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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

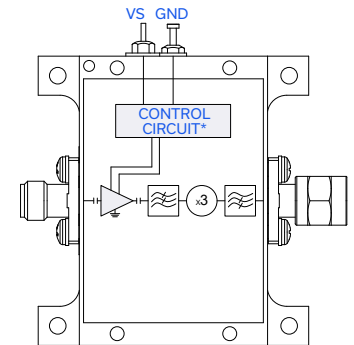


Generic photo used for illustration purposes only

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 SPECIFICATIONS¹ AT +25°C AND Z₀ = 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 ¹ | 6 - 12 | -9 | -5 | | dB |
| Harmonic Output ² | F1 | 6 - 12 | - | 55 | dBc |
| | F2 | 6 - 12 | - | 55 | |
| | F4 | 6 - 12 | - | 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.





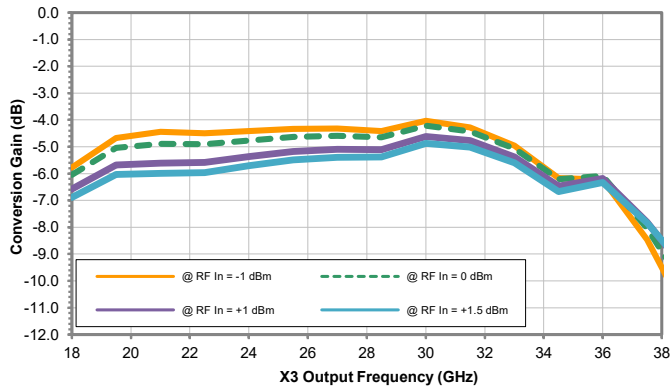
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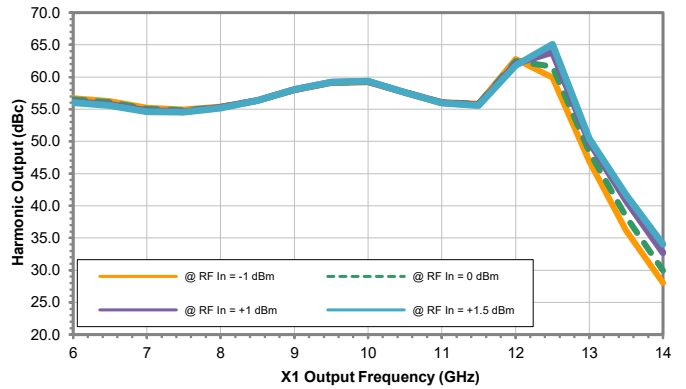
50Ω Output 18 to 36 GHz SMA-Female to 2.92 mm-Male

TYPICAL PERFORMANCE CURVES

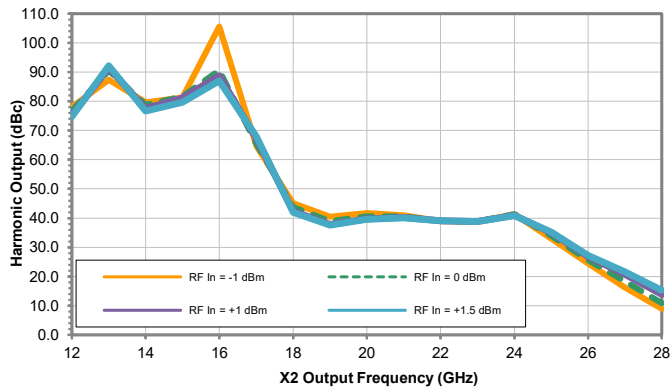
Conversion Gain X3 Output Vs Pin



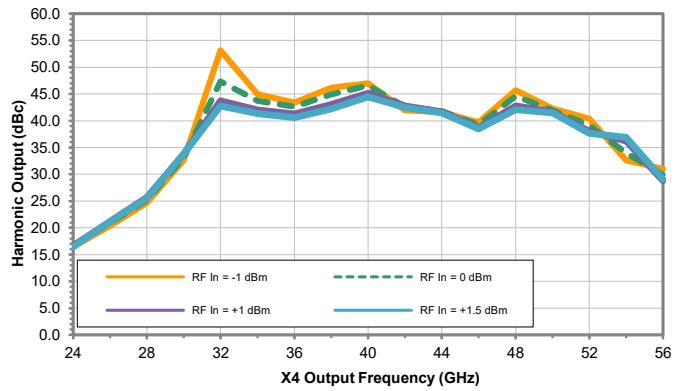
Harmonic X1 Output Vs Pin



Harmonic X2 Output Vs Pin



Harmonic X4 Output Vs Pin





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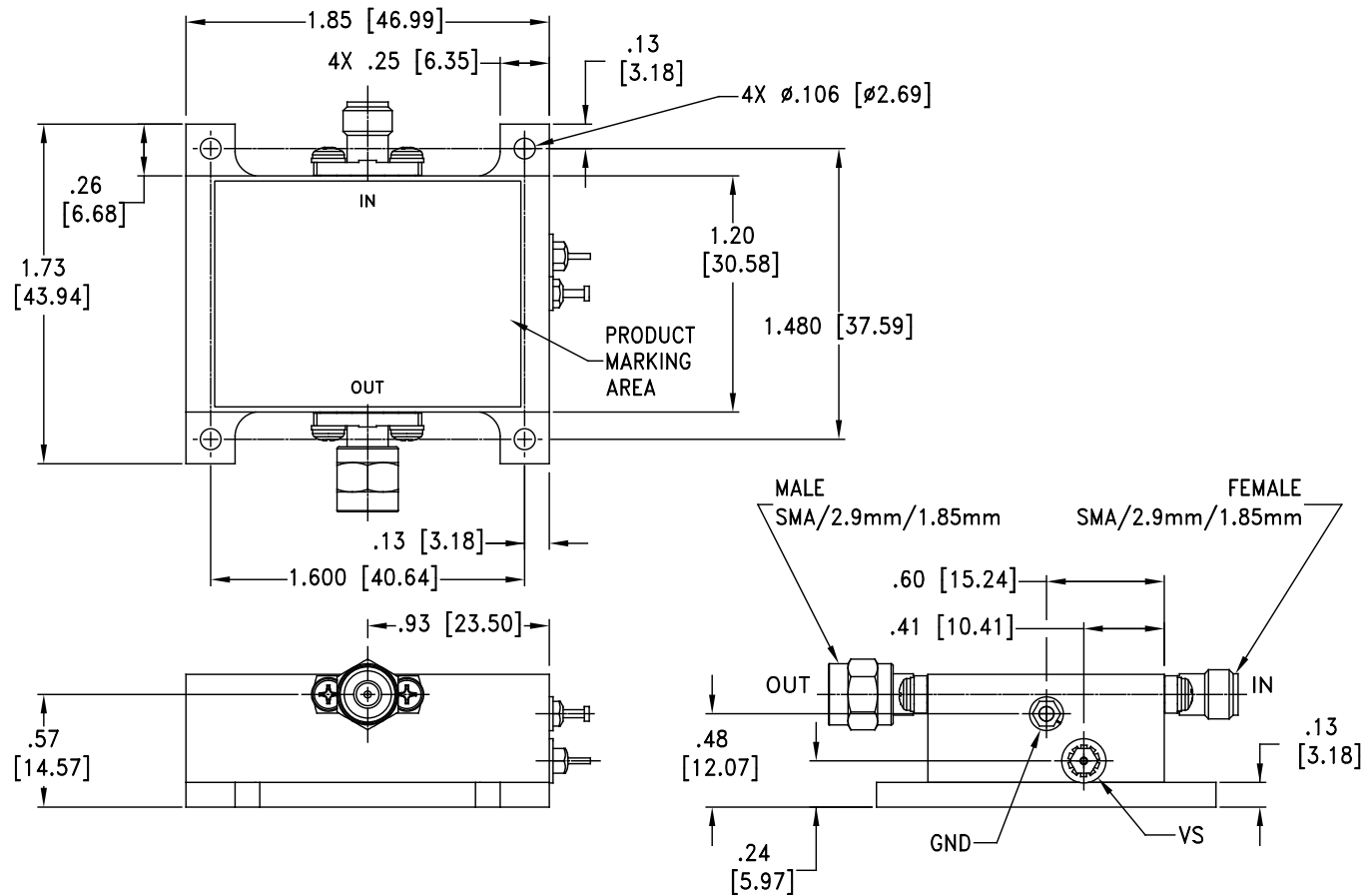
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ABSOLUTE MAXIMUM RATINGS³

| 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 ⁴ | +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 | ZXF90A-3-34X+ |
| 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

