X2 Frequency Multiplier ZXF90-2-153-K+

50Ω Output 9 to 15 GHz

The Big Deal

- Ultra-wideband, output from 9 to 15 GHz
- Wide input power range, +16 to +22 dBm
- Low conversion loss, 15 dB
- Good fundamental and harmonic suppression: F1, 48 dBc; F3, 42 dBc
- Patented, Reflectionless Filters on Input and Output absorb and terminate out-of-band signals internally.
- Reduced need for external attenuator pads that increase over all conversion loss.



CASE STYLE: UU2776

Product Overview

Mini-Circuits' ZXF90-2-153-K+ is an ultra-wideband frequency doubler, converting input frequencies from 4.5 to 7.5 GHz into output frequencies from 9 to 15 GHz. Its wide output range makes this model ideal for a wide range of broadband systems including satellite up and down converters, defense radar and communications and more. The multiplier comes housed in a rugged, 2.92mm connectorized housing (0.68 x 0.73 x 0.36"), saving space in crowded layouts.

Key Features

Feature	Advantages
Broadband, 9 to 15 GHz output	With an output frequency range spanning 9 to 15 GHz, this multiplier supports broadband applications such as defense and instrumentation as well as a wide range of narrowband system requirements.
Low conversion loss, 15 dB typ.	With a low conversion loss, ZXF90-2-153-K+ produces higher output power, reducing the need for amplification.
Excellent fundamental and harmonic suppression: • F1, 48 dBc • F3, 42 dBc • F4, 23 dBc	Reduces spurious signals and the need for additional filtering.
Wide input power range, +16 to +22 dBm	Wide input power signal range accommodates different input signal levels while still maintaining a low conversion loss.
2.92mm-F connectorized housing	Ideal for assembled systems and lab use. High frequency connector mates with 2.92mm and SMA connectors.
Small size, 0.68 x 0.73 x 0.36"	Saves space in crowded layouts.

Notes
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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.
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ZXF90-2-153-K+

50Ω Output 9 to 15 GHz



Generic photo used for illustration purposes only

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Connectors	Model
2.92 mm Female	ZXF90-2-153-K+

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Input Power, 25°C	24 dBm

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

Coaxial Connections

INPUT	1
OUTPUT	2

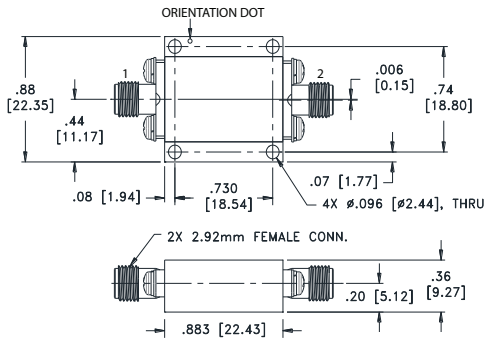
Features

- broadband
- low conversion loss, 15 dB typ.
- excellent harmonics suppression F1, 48 dBc typ F3 42 dBc typ.
- rugged construction

Applications

- synthesizers
- local oscillators
- sattelite up and down converters
- defense radar and communications
- mobile

Outline Drawing



Weight: 35 grams
Dimensions are in inches [mm]

Electrical Specifications

Parameter		Min.	Typ.	Max.	Unit
Multiplier Factor			2		
Frequency Range, Input (F1)		4.5	—	7.5	GHz
Frequency Range, Output (F2)		9	—	15	GHz
Input Power		16	—	22	dBm
Conversion Loss		—	15	22	dB
Harmonic Ouput*, dBc	F1	—	48	—	dBc
	F3	—	42	—	
	F4	—	23	—	

* Harmonics of input frequency below the power level of F2

Typical Performance Data

	INPUT RF= 16 dBm				INPUT RF= 22 dBm			
Input Frequency (GHz)	Conversion Loss (dB)	Harmonic Output Below F2 (-dBc)			Conversion Loss (dB)	Harmonic Output Below F2 (-dBc)		
		F1	F3	F4		F1	F3	F4
4500	15.45	64.55	45.66	20.14	17.36	70.97	33.84	21.46
4600	15.00	60.07	45.58	21.43	16.63	66.38	40.19	22.07
4700	15.31	56.22	45.01	22.68	16.67	58.72	42.15	23.10
4800	15.41	53.64	44.21	24.71	16.84	55.17	41.40	24.70
4900	14.74	52.38	43.80	28.43	16.30	53.16	41.63	27.95
5000	14.29	51.24	44.01	31.29	15.81	51.87	41.13	30.61
5100	14.31	50.01	42.97	31.66	15.58	50.82	41.65	30.82
5200	15.47	48.14	41.30	28.30	16.54	48.86	41.62	27.09
5300	15.01	48.33	42.31	26.71	15.97	48.67	44.04	24.80
5400	14.45	48.79	43.12	25.40	15.30	48.95	47.36	22.87
5600	14.98	48.43	45.69	22.34	15.66	48.02	53.19	20.07
5800	14.99	49.25	47.65	21.27	15.05	48.93	51.63	20.44
6000	15.54	49.00	49.63	17.90	14.96	50.44	48.84	21.87
6200	15.86	49.62	52.37	16.69	15.53	52.19	52.03	19.37
6400	16.47	51.59	49.07	18.37	16.32	54.88	60.49	19.90
6600	16.32	55.10	48.93	21.01	15.93	59.54	60.10	22.22
6800	16.94	59.72	46.56	25.47	16.56	66.45	50.21	24.59
7000	17.81	52.40	43.84	32.17	16.40	60.54	45.82	26.63
7200	18.55	44.82	40.23	37.06	17.16	52.37	40.58	27.78
7400	18.72	39.76	38.51	43.43	17.52	45.43	37.84	35.09
7500	19.06	37.47	41.62	41.62	17.95	42.30	36.36	34.80

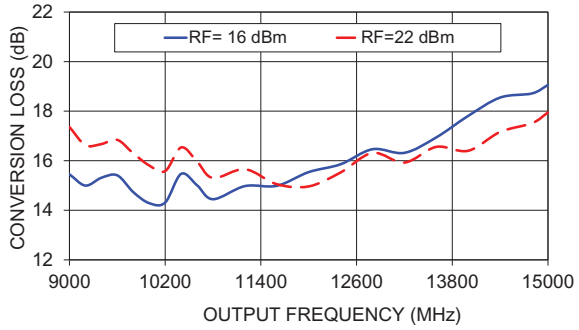
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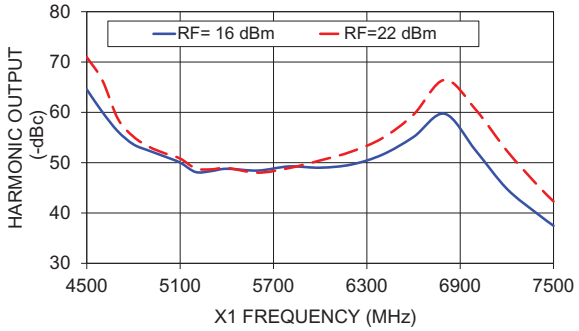
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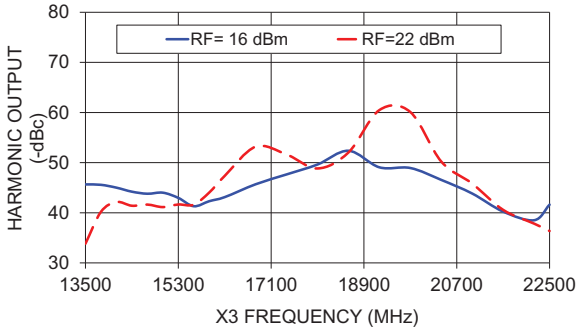
ZXF90-2-153-K+
CONVERSION LOSS



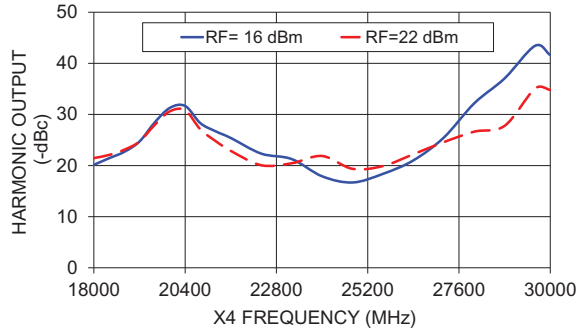
ZXF90-2-153-K+
HARMONIC OUTPUT X1



ZXF90-2-153-K+
HARMONIC OUTPUT X3



ZXF90-2-153-K+
HARMONIC OUTPUT X4



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