

# Surface Mount Frequency Mixer

## RMS-1H+ RMS-1H

Level 17 (LO Power +17 dBm) 2 to 500 MHz



### 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, 44 dB typ.
- conversion loss, 6.25 dB typ.
- small size, 0.25"x0.31"x0.2"

### Applications

- HF & VHF communications
- intermediate frequency for downconverters

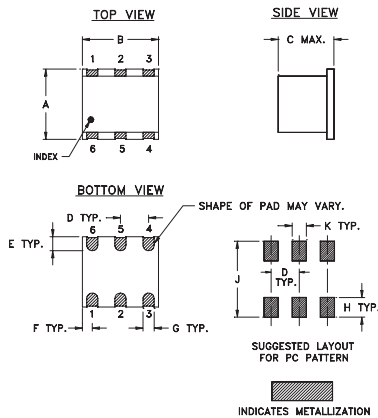
CASE STYLE: TT240

PRICE: \$10.95 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.

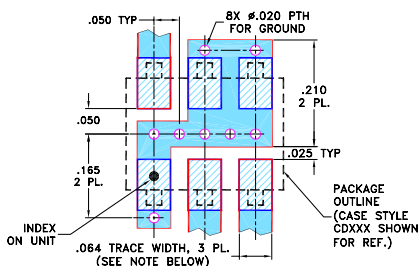
### Outline Drawing



### 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

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine Provides ACTUAL Data Instantly at [minicircuits.com](http://minicircuits.com)

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet are subject to Mini-Circuit's standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuit's website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp).

REV. B  
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RMS-1H  
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Page 1 of 2

### 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						
2-500	DC-500	6.25	.034	7.0	8.5	55	44	44	25	33	20	50	34	45	25	37	22	22

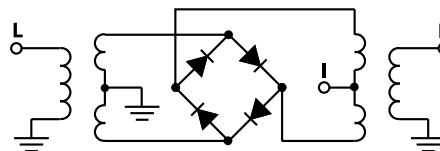
1 dB COMP: +14 dBm typ.  
For phase detection, DC output positive with in-phase RF & LO.

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 (dB)		VSWR RF Port (:1)	VSWR LO Port (:1)
		L-R (dB)	L-I (dB)		
		LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm
2.00	32.00	6.78	79.29	69.19	1.33
4.00	34.00	6.60	72.35	63.39	1.20
5.00	35.00	6.57	71.51	62.98	1.15
10.00	40.00	6.55	65.84	61.30	1.14
20.00	50.00	6.48	59.50	58.68	1.13
35.20	65.20	6.36	51.64	53.67	1.14
50.00	80.00	6.53	51.61	53.63	1.14
85.00	55.00	6.47	45.13	48.67	1.15
100.00	70.00	6.48	44.98	48.52	1.17
134.80	104.80	6.32	41.19	46.50	1.19
184.60	154.60	6.35	38.78	44.90	1.22
200.00	170.00	6.40	38.62	44.42	1.23
234.40	204.40	6.30	36.44	41.20	1.24
250.00	220.00	6.22	36.14	41.01	1.26
284.20	254.20	6.22	35.11	38.57	1.30
334.00	304.00	6.18	33.38	37.07	1.34
383.80	353.80	6.11	32.33	33.77	1.39
433.60	403.60	6.16	32.22	31.10	1.44
483.40	453.40	6.45	31.29	29.09	1.47
500.00	470.00	6.45	30.80	28.30	1.49

### Electrical Schematic



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

For detailed performance specs & shopping online see web site

IF/RF MICROWAVE COMPONENTS

## Performance Charts

