

Surface Mount Frequency Mixer

RMS-1+ RMS-1

Level 7 (LO Power +7 dBm) 0.5 to 500 MHz



Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	50mW
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, 33 dB typ.
- conversion loss, 5.94 dB typ.
- small size, 0.25"x0.31"x0.2"

Applications

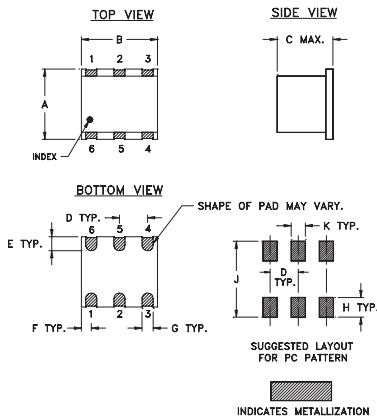
- HF & VHF communications
- broadcast receivers

CASE STYLE: TT240
PRICE: \$6.25 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.

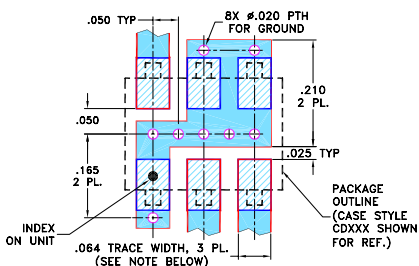
Outline Drawing



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

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						
0.5-500	DC-500	5.94	.05	7.0	8.5	56	50	33	25	27	20	55	45	30	23	24	19	20

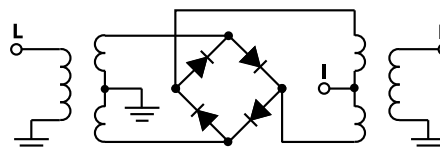
1 dB COMP: +1 dBm typ.
For phase detection, DC output positive with in-phase RF & LO.

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	LO	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm
0.50	30.50	7.45	89.00	64.40	1.11	2.27				
1.00	31.00	6.68	82.65	64.35	1.05	2.27				
2.00	32.00	6.15	76.59	63.49	1.02	2.43				
5.00	35.00	5.84	68.78	59.68	1.01	2.52				
10.00	40.00	5.78	63.45	55.38	1.01	2.50				
20.00	50.00	5.84	56.92	48.99	1.02	2.50				
50.00	80.00	5.84	48.06	40.83	1.03	2.48				
67.10	97.10	5.78	47.33	39.62	1.04	2.43				
100.00	70.00	5.74	45.42	36.85	1.04	2.40				
117.05	87.05	5.71	45.23	36.32	1.07	2.38				
150.35	120.35	5.73	44.09	34.84	1.09	2.29				
200.00	170.00	5.78	41.97	32.90	1.11	2.29				
216.95	186.95	5.84	40.74	32.23	1.13	2.25				
250.00	220.00	5.91	38.62	30.58	1.17	2.28				
283.55	253.55	5.81	36.99	29.19	1.19	2.30				
333.50	303.50	5.81	34.17	26.96	1.22	2.23				
383.45	353.45	6.03	31.17	25.64	1.28	2.29				
433.40	403.40	6.34	29.18	23.85	1.31	2.24				
466.70	436.70	6.56	27.71	22.78	1.37	2.34				
500.00	470.00	6.82	27.09	22.32	1.43	2.31				

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

