

# Surface Mount Frequency Mixer

## RMS-2+

Level 7 (LO Power +7 dBm) 5 to 1000 MHz



CASE STYLE: TT240

### Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	200mW
IF Current	40mA
Permanent damage may occur if any of these limits are exceeded.	

### Pin Connections

LO	1
RF	4
IF	5
GROUND	2,3,6

### Features

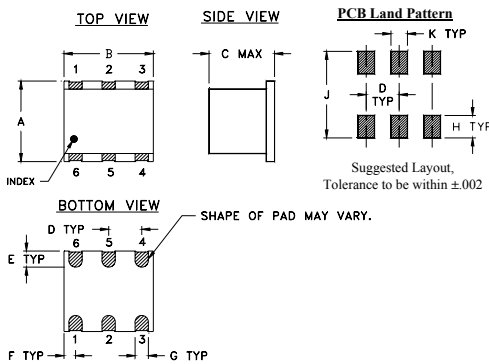
- excellent L-R isolation, 40 dB typ.
- conversion loss, 6.67 dB typ.
- small size, 0.25"x0.31"x0.2"

### Applications

- cellular
- GSM
- ISM

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

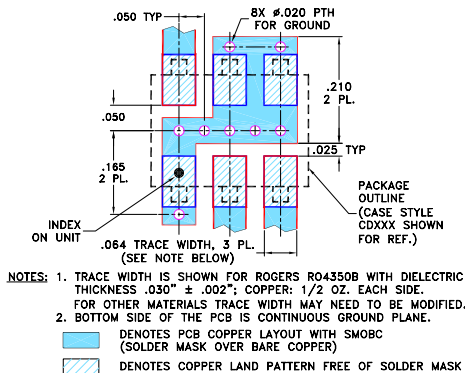
### Outline Drawing



### Outline Dimensions (inch/mm)

A	B	C	D	E	F
.250	.31	.20	.100	.050	.055
6.35	7.87	5.08	2.54	1.27	1.40
G	H	J	K	wt	
.040	.070	.270	.050	grams	
1.02	1.78	6.86	1.27	0.50	

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



### 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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### Electrical Specifications

FREQUENCY (MHz)	CONVERSION LOSS (dB)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)			IP3 at center band (dBm)
		L	M	U	L	M	U	
f <sub>L</sub> -f <sub>U</sub>	$\bar{X}$ $\sigma$ Max.	Typ. Min.	Typ. Min.	Typ. Min.	Typ. Min.	Typ. Min.	Typ.	
5-1000 DC-1000	6.67 .26 8.0 9.5	60 40	40 20	25 18	55 30	30 20	20 12	17

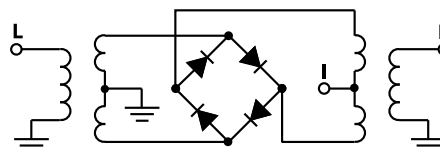
1 dB COMP: +1 dBm typ.  
For phase detection, DC output positive with in-phase RF & LO.

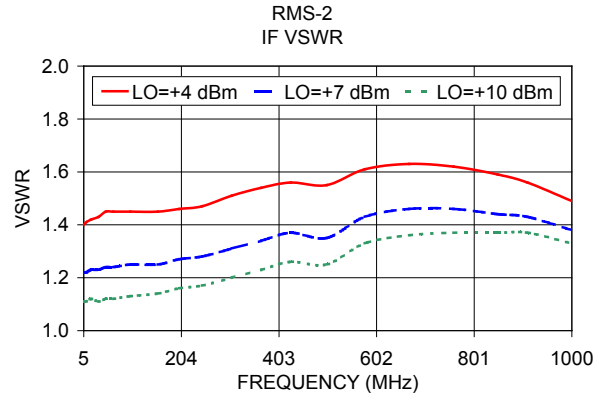
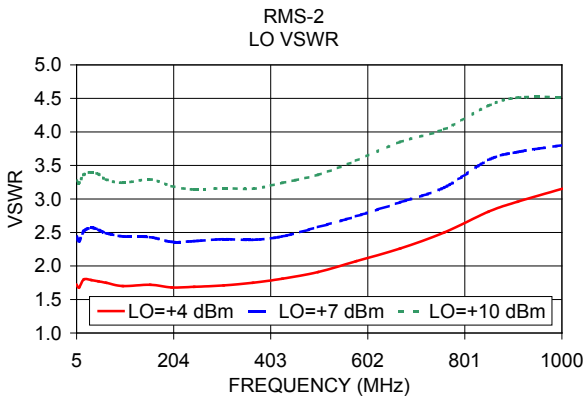
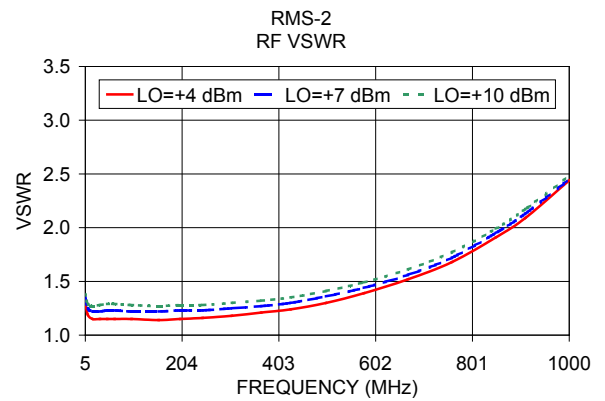
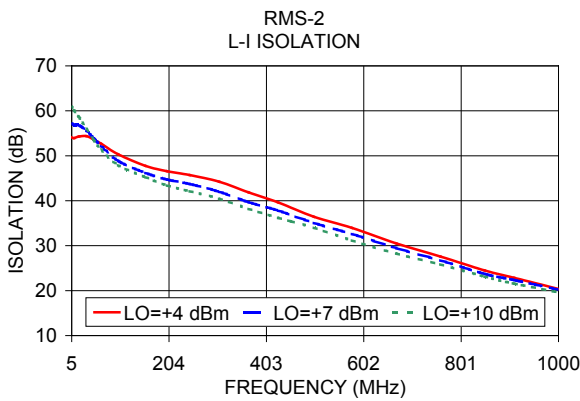
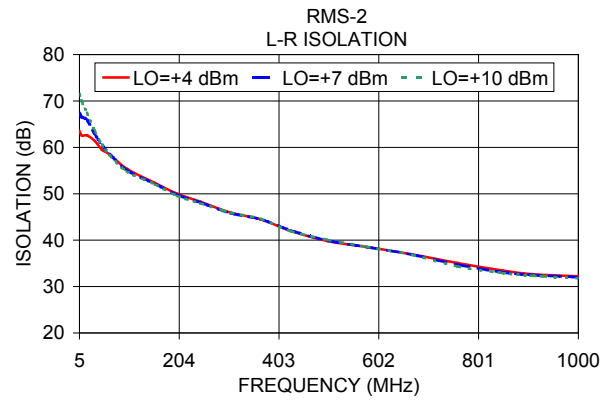
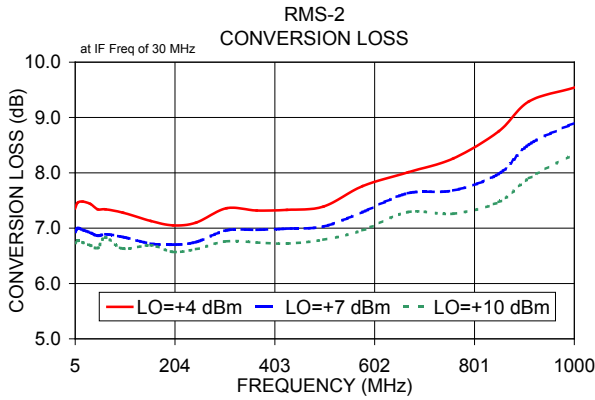
L = low range [f<sub>L</sub> to 10 f<sub>L</sub>] M = mid range [10 f<sub>L</sub> to f<sub>U</sub>/2] U = upper range [f<sub>U</sub>/2 to f<sub>U</sub>]  
m = mid band [2f<sub>L</sub> to f<sub>U</sub>/2]

### Typical Performance Data

Frequency (MHz)		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
RF	LO	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm
5.00	35.00	6.93	67.42	57.23	1.35	2.44
10.00	40.00	7.00	66.49	56.87	1.25	2.37
20.00	50.00	6.97	65.94	56.78	1.22	2.52
35.15	65.15	6.92	62.92	55.59	1.22	2.57
50.00	80.00	6.86	60.51	53.87	1.23	2.54
65.30	95.30	6.89	58.52	52.15	1.23	2.49
100.00	70.00	6.84	55.07	48.85	1.22	2.44
155.76	125.76	6.72	52.10	46.19	1.22	2.43
200.00	170.00	6.70	49.75	44.71	1.23	2.36
246.21	216.21	6.75	48.10	43.71	1.23	2.37
306.52	276.52	6.96	45.81	41.99	1.25	2.40
366.82	336.82	6.97	44.49	39.66	1.27	2.39
427.12	397.12	6.99	42.09	37.81	1.30	2.44
500.00	470.00	7.03	39.89	35.06	1.36	2.58
577.88	547.88	7.29	38.51	32.59	1.44	2.74
668.33	638.33	7.63	36.87	29.46	1.56	2.95
758.79	728.79	7.68	34.71	26.72	1.72	3.17
849.24	819.24	7.98	33.07	23.71	1.95	3.58
909.55	879.55	8.51	32.47	22.35	2.13	3.70
1000.00	970.00	8.90	32.02	20.21	2.45	3.80

### Electrical Schematic





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