

X2 Frequency Multiplier

50Ω Output 20 to 1000 MHz

AMK-2-13+



CASE STYLE: CD542

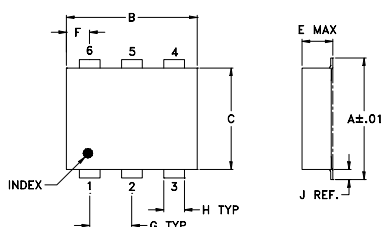
Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Input Power	23 dBm
Permanent damage may occur if any of these limits are exceeded.	

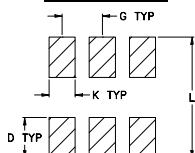
Pin Connections

INPUT	3
OUTPUT	6
GROUND	1,4,5
NOT USED	2

Outline Drawing



PCB Land Pattern



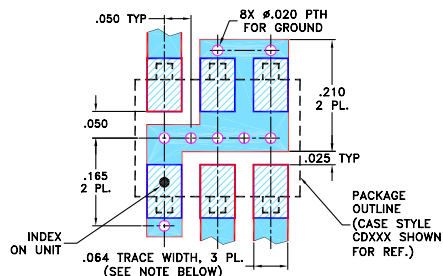
Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.272	.310	.220	.100	.112	.055	.100
6.91	7.87	5.59	2.54	2.84	1.40	2.54

H	J	K	L	wt
.030	.026	.065	.300	grams
0.76	0.66	1.65	7.62	0.20

Demo Board MCL P/N: TB-03 Suggested PCB Layout (PL-052)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002"; 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

- broadband
- low conversion loss, 11.4 dB typ.
- high rejection F1 and F3, -45 dBc typ.
- low cost
- aqueous washable

Applications

- synthesizers
- local oscillators
- satellite up and down converters

+RoHS Compliant

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



Available Tape and Reel
at no extra cost

Reel Size	Devices/Reel
7"	10, 20, 50, 100, 200, 500
13"	500, 1000

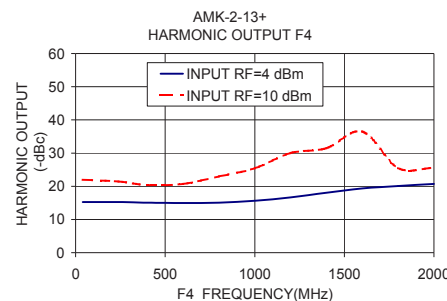
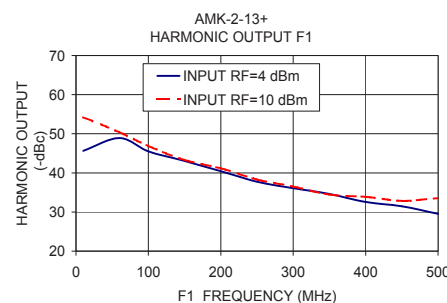
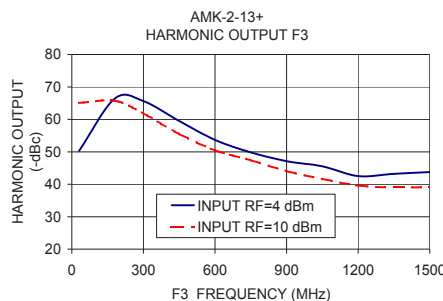
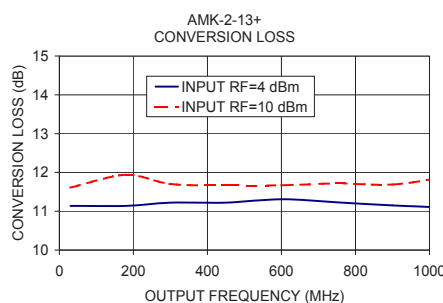
Electrical Specifications

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	10-500	20-1000	4	10	11.4	14.5	45	20	45	25	22	12

* Harmonics of input frequency below the power level of F2

Typical Performance Data

Input Frequency (MHz)	INPUT RF= 4 dBm				INPUT RF= 10 dBm			
	Conversion Loss (dB) F2	F1 (-dBc)	F3 (-dBc)	F4 (-dBc)	Conversion Loss (dB) F2	F1 (-dBc)	F3 (-dBc)	F4 (-dBc)
10.00	11.14	45.65	50.28	15.24	11.61	54.24	65.09	21.97
60.00	11.14	48.90	66.44	15.25	11.94	50.38	65.74	21.45
100.00	11.22	45.52	65.65	15.06	11.70	46.86	61.85	20.36
150.00	11.22	43.05	59.50	14.95	11.67	43.30	55.49	20.72
200.00	11.31	40.43	53.67	15.06	11.67	41.16	50.45	22.99
250.00	11.23	37.72	49.84	15.65	11.72	38.29	47.40	25.43
300.00	11.15	36.08	47.09	16.63	11.69	36.49	44.07	30.03
350.00	11.09	34.61	45.52	18.06	11.88	34.46	41.61	31.49
400.00	10.99	32.56	42.50	19.34	11.97	33.87	39.61	36.48
450.00	11.16	31.45	43.20	20.09	12.21	32.85	39.01	25.48
500.00	11.41	29.56	43.75	20.71	12.72	33.56	39.13	25.56



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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