



COAXIAL

X3 Frequency Multiplier ZXF90-3-723-E+

50Ω Output 40 to 72 GHz 2.92 mm-Female to 1.85 mm-Male

KEY FEATURES

- Wideband Output, 40 to 72 GHz
- Wide Input Power Range, +13 to +20 dBm
- Low Conversion Loss, 23 dB Typ.
- Good Fundamental and Harmonic Suppression
 - F1: 38 dBc Typ.
 - F2: 35 dBc Typ.
 - F4: 35 dBc Typ.

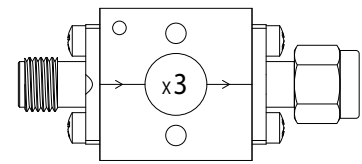


Generic photo used for illustration purposes only

APPLICATIONS

- 5G-FR2 Millimeter Wave Testing
- Aerospace & Defense
- Q-band, V-band SATCOM
- Test and Measurement Equipment

FUNCTIONAL DIAGRAM



PRODUCT OVERVIEW

Mini-Circuits' ZXF90-3-723-E+ is a wideband frequency tripler utilizing MCLs' own GaAs HBT multiplier, CY3-723-DG+, converting input frequencies from 13.33 to 24 GHz into output frequencies from 40 to 72 GHz. Its wide output range makes this model suitable for broadband systems, as well as a wide variety of narrow-band applications. This multiplier is housed in a rugged, small form factor (0.7" x 0.7" x 0.37") connectorized housing, saving space in crowded layouts.

ELECTRICAL SPECIFICATIONS¹ AT +25°C AND Z₀ = 50Ω, UNLESS NOTED OTHERWISE

Parameter	Input Frequency (GHz)	Output Frequency (GHz)	Min.	Typ.	Max.	Unit	
Multiplication Factor	-	-	3				
Frequency Range, Input (F1)	-	-	13.33	-	24	GHz	
Frequency Range, Output (F3)	-	-	40	-	72	GHz	
Input Power	-	-	+14	-	+20	dBm	
Conversion Loss (X3)	13.33 - 18	40 - 54	-	20.0	24.0	dB	
	18 - 20	54 - 60	-	22.0	26.0		
	20 - 22.33	60 - 67	-	24.0	28.5		
	22.33 - 24	67 - 72	-	27.0	32.5		
Harmonic Suppression ²	F1	13.33 - 18	13.33 - 18	-	45.0	-	dBc
		18 - 20	18 - 20	-	42.0	-	
		20 - 22.33	20 - 22.33	-	35.0	-	
		22.33 - 24	22.33 - 24	-	30.0	-	
	F2	13.33 - 18	26.66 - 36	-	44.0	-	
		18 - 20	36 - 40	-	27.0	-	
		20 - 22.33	40 - 44.66	-	25.0	-	
		22.33 - 24	44.66 - 48	-	21.0	-	
	F4	13.33 - 18	53.32 - 72	-	40.0	-	
		18 - 20	72 - 80	-	38.0	-	
		20 - 22.33	80 - 89.32	-	45.0	-	
		22.33 - 24	89.32 - 96	-	31.0	-	

1. Measured with input power at +18 dBm.

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





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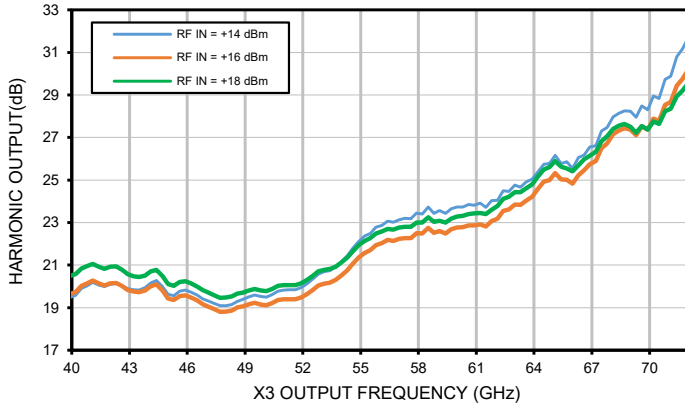
X3 Frequency Multiplier ZXF90-3-723-E+



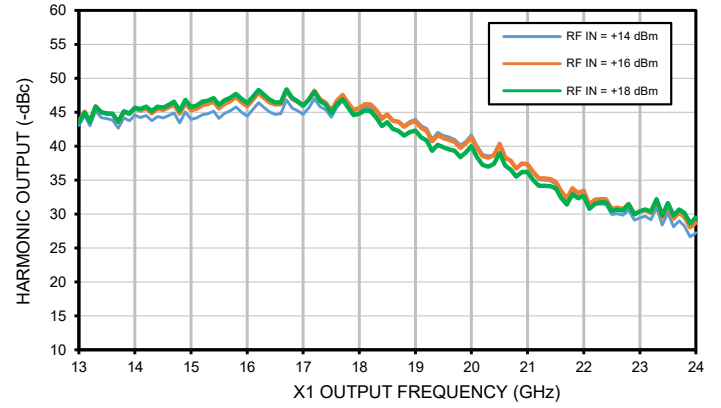
50Ω Output 40 to 72 GHz 2.92 mm-Female to 1.85 mm-Male

TYPICAL PERFORMANCE CURVES

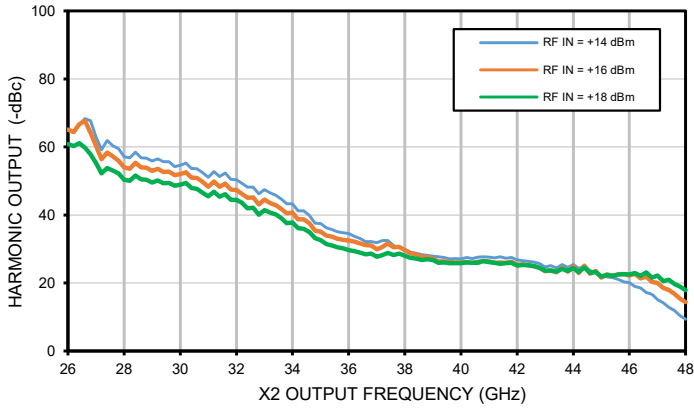
CONVERSION LOSS X3 OUTPUT



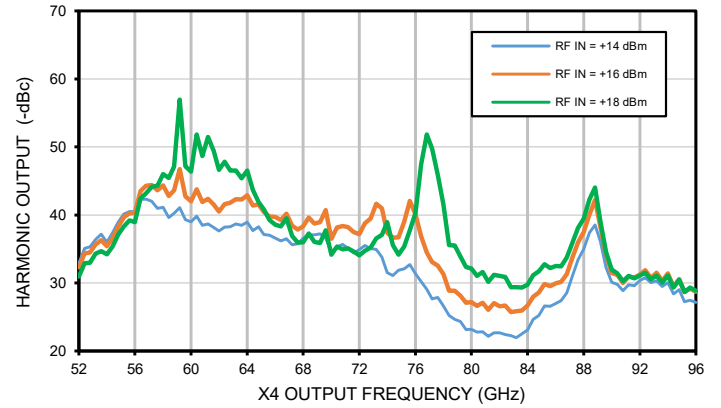
HARMONIC X1 OUTPUT



HARMONIC X2 OUTPUT



HARMONIC X4 OUTPUT





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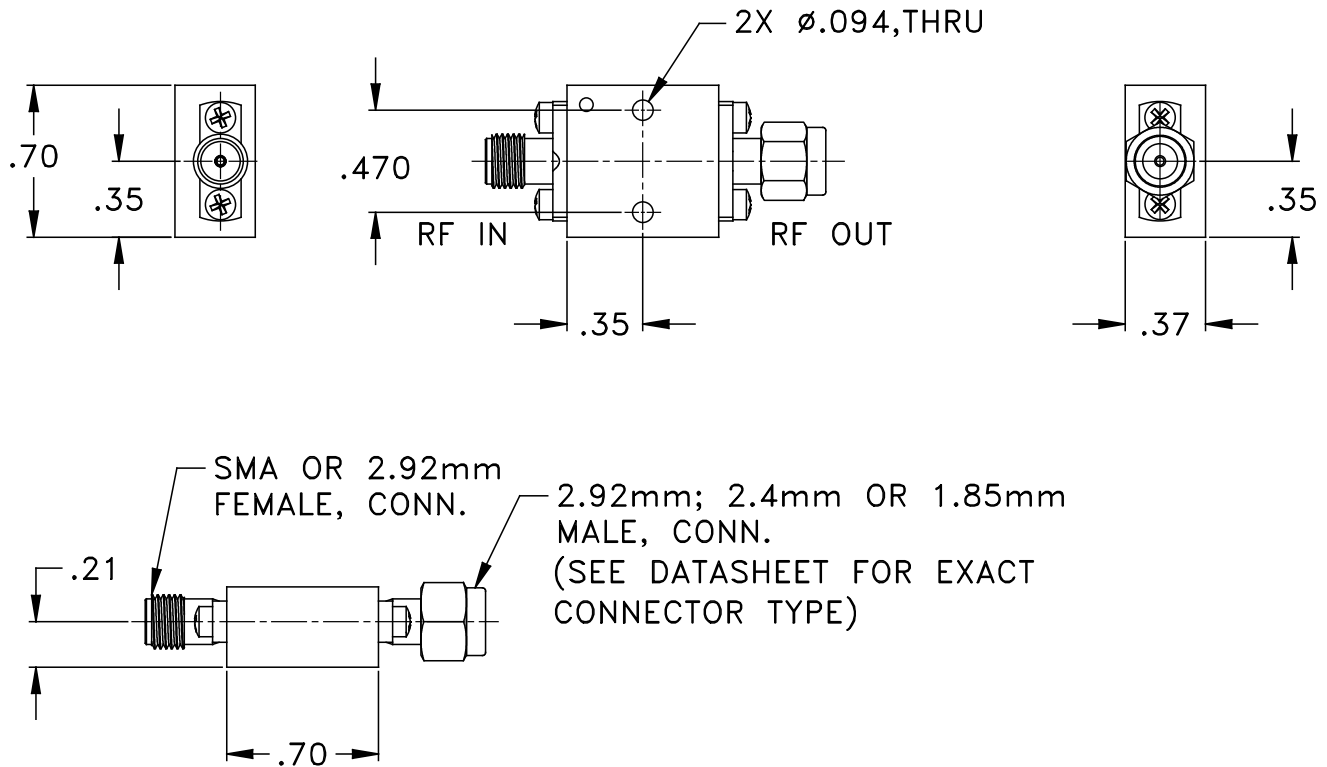
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ABSOLUTE MAXIMUM RATINGS³

Parameter	Ratings
Operating Temperature	-40°C to +85°C Baseplate
Storage Temperature	-40°C to +85°C
RF Input Power	+22 dBm

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

CASE STYLE DRAWING



Weight: 14.0 grams

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





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X3 Frequency Multiplier **ZXF90-3-723-E+**

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ADDITIONAL INFORMATION IS AVAILABLE ON OUR DASHBOARD

Performance Data & Graphs	Data
	Graphs
RoHS Status	Compliant
Environmental Ratings	ENV131
Export Information	EAR99

ORDERING INFORMATION

Model No. Links	ZXF90-3-723-E+
Product Marking	ZXF90-3-723-E+
Case Style	UK3641
Connector	2.92 mm-Female to 1.85 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

