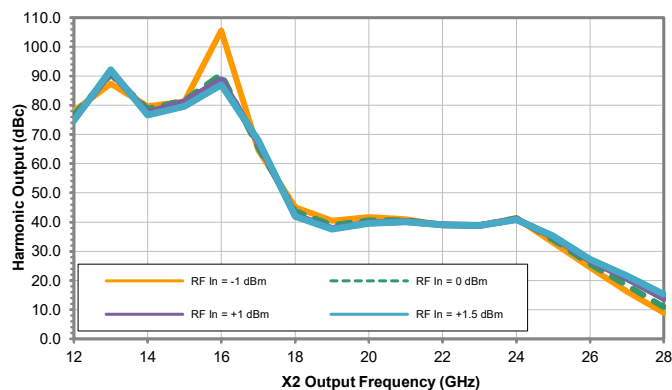
Conversion Gain X3 Output Vs Pin



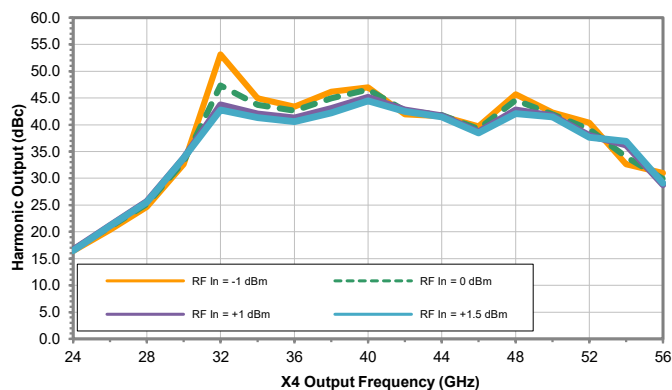
Harmonic X1 Output Vs Pin



Harmonic X2 Output Vs Pin



Harmonic X4 Output Vs Pin



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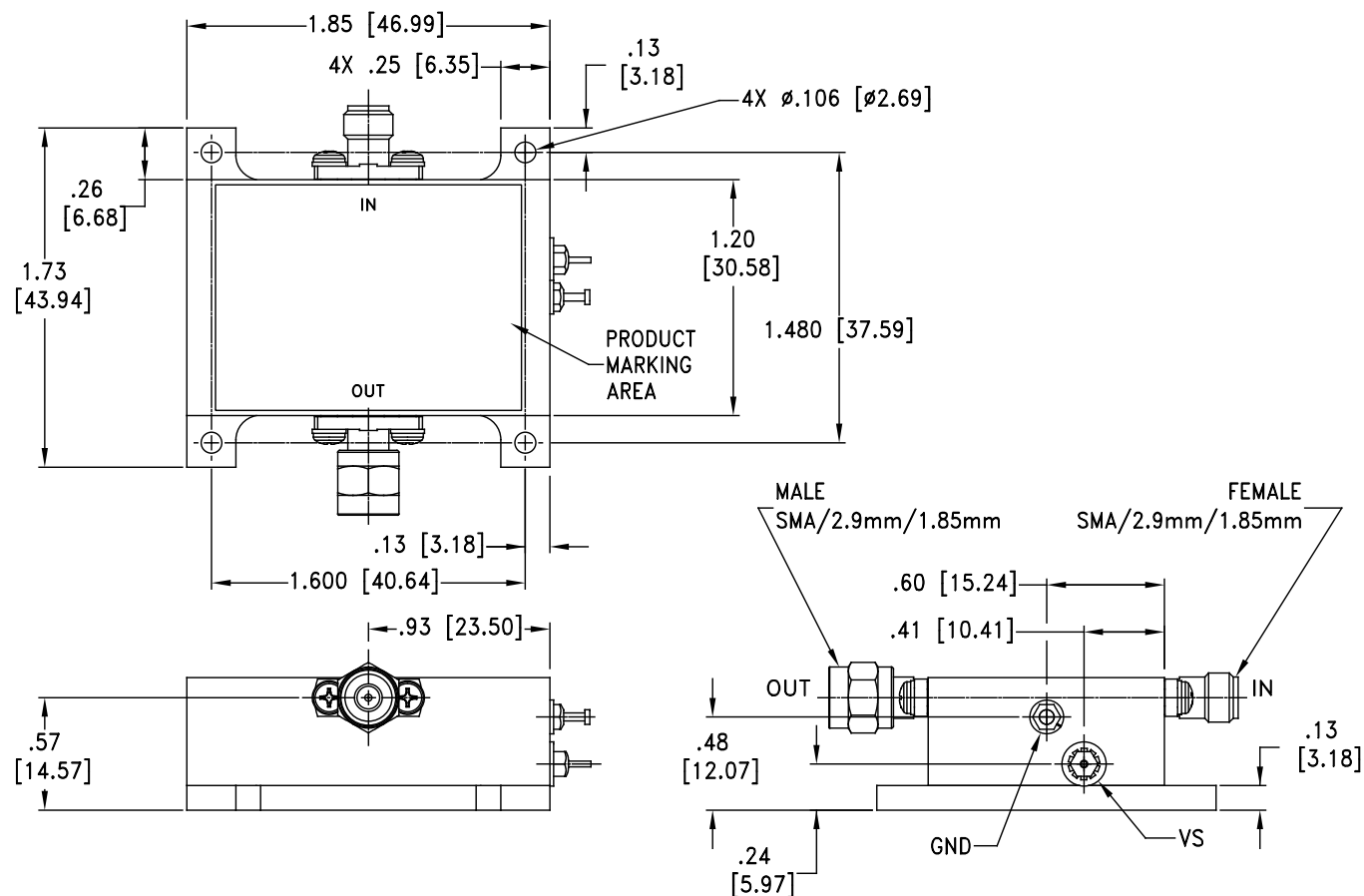
## ABSOLUTE MAXIMUM RATINGS<sup>3</sup>

Parameter	Ratings
Operating Temperature	-40°C to +60°C Baseplate
Storage Temperature	-40°C to +85°C
Total Power Dissipation	2 W
RF Input Power <sup>4</sup>	+2 dBm
DC Operating Voltage (Vs)	+16 V

3. Permanent damage may occur if any of these limits are exceeded.

4. Specified under matched 50Ω load.

## CASE STYLE DRAWING



Weight: 60 grams

Dimensions are in inches [mm]. Tolerances: 2 Pl.±.03; 3 Pl.±.015 Inch





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## ADDITIONAL INFORMATION IS AVAILABLE ON OUR DASHBOARD.

Performance Data & Graphs	Data
	Graphs
RoHS Status	Compliant
Environmental Ratings	ENV130
Export Information	EAR99

## ORDERING INFORMATION

Model No. Links	<a href="#">ZXF90A-3-34X+</a>
Product Marking	ZXF90A-3-34X+
Case Style	WC3071-8
Connector	SMA-Female to 2.92 mm-Male

### NOTES

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the standard terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/terms/viewterm.html](http://www.minicircuits.com/terms/viewterm.html)



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