

Surface Mount Frequency Mixer

LRMS-5HJ+ LRMS-5HJ

Level 17 (LO Power +17dBm) 10 to 1500 MHz



CASE STYLE: QQQ569

+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

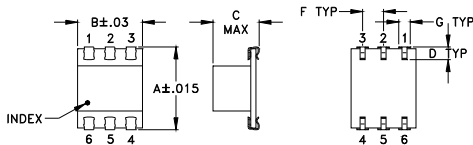
Features

- low conversion loss, 6.36 dB typ.
- aqueous washable
- J-leads for strain relief

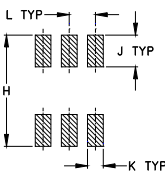
Applications

- cellular
- satellite distribution
- VHF/UHF

Outline Drawing



PCB Land Pattern

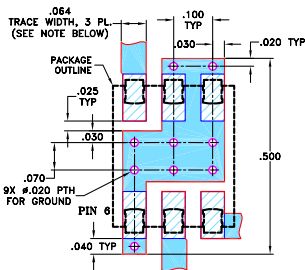


Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.390	.31	.225	.060	--	.100	.045
9.91	7.87	5.72	1.52	--	2.54	1.14
H	J	K	L	M	wt	
.420	.120	.060	.100	--	grams	
10.67	3.05	1.52	2.54	--	0.50	

Demo Board MCL P/N: TB-44+ Suggested PCB Layout (PL-083)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.030" ± 0.002"; 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

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

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							
10-1500	DC-900	65	40	36	20	22	15	50	30	30	18	17	7	22

1 dB COMP.: +14 dBm typ.

L = low range [f_L to $10 f_L$]
m = mid band [$2 f_L$ to $f_U/2$]

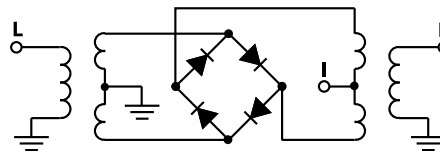
M = mid range [$10 f_L$ to $f_U/2$]

U = upper range [$f_U/2$ to f_U]

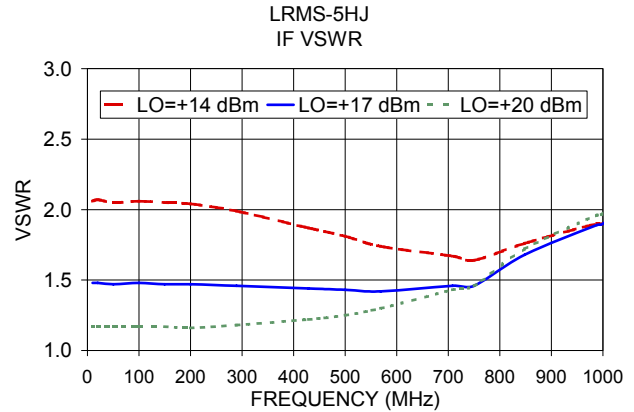
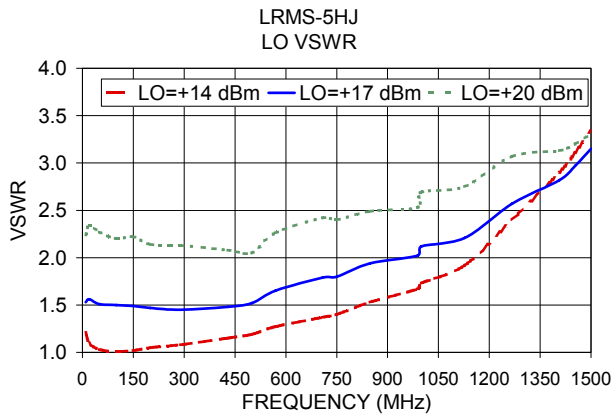
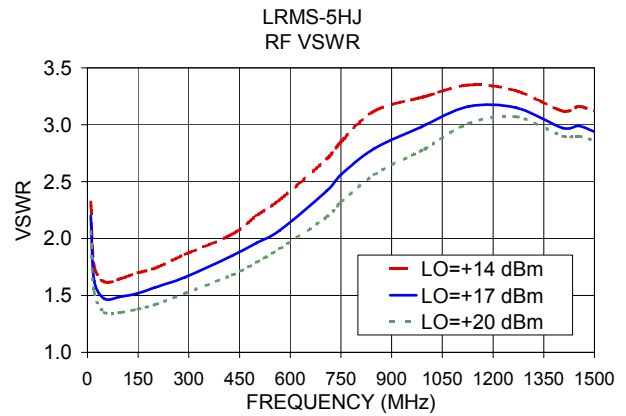
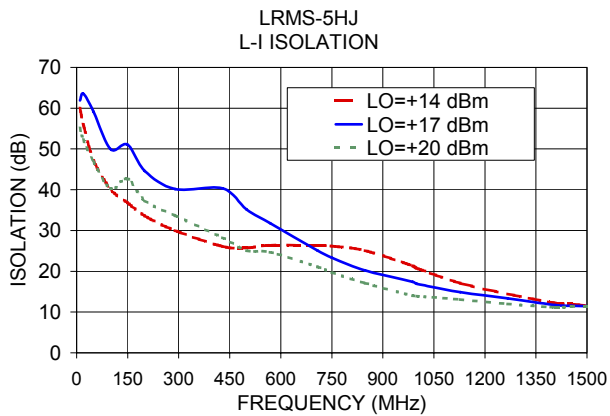
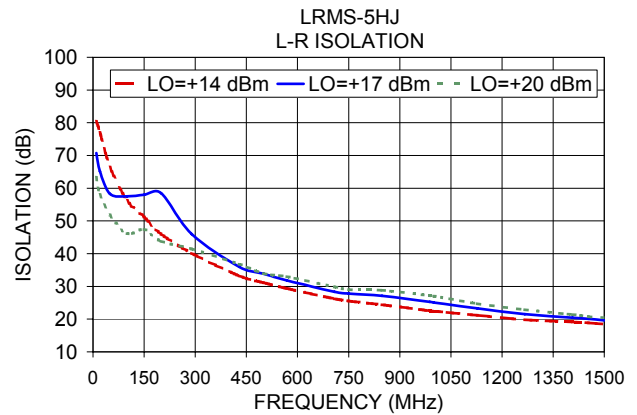
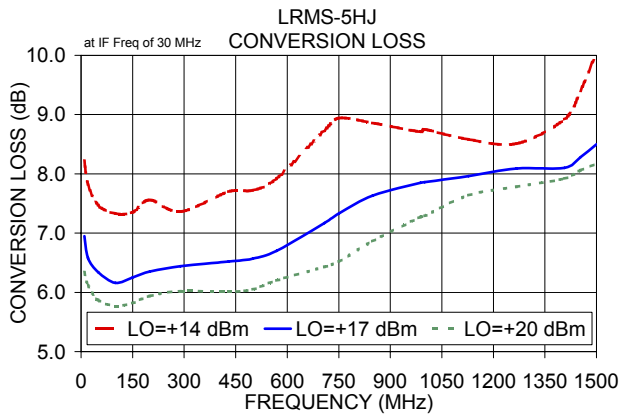
Typical Performance Data

Frequency (MHz)	Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
10.00	40.00	6.95	70.78	61.92	2.20
20.00	50.00	6.58	65.19	63.52	1.63
50.00	80.00	6.34	58.27	59.11	1.47
100.00	70.00	6.16	57.50	49.97	1.49
149.69	119.69	6.25	57.97	51.05	1.52
200.00	170.00	6.35	58.46	44.60	1.57
289.38	259.38	6.44	45.97	40.19	1.66
429.06	399.06	6.52	35.99	40.36	1.85
500.00	470.00	6.57	33.86	35.13	1.96
568.75	538.75	6.70	31.80	31.81	2.07
708.44	678.44	7.17	28.34	25.09	2.42
750.00	720.00	7.33	27.82	23.34	2.56
848.13	818.13	7.63	27.14	20.18	2.79
987.81	957.81	7.85	25.28	17.43	2.98
1000.00	970.00	7.86	25.09	16.91	3.00
1127.50	1097.50	7.96	23.28	14.89	3.16
1267.19	1237.19	8.09	21.51	13.36	3.15
1406.88	1376.88	8.10	20.40	11.73	2.97
1453.44	1423.44	8.28	20.09	11.57	2.99
1500.00	1470.00	8.50	19.62	11.46	2.94

Electrical Schematic



Performance Charts



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