

X2 Frequency Multiplier

50Ω Output 1000 to 2200 MHz

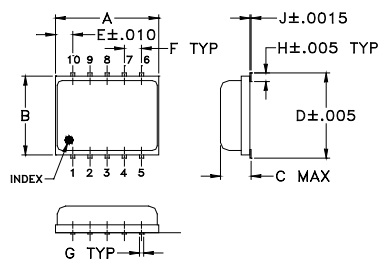
Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Input, 25°C	200mW
Permanent damage may occur if any of these limits are exceeded.	

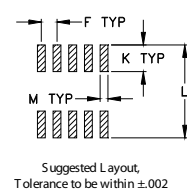
Pin Connections

INPUT	10
OUTPUT	5
50Ω TERMINATE EXT.	3
GROUND	1,2,4,6,7,8,9

Outline Drawing



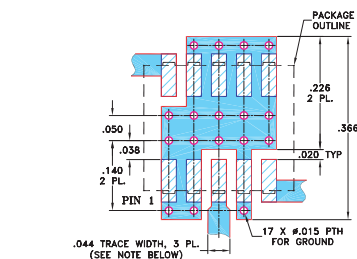
PCB Land Pattern



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.30	.250	.085	.266	.050	.050	.012
7.62	6.35	2.16	6.76	1.27	1.27	0.30
H	J	K	L	M		wt
.029	.004	.085	.296	.030		grams
0.74	0.10	2.16	7.52	0.76		0.25

Demo Board MCL P/N: TB-144 Suggested PCB Layout (PL-045)



- NOTES: 1. TRACE WIDTH IS 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.
3. DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
4. DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

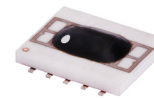
Features

- low conversion loss, 10.5 dB typ.
- LTCC design
- low profile, 0.085\"
- low cost

Applications

- synthesizers
- local oscillators

KC2-11+



Generic photo used for illustration purposes only

CASE STYLE: DZ885

+RoHS Compliant

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

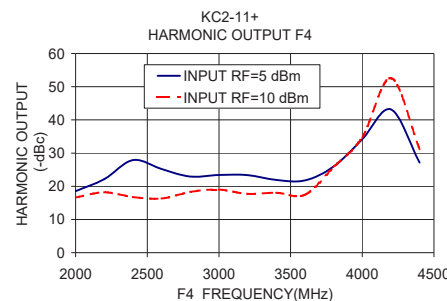
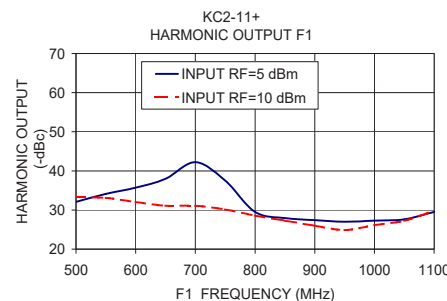
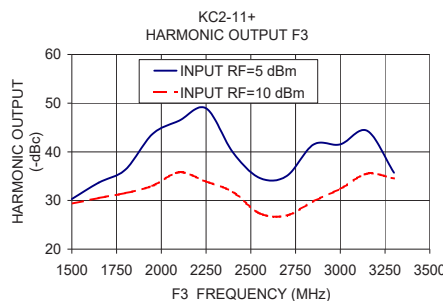
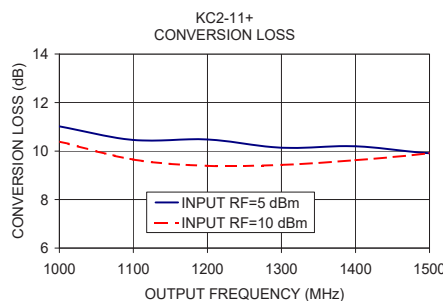
Electrical Specifications

MULTIPLICATION FACTOR	FREQUENCY (MHz)		INPUT POWER (dBm)		CONVERSION LOSS (dB)		*HARMONIC OUTPUT (dBc)					
	F1 Input	F2 Output	Min.	Max.	Typ.	Max.	F1 Typ.	F1 Min.	F3 Typ.	F3 Min.	F4 Typ.	F4 Min.
2	500-1100	1000-2200	5	10	10.5	13.5	27	18	34	20	21	12
	550-750	1100-1500	5	10	10.0	13.5	30	21	34	21	21	12

* Harmonics of input frequency below the power level of F2

Typical Performance Data

INPUT RF= 5 dBm					INPUT RF= 10 dBm				
Input Frequency (MHz)	Conversion Loss (dB)	Harmonic Output Below F2 (-dBc)			Conversion Loss (dB)	Harmonic Output Below F2 (-dBc)			
	F2	F1	F3	F4		F2	F1	F3	F4
500.00	11.02	32.07	30.29	18.52	10.39	10.39	33.22	29.34	16.59
550.00	10.46	34.11	33.67	22.15		9.65	33.10	30.50	18.18
600.00	10.48	35.71	36.35	27.92		9.39	32.02	31.53	16.77
650.00	10.14	37.99	43.65	25.22		9.43	31.11	33.01	16.33
700.00	10.20	42.23	46.39	22.94		9.62	31.08	35.78	18.30
750.00	9.91	37.54	48.95	23.42		9.91	30.15	33.90	19.01
800.00	9.83	29.48	39.88	23.38		10.35	28.56	31.75	17.73
850.00	9.96	27.93	34.61	21.93		11.04	27.29	27.33	18.07
900.00	10.27	27.40	35.02	21.75		11.29	25.98	26.91	17.41
950.00	10.02	26.99	41.50	25.97		10.69	24.88	29.84	25.84
1000.00	10.21	27.27	41.54	34.18	10.38	26.16	32.38	34.74	
1050.00	11.02	27.61	44.32	43.17	11.15	27.23	35.50	52.58	
1100.00	12.37	29.48	35.70	27.14	12.06	29.84	34.52	31.25	



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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