

# X2 Frequency Multiplier

## KSX2-722+

50Ω Output 2600 to 7200 MHz



Generic photo used for illustration purposes only

CASE STYLE: HV1195

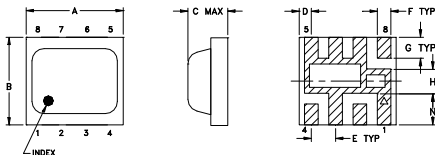
### Maximum Ratings

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

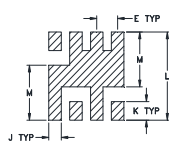
### Pin Connections

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

### Outline Drawing



PCB Metal Land Pattern

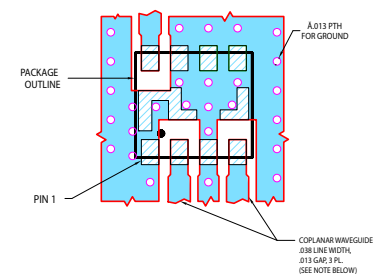


Suggested Layout, Tolerance to be within .002

### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	K	L	M	N	wt
.200	.180	.087	.025	.050	.028	.043	.050	.030	.043	.204	.127	0.065	grams
5.08	4.57	2.2098	0.64	1.27	0.71	1.09	1.27	0.76	1.09	5.18	3.23	1.65	0.08

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



#### NOTES:

- TRACE WIDTH AND GAP ARE SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .0071(.0017) COPPER: 1% OZ EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
- BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT WITH SMOBC GOLDEN 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

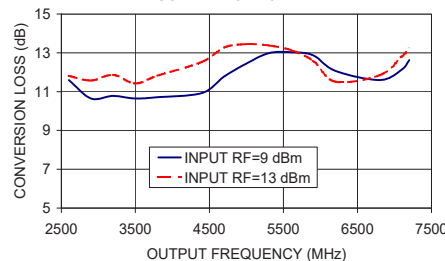
MULTIPLICATION FACTOR	FREQUENCY (MHz)		INPUT POWER (dBm)		CONVERSION LOSS (dB)		*HARMONIC OUTPUT (dBc)					
	F1	F2					F1		F4			
	Input	Output	Min.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.		
2	1300-2200	2600-4400	9	13	11.5	14.5	22	14	28	16	17	11
	2200-3600	4400-7200	9	13	13	15.5	18	9	28	13	28	16

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

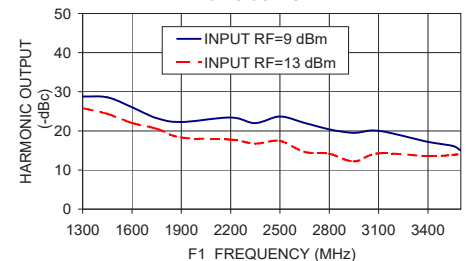
### Typical Performance Data

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		

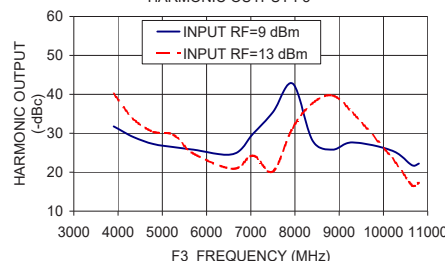
KSX2-722+ CONVERSION LOSS



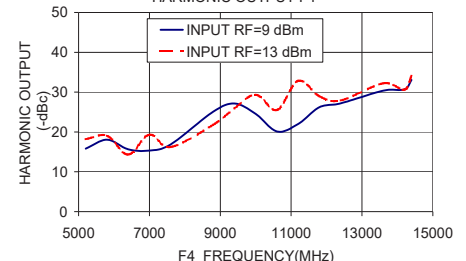
KSX2-722+ HARMONIC OUTPUT F1



KSX2-722+ HARMONIC OUTPUT F3



KSX2-722+ HARMONIC OUTPUT F4



#### Notes

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