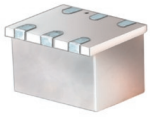
Surface Mount

Frequency Mixer

RMS-1MH+
RMS-1MH

Level 13 (LO Power +13 dBm) 2 to 500 MHz



CASE STYLE: TT240
PRICE: $8.95 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.

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

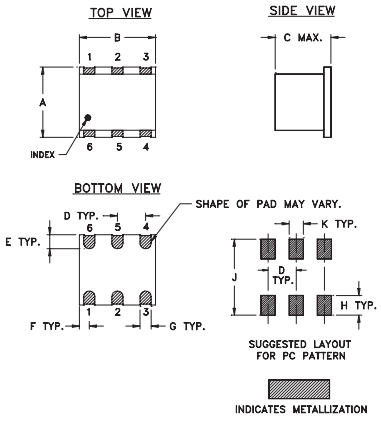
Features

- excellent L-R isolation, 44 dB typ.
- conversion loss, 5.65 dB typ.
- small size, 0.25"x0.31"x0.2"

Applications

- HF & VHF communications
- intermediate frequency for down converters

Outline Drawing

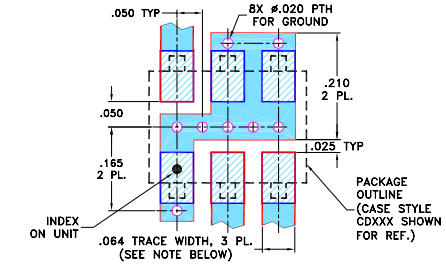


Outline Dimensions (inch / mm)

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)
LO/RF	IF					L		M		U		L		M		U		
f_L-f_U		$\overline{X}$	σ	Max.	Total Range Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.
2-500	DC-500	6.07	.16	7.0	8.0	58	45	44	25	30	20	55	40	36	25	28	17	26

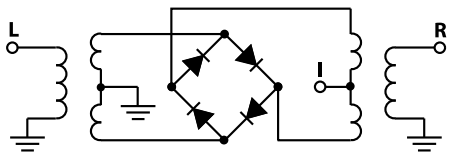
1 dB COMP.: +9 dBm typ.
For phase detection, DC output positive with in-phase RF & LO.

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

Typical Performance Data

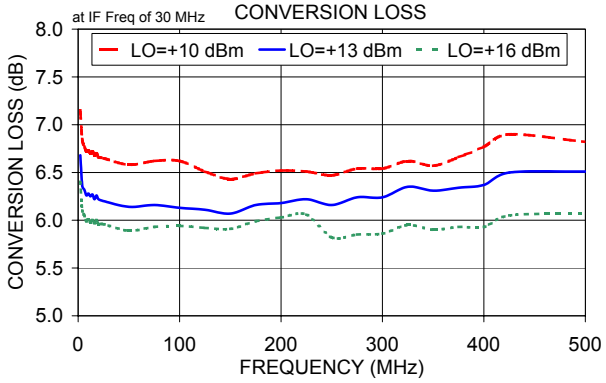
Frequency (MHz)		Conversion Loss (dB)	VSWR RF Port (:1)	Frequency (MHz)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR LO Port (:1)
RF	LO	LO +13dBm	LO +13dBm		LO +13dBm	LO +13dBm	LO +13dBm
2.10	32.10	6.68	2.42	10.50	95.44	63.71	1.79
4.10	34.10	6.36	2.54	14.50	90.48	60.97	1.80
6.10	36.10	6.32	2.59	20.50	85.55	57.99	1.78
10.10	40.10	6.28	2.60	24.50	81.96	56.51	1.78
14.10	44.10	6.27	2.57	30.50	79.59	54.62	1.78
18.10	48.10	6.26	2.53	35.00	77.37	53.48	1.79
20.10	50.10	6.22	2.52	40.10	75.20	52.34	1.79
25.10	55.10	6.20	2.48	50.10	71.74	50.40	1.79
50.10	80.10	6.14	2.29	80.10	64.50	46.30	1.78
100.10	130.10	6.13	1.89	105.10	60.46	43.60	1.77
125.10	155.10	6.11	1.71	155.10	55.39	40.81	1.80
150.10	180.10	6.07	1.56	205.10	51.72	39.49	1.79
175.10	205.10	6.16	1.45	255.10	49.15	38.65	1.84
200.10	230.10	6.18	1.41	305.10	46.78	37.95	1.88
250.10	280.10	6.16	1.39	330.10	46.50	37.64	1.91
300.10	330.10	6.24	1.41	355.10	45.71	37.18	1.90
350.10	380.10	6.31	1.41	405.10	43.38	35.68	1.95
400.10	430.10	6.37	1.42	430.10	42.53	34.62	1.96
425.10	455.10	6.50	1.44	455.10	41.47	33.69	1.93
500.00	470.00	6.51	1.70	470.00	40.85	33.01	1.96

Electrical Schematic

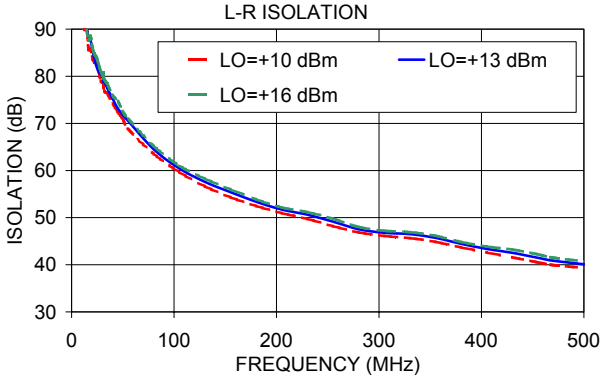


Performance Charts

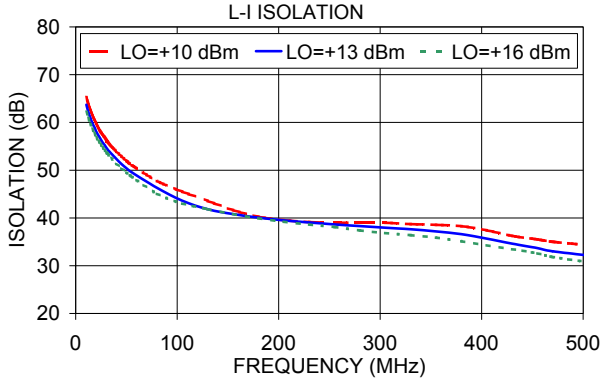
RMS-1MH+
CONVERSION LOSS



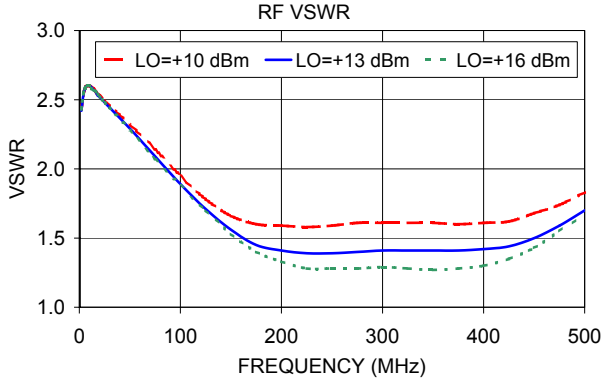
RMS-1MH+
L-R ISOLATION



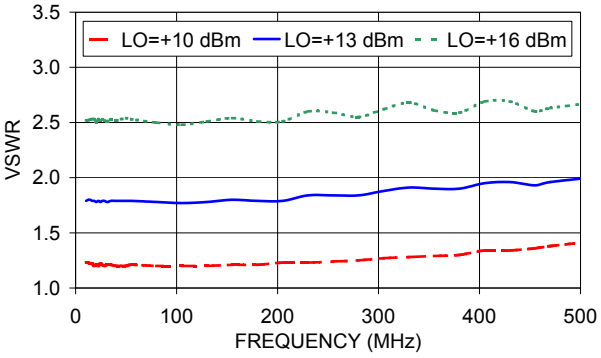
RMS-1MH+
L-I ISOLATION



RMS-1MH+
RF VSWR



RMS-1MH+
LO VSWR



RMS-1MH+
IF VSWR