Surface Mount

Frequency Mixer

RMS-5MH+

Level 13 (LO Power +13 dBm) 10 to 1500 MHz

CASE STYLE: TT240
PRICE: $15.95 ea. QTY (1-9)

+RoHS Compliant
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

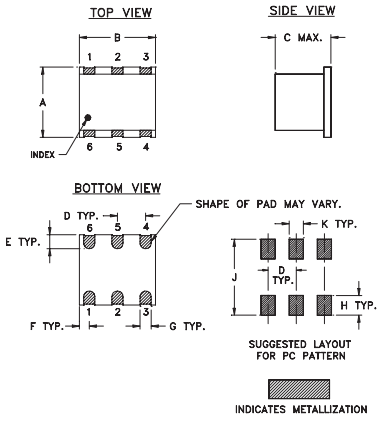
Features

- excellent L-R isolation, 40 dB typ.
- conversion loss, 5.67 dB typ.
- small size, 0.25”x0.31x0.2”

Applications

- cellular
- satellite distribution
- GSM
- ISM

Outline Drawing

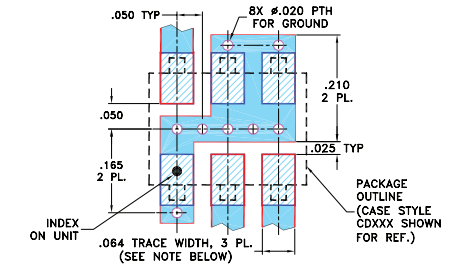


Outline Dimensions (inch / mm)

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) LO/RF	IF f_L-f_U	CONVERSION LOSS (dB) $\overline{X}$	σ	Max.	Total Range Max.	LO-RF ISOLATION (dB) L Typ.	L Min.	M Typ.	M Min.	U Typ.	U Min.	LO-IF ISOLATION (dB) L Typ.	L Min.	M Typ.	M Min.	U Typ.	U Min.	IP3 at center band (dBm) Typ.
10-1500	DC-900	5.67	.09	9.0	9.5	58	40	40	20	26	18	50	30	38	18	17	8	17

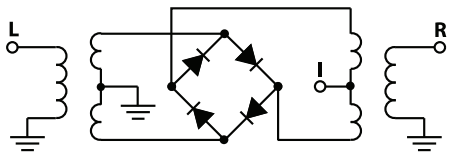
1 dB COMP.: +9 dBm typ.
For phase detection, DC output positive with in-phase RF & LO.

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

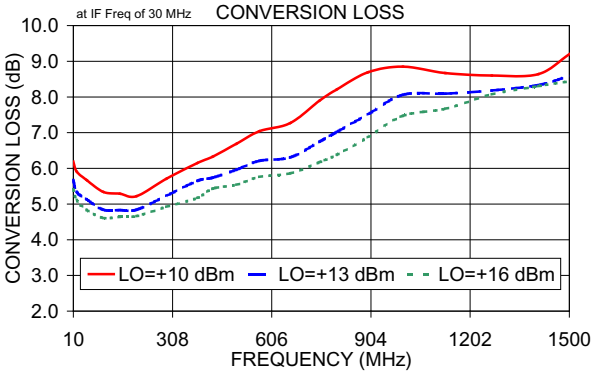
Frequency (MHz) RF	LO	Conversion Loss (dB) LO +13dBm	Isolation L-R (dB) LO +13dBm	Isolation L-I (dB) LO +13dBm	VSWR RF Port (:1) LO +13dBm	VSWR LO Port (:1) LO +13dBm
10.00	40.00	5.67	72.72	71.62	1.72	2.09
20.00	50.00	5.34	69.32	67.42	1.47	2.05
50.00	80.00	5.13	64.80	61.00	1.39	2.09
100.00	70.00	4.84	57.53	52.99	1.40	2.06
149.69	119.69	4.83	51.47	47.61	1.43	1.99
200.00	170.00	4.84	45.11	42.45	1.48	1.97
289.38	259.38	5.23	42.74	40.45	1.59	1.97
382.50	352.50	5.65	40.00	38.72	1.72	1.98
429.06	399.06	5.74	38.30	38.06	1.79	2.07
500.00	470.00	5.96	36.54	37.26	1.91	2.06
568.75	538.75	6.21	36.02	36.79	2.02	2.11
661.88	631.88	6.31	34.63	31.64	2.18	2.23
750.00	720.00	6.75	32.69	27.81	2.32	2.32
801.56	771.56	7.02	32.12	26.48	2.41	2.44
894.69	864.69	7.51	31.35	22.10	2.56	2.61
1000.00	970.00	8.06	29.45	18.64	2.72	2.70
1127.50	1097.50	8.09	27.46	16.61	2.85	2.90
1267.19	1237.19	8.18	26.47	13.75	3.03	3.14
1406.88	1376.88	8.33	26.08	12.44	3.25	3.52
1500.00	1470.00	8.59	25.44	11.30	3.40	3.82

Electrical Schematic

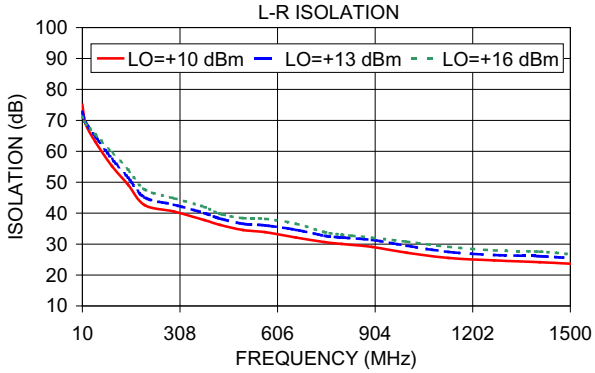


Notes
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit’s applicable established test performance criteria and measurement instructions.
C. The parts covered by this specification document are subject to Mini-Circuits 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-Circuits’ website at www.minicircuits.com/MCLStore/terms.jsp

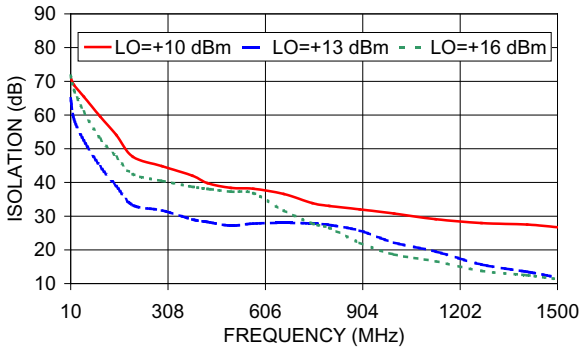
RMS-5MH
at IF Freq of 30 MHz CONVERSION LOSS



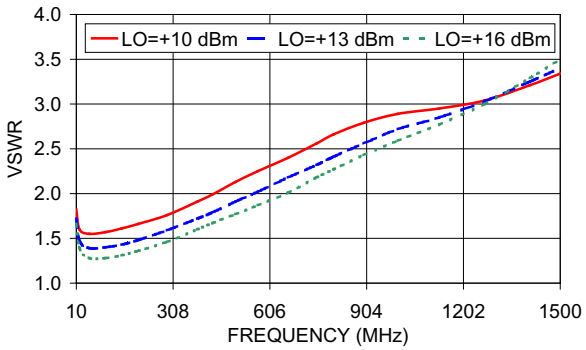
RMS-5MH
L-R ISOLATION



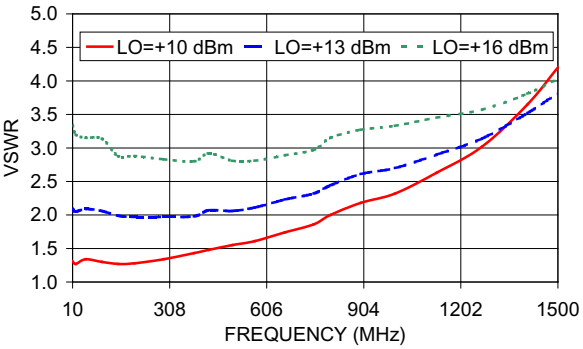
RMS-5MH
L-I ISOLATION



RMS-5MH
RF VSWR



RMS-5MH
LO VSWR



RMS-5MH
IF VSWR