

# Surface Mount Frequency Mixer

## RMS-1W+ RMS-1W

Level 7 (LO Power +7 dBm) 2 to 750 MHz



CASE STYLE: TT240  
PRICE: \$6.75 ea. QTY (1-9)

**+ RoHS compliant in accordance  
with EU Directive (2002/95/EC)**

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 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

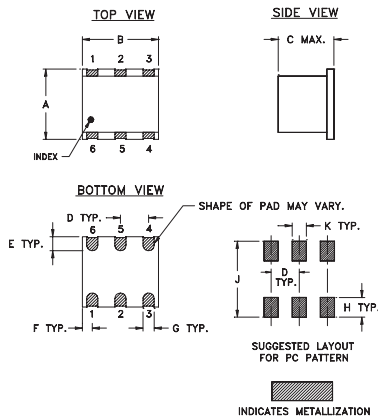
### Features

- excellent L-R isolation, 45 dB typ.
- conversion loss, 5.83 dB typ.
- small size, 0.25"x0.31"x0.2"

### Applications

- HF & VHF communications
- UHF

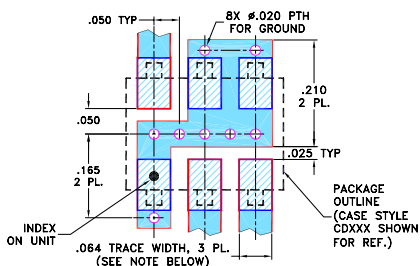
### Outline Drawing



### 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: 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.
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
  - DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

### 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						
2-750	DC-750	5.83	.21	7.5	8.5	70	45	45	28	38	22	60	45	40	25	30	20	1.0

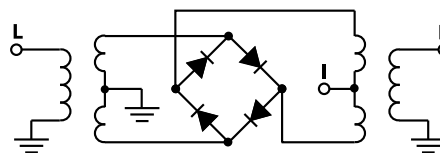
1 dB COMP: +1 dBm typ.  
For phase detection, DC output positive with in-phase RF & LO.

L = low range [ $f_L$  to  $10 f_L$ ]  
M = mid range [ $10 f_L$  to  $f_U/2$ ]  
U = upper range [ $f_U/2$  to  $f_U$ ]

### 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
2.00	32.00	6.15	77.45	62.05	1.16	2.41
4.00	34.00	5.93	77.30	61.60	1.10	2.36
5.00	35.00	5.89	76.89	61.49	1.08	2.47
10.00	40.00	5.90	74.36	60.26	1.09	2.39
20.00	50.00	5.87	69.48	56.77	1.10	2.40
50.00	80.00	5.90	62.05	50.51	1.11	2.40
100.00	70.00	5.85	55.01	45.08	1.15	2.41
101.73	71.73	5.87	55.00	44.99	1.21	2.41
200.00	170.00	5.82	46.91	40.52	1.23	2.36
201.47	171.47	5.83	46.83	40.31	1.31	2.37
301.20	271.20	5.81	42.24	36.71	1.39	2.32
351.07	321.07	5.79	40.24	34.89	1.42	2.34
375.00	345.00	5.79	39.86	34.22	1.49	2.46
400.93	370.93	5.74	39.23	33.67	1.58	2.54
500.00	470.00	5.85	37.51	30.15	1.59	2.56
500.67	470.67	5.84	37.49	30.16	1.70	2.57
600.40	570.40	5.98	36.08	29.20	1.83	2.92
700.13	670.13	6.31	33.78	27.21	2.01	3.30
725.07	695.07	6.49	33.46	26.43	2.07	3.35
750.00	720.00	6.55	33.11	25.85	2.13	3.43

### Electrical Schematic



**Mini-Circuits®**  
ISO 9001 ISO 14001 AS 9100 CERTIFIED

For detailed performance specs & shopping online see web site

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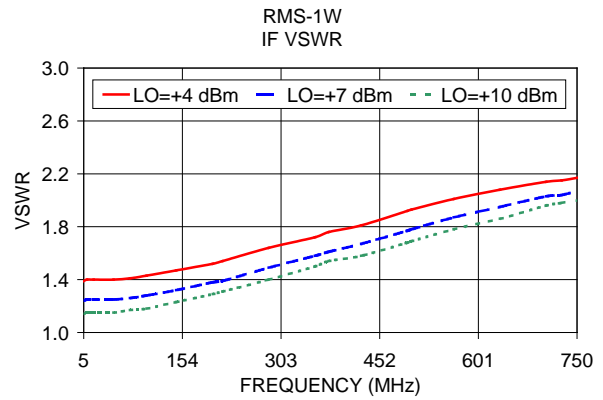
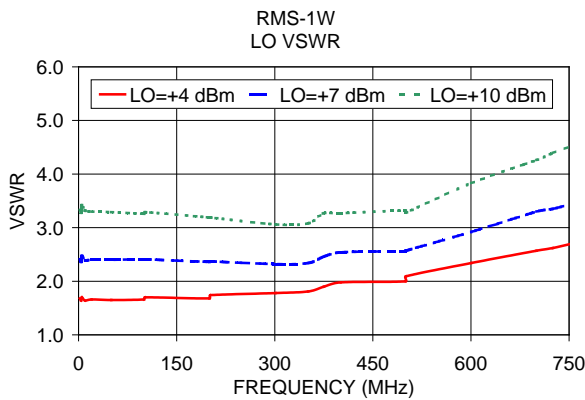
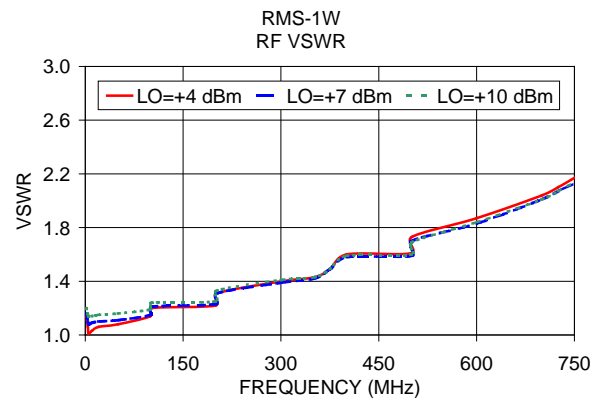
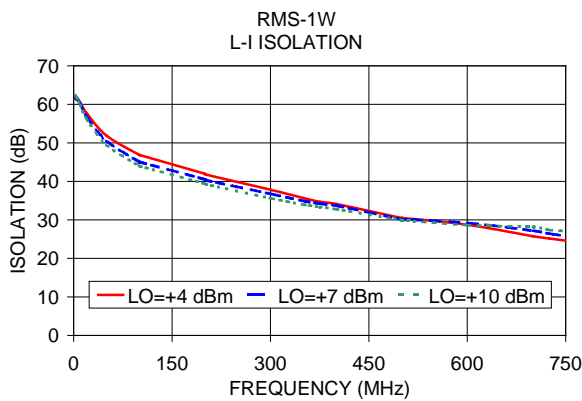
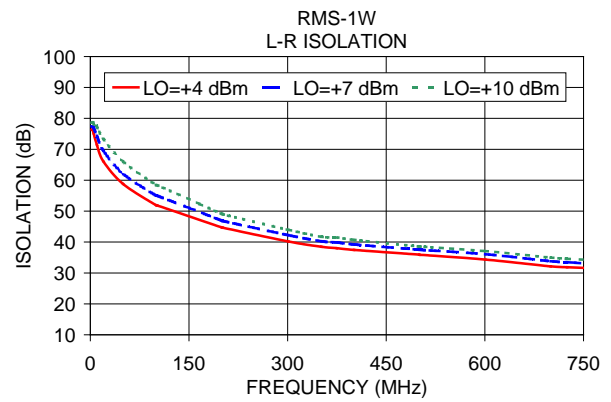
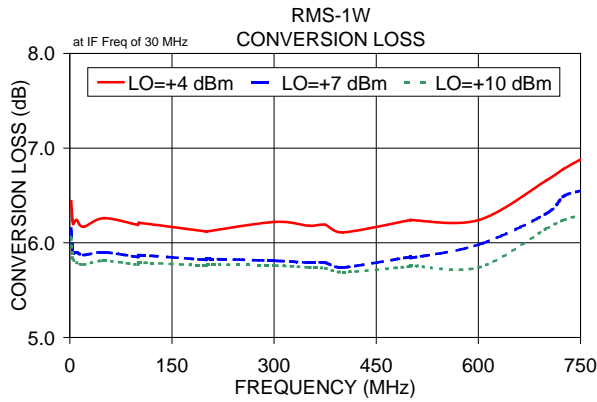
IF/RF MICROWAVE COMPONENTS

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# Performance Charts

# RMS-1W+ RMS-1W



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