X2 Frequency Multiplier

50Ω Output 10 to 20 GHz

ZX90-2-24-S+

Generic photo used for illustration purposes only

CASE STYLE: JA1242

Connectors	Model
SMA	ZX90-2-24-S+

+RoHS Compliant

The +Suffix identifies 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	20 dBm

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

Coaxial Connections

INPUT	2
OUTPUT	1

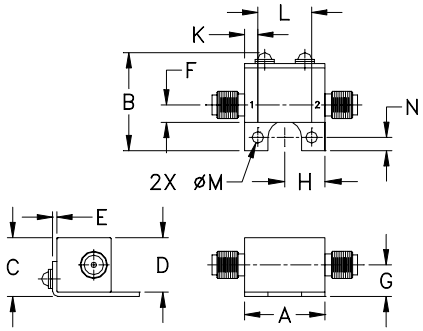
Features

- broadband
- low conversion loss, 12 dB typ.
- rugged construction
- protected by US Patent 6,790,049

Applications

- synthesizers
- local oscillators

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

Electrical Specifications

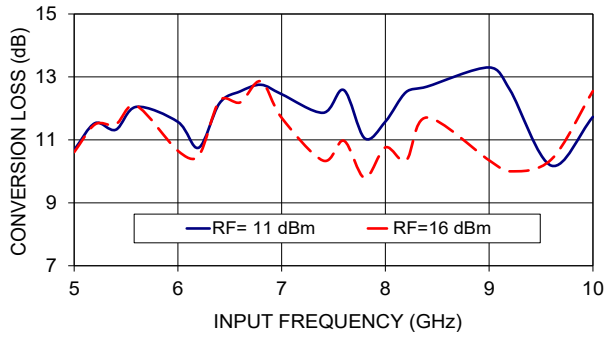
Parameter		Min.	Typ.	Max.	Unit
Multiplier Factor			2		
Frequency Range, Input (F1)			5 - 10		GHz
Frequency Range, Output (F2)			10 - 20		GHz
Input Power		11	—	16	dBm
Conversion Loss		—	12	19.5	dB
Harmonic Ouput*, dBc	F1	—	30	—	dBc
	F3	—	30	—	
	F4	—	30	—	

* Harmonics of input frequency below the power level of F2

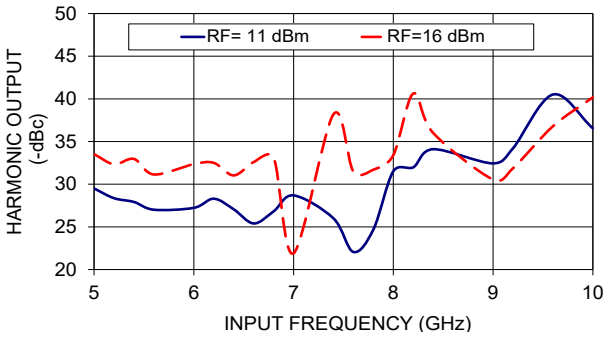
Typical Performance Data

	INPUT RF= 11 dBm				INPUT RF= 16 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
5.0	10.68	29.50	42.43	21.20	10.61	33.52	51.13	22.90
5.2	11.53	28.36	39.91	20.82	11.49	32.34	37.95	32.54
5.4	11.32	27.92	26.46	21.16	11.49	32.96	28.75	23.90
5.6	12.05	27.01	35.64	21.59	12.08	31.14	29.77	22.12
6.0	11.57	27.23	31.92	25.64	10.65	32.35	39.24	38.26
6.2	10.75	28.30	33.05	21.11	10.49	32.50	34.97	32.96
6.4	12.16	27.06	32.74	22.03	12.24	31.03	34.82	25.19
6.6	12.54	25.40	32.23	25.33	12.19	32.59	31.62	25.78
6.8	12.75	26.82	32.88	36.47	12.86	33.12	37.78	32.73
7.0	12.45	28.69	40.72	38.23	11.70	21.90	21.46	35.32
7.4	11.86	26.00	43.16	57.24	10.34	38.19	35.85	38.51
7.6	12.58	22.06	37.13	44.45	10.97	31.47	50.63	40.65
7.8	11.05	24.69	45.87	47.76	9.79	31.70	42.08	45.51
8.0	11.58	31.52	34.86	39.42	10.76	33.40	28.26	42.25
8.2	12.52	31.98	27.54	52.59	10.35	40.62	31.53	48.38
8.4	12.69	34.10	33.21	45.99	11.71	36.00	39.80	49.78
9.0	13.30	32.44	35.36	50.54	10.35	30.55	44.69	48.19
9.2	12.59	34.21	41.28	48.38	10.00	31.87	50.37	44.83
9.6	10.18	40.51	42.43	59.32	10.38	36.79	37.39	64.90
10.0	11.73	36.56	31.54	44.80	12.55	40.17	25.93	44.76

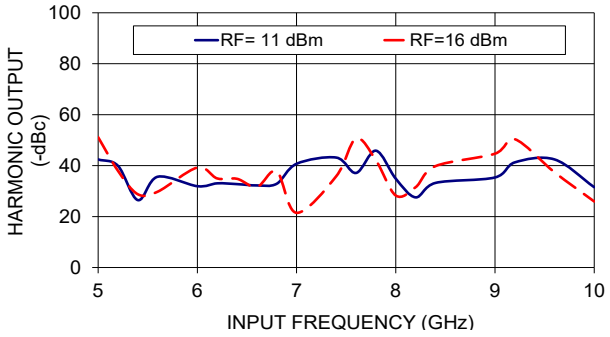
ZX90-2-24-S+
CONVERSION LOSS



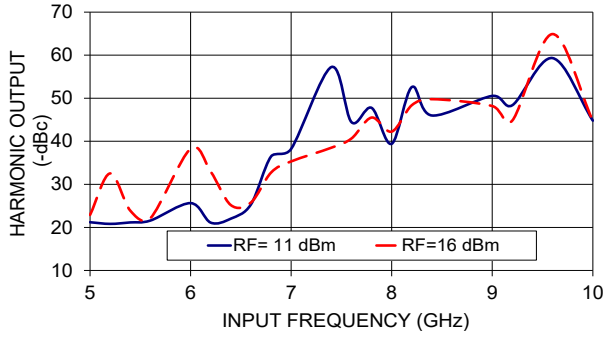
ZX90-2-24-S+
HARMONIC OUTPUT F1



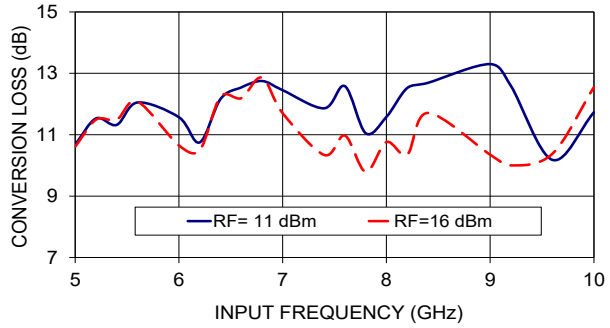
ZX90-2-24-S+
HARMONIC OUTPUT F3



ZX90-2-24-S+
HARMONIC OUTPUT F4



ZX90-2-24-S+
CONVERSION LOSS



ZX90-2-24-S+
CONVERSION LOSS