



**THE DATASHEET OF
KSX2-24+**



X2 Frequency Multiplier

50Ω Output 10 to 20 GHz

KSX2-24+



Generic photo used for illustration purposes only

CASE STYLE: HV1195

+RoHS Compliant

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

Maximum Ratings

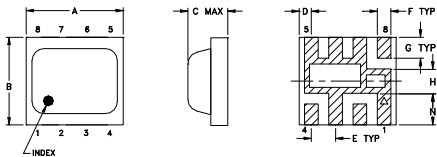
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Input, 25°C	100 mW

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

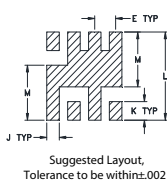
Pin Connections

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

Outline Drawing



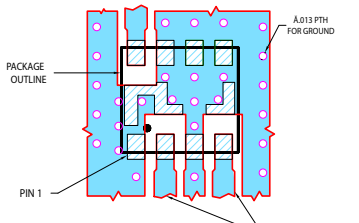
PCB Metal Land Pattern



Outline Dimensions (inch)

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 RO4358B WITH DIELECTRIC THICKNESS .020"/.0015". COPPER: 1/2 OZ EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
 - BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
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Features

- low conversion loss, 11.5 dB typ.
- high fundamental & harmonic suppression, F1, 30 dBc typ.; F3, 35 dBc typ.; F4, 25 dBc typ.
- LTCC design
- low profile, 0.085"
- aqueous washable

Applications

- synthesizers
- local oscillators

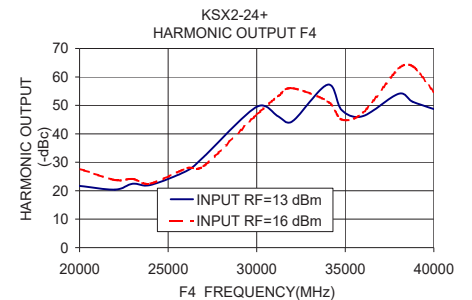
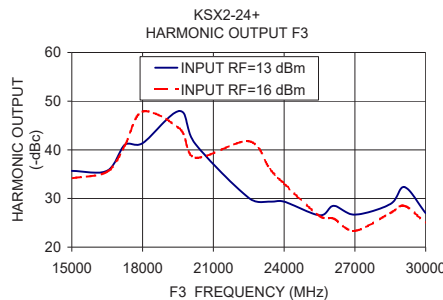
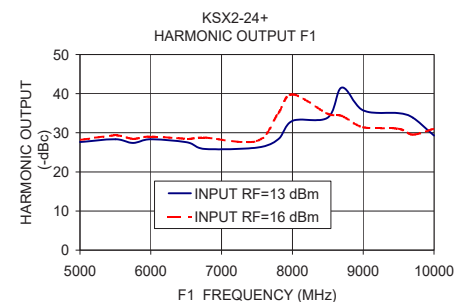
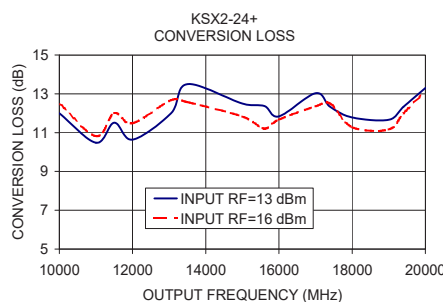
Electrical Specifications

MULTIPLICATION FACTOR	FREQUENCY (GHz)		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	5 - 8	10 - 16	13	16	11.5	15	30	18	35	23	25	15	
			10	13	15	18	21	14	30	18	20	13	
	8 - 10	16 - 20	13	16	12	15	33	20	27	17	50	35	
				10	13	15	18.5	30	16	23	16	40	30

* Harmonics of input frequency below the power level of F2

Typical Performance Data

Input Frequency (MHz)	INPUT RF= 13dBm				INPUT RF= 16dBm			
	Conversion Loss (dB)	Harmonic Output Below F2 (-dBc)			Conversion Loss (dB)	Harmonic Output Below F2 (-dBc)		
	F2	F1	F3	F4	F2	F1	F3	F4
5000.00	12.00	27.66	35.68	21.67	12.50	28.16	34.16	27.66
5500.00	10.48	28.33	35.69	20.40	10.81	29.34	35.52	23.74
5750.00	11.51	27.39	41.04	22.47	12.01	28.45	40.87	24.16
6000.00	10.64	28.35	41.35	22.02	11.48	29.02	47.85	22.52
6525.00	12.00	27.53	47.97	27.17	12.67	28.45	44.30	28.00
6750.00	13.50	25.87	41.12	31.83	12.57	28.77	38.39	28.54
7500.00	12.50	26.19	30.10	49.49	11.83	27.87	41.77	46.76
7800.00	12.37	28.34	29.35	46.17	11.21	34.97	36.01	53.17
8000.00	11.84	33.06	29.35	44.32	11.67	39.81	33.03	56.06
8500.00	13.03	33.87	26.54	57.26	12.36	34.83	26.38	51.43
8700.00	12.33	41.57	28.51	48.32	12.50	34.33	25.85	44.99
9000.00	11.78	35.72	26.68	46.24	11.28	31.39	23.35	47.40
9500.00	11.66	35.01	28.85	54.08	11.16	31.02	27.02	62.92
9700.00	12.33	33.85	32.33	51.30	12.00	29.51	28.50	63.80
10000.00	13.30	29.27	26.97	48.71	13.13	31.03	24.97	54.71



Notes

- 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.
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