

# X2 Frequency Multiplier

50Ω Output 20 to 1000 MHz

## ZX90-2-13+



CASE STYLE: JA1242

Connectors	Model	Price	Qty.
SMA	ZX90-2-13-S+	\$35.95 ea.	(1-9)

**+ RoHS compliant in accordance with EU Directive (2002/95/EC)**

The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

### Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Input Power, 25°C	23 dBm

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

### Coaxial Connections

INPUT	1
OUTPUT	2

### Features

- broadband
- low conversion loss, 11 dB typ.
- rugged construction
- protected by US Patent 6,790,049

### Applications

- synthesizers
- local oscillators

### Electrical Specifications

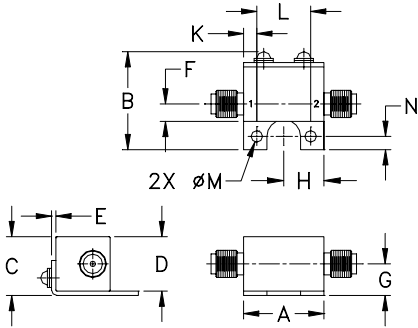
MULTIPLICATION FACTOR	FREQUENCY (MHz)		INPUT POWER (dBm)		CONVERSION LOSS (dB)	*HARMONIC OUTPUT (dBC)						
	F1	F2	Min.	Max.		F1	F3	F4				
	Input	Output			Typ.	Min.	Typ.	Min.	Typ.	Min.		
2	10-500	20-1000	4	10	11.0	14.5	45	21	45	25	21	12

\* Harmonics of input frequency below the power level of F2

### Typical Performance Data

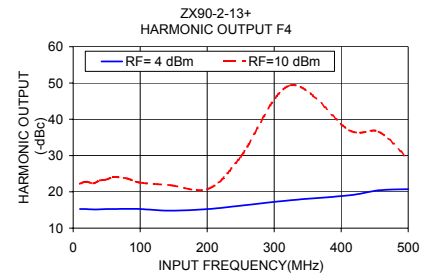
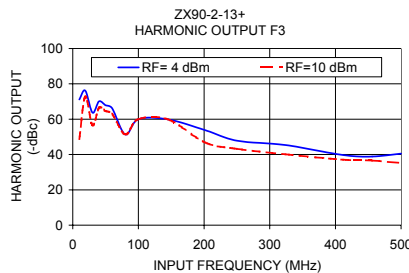
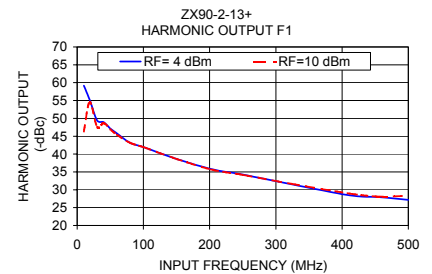
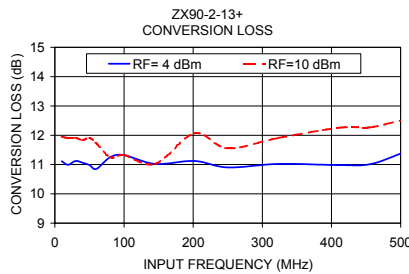
Input Frequency (MHz)	INPUT RF=4dBm					INPUT RF=10 dBm				
	Conversion Loss (dB)	Harmonic Output Below F2 (-dBc)			Conversion Loss (dB)	Harmonic Output Below F2 (-dBc)				
		F1	F3	F4		F1	F3	F4		
10.00	11.11	59.15	71.19	15.25	11.95	46.31	48.75	22.22		
19.00	10.99	55.21	76.15	15.28	11.90	54.53	72.71	22.84		
30.00	11.12	49.42	63.71	15.14	11.91	47.59	56.55	22.33		
40.00	11.06	48.92	70.05	15.18	11.83	48.64	66.36	23.15		
50.00	10.98	47.15	67.89	15.27	11.91	46.95	64.56	23.38		
60.00	10.85	45.80	66.24	15.26	11.72	45.41	63.06	24.02		
80.00	11.25	43.16	51.34	15.29	11.25	43.16	51.34	23.72		
100.00	11.32	41.98	60.02	15.28	11.32	41.98	60.02	22.55		
145.00	11.02	38.96	59.93	14.81	11.02	38.96	59.93	21.84		
202.00	11.12	35.80	53.75	15.27	12.07	35.68	46.78	20.87		
250.00	10.90	34.28	47.86	16.20	11.55	34.18	43.20	29.69		
324.00	11.02	31.54	45.33	17.68	11.91	31.64	40.13	49.34		
412.00	10.98	28.44	39.69	19.06	12.26	28.93	37.04	36.98		
456.00	11.01	27.96	38.89	20.42	12.27	28.12	36.56	36.58		
500.00	11.37	27.17	40.48	20.75	12.51	28.32	35.15	29.11		

### Outline Drawing



### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.74	.90	.54	.50	.04	.16	.29
18.80	22.86	13.72	12.70	1.02	4.06	7.37
H	J	K	L	M	N	wt
.37	--	.122	.496	.106	.122	grams
9.40	--	3.10	12.60	2.69	3.10	19.0



### Notes

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