

X2 Frequency Multiplier

50Ω Output 2600 to 7200 MHz

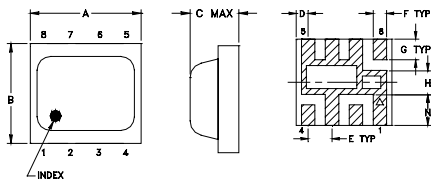
Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Input, 25°C	100 mW

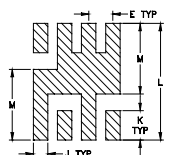
Pin Connections

INPUT	4
OUTPUT	8
50Ω TERMINATE EXT.	2
GROUND	1,3,5,6,7

Outline Drawing



PCB Land Pattern

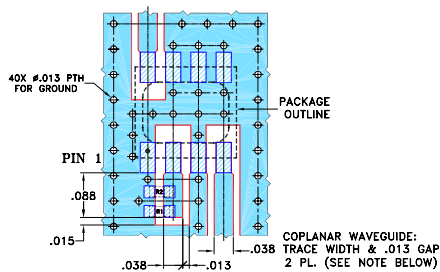


Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch)

A	B	C	D	E	F	G
.200	.180	.087	.025	.050	.028	.043
5.08	4.57	2.21	0.64	1.27	0.71	1.09
H	J	K	L	M	N	wt
.050	.030	.060	0.238	0.144	0.065	grams
1.27	0.76	1.52	6.05	3.66	1.65	0.08

Demo Board MCL P/N: TB-473+ Suggested PCB Layout (PL-287)



RESISTORS R1, R2: 100 Ohm, 0402 SIZE

- NOTES: 1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Features

- low conversion loss, 11.5 dB typ.
- high fundamental & harmonic suppression, F1, 22 dBc typ.; F3, 28 dBc typ.; F4, 24 dBc typ.
- LTCC design
- low profile, 0.085"
- aqueous washable

Applications

- synthesizers
- local oscillators

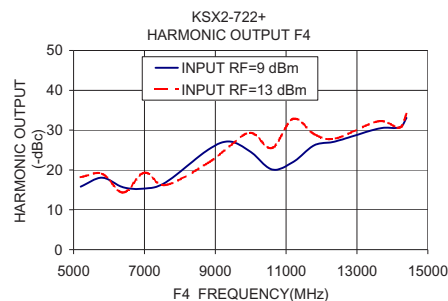
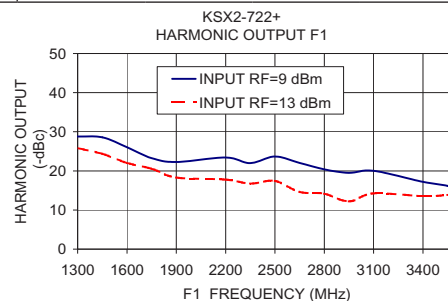
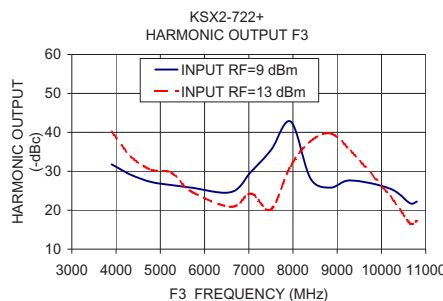
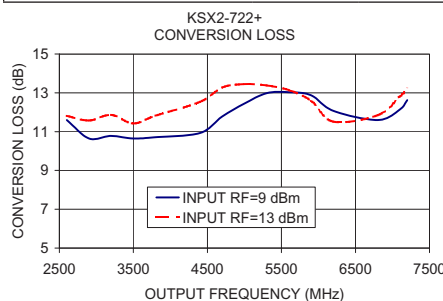
Electrical Specifications

MULTIPLICATION FACTOR	FREQUENCY (MHz)		INPUT POWER (dBm)		CONVERSION LOSS (dB)		*HARMONIC OUTPUT (dBc)					
	F1	F2					F1		F3		F4	
	Input	Output	Min.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.
2	1300-2200	2600-4400	9	13	11.5	14.5	22	14	28	16	17	11
	2200-3600	4400-7200	9	13	13	15.5	18	9	28	13	28	16

* Harmonics of input frequency below the power level of F2

Typical Performance Data

Input Frequency (MHz)	INPUT RF= 9 dBm				INPUT RF= 13 dBm			
	Conversion Loss (dB)	Harmonic Output Below F2 (-dBc)			Conversion Loss (dB)	Harmonic Output Below F2 (-dBc)		
	F2	F1	F3	F4	F2	F1	F3	F4
1300.00	11.60	28.79	31.75	15.79	11.81	25.85	40.12	18.18
1450.00	10.65	28.58	29.01	18.05	11.57	24.37	33.64	19.07
1600.00	10.78	26.04	27.23	15.64	11.86	22.04	30.35	14.31
1750.00	10.65	23.24	26.46	15.33	11.42	20.54	29.65	19.36
1900.00	10.71	22.28	25.82	16.84	11.82	18.30	24.83	16.21
2200.00	10.93	23.43	24.65	25.09	12.53	17.76	20.86	21.81
2350.00	11.78	21.99	29.88	27.14	13.27	16.75	24.30	25.89
2500.00	12.45	23.65	35.38	24.52	13.45	17.44	20.16	29.37
2650.00	12.98	22.02	42.75	20.13	13.38	14.61	31.38	25.50
2800.00	13.03	20.38	28.07	22.02	13.14	14.15	37.74	32.87
2950.00	12.87	19.51	25.80	26.24	12.59	12.22	39.70	28.96
3100.00	12.07	20.01	27.64	27.21	11.51	14.25	35.27	27.92
3400.00	11.60	17.20	25.52	30.37	11.85	13.55	23.54	32.22
3550.00	12.14	16.18	21.76	30.70	12.81	13.84	16.60	30.62
3600.00	12.62	14.99	22.23	33.08	13.20	14.15	17.28	34.13



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-Circuits' applicable established test performance criteria and measurement instructions.
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KSX2-722+



CASE STYLE: HV1195

+RoHS Compliant

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