

# Surface Mount Frequency Mixer

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

## LRMS-1HJ+ LRMS-1HJ



CASE STYLE: QQQ569  
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.

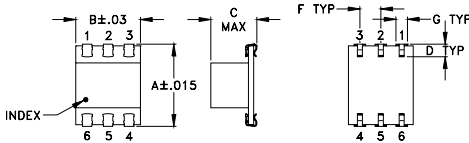
### Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	200mW
IF Current	40mA

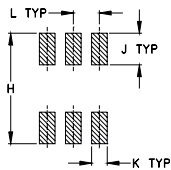
### Pin Connections

LO	1
RF	4
IF	5
GROUND	2,3,6

### Outline Drawing



### PCB Land Pattern

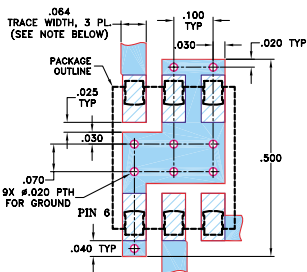


Suggested Layout,  
Tolerance to be within  $\pm .002$

### 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  $0.030" \pm 0.002"$ ; 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

### Features

- low conversion loss, 6.25 dB typ.
- excellent L-R isolation, 44 dB typ.
- aqueous washable
- J-leads for strain relief

### Applications

- HF/VHF/UHF
- instrumentation

### Electrical Specifications

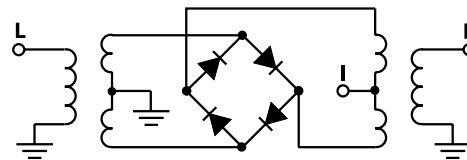
FREQUENCY (MHz)	CONVERSION LOSS (dB)	LO-RF ISOLATION (dB)			LO-IF ISOLATION (dB)			IP3 at center band (dBm)						
		L	M	U	L	M	U							
2-500	DC-500	55	44	44	25	33	20	50	34	45	25	37	22	25

1 dB COMP.: +14 dBm typ. L = low range [ $f_l$  to  $10 f_l$ ] M = mid range [ $10 f_l$  to  $f_l/2$ ] U = upper range [ $f_l/2$  to  $f_l$ ]  
Mid-Band m Total Range Max.  $\bar{X}$   $\sigma$  Max. Max.

### Typical Performance Data

Frequency (MHz)	Conversion Loss (dB)		Isolation L-R (dB)		Isolation L-I (dB)		VSWR RF Port (:1)		VSWR LO Port (:1)	
	LO	LO +17dBm	LO	LO +17dBm	LO	LO +17dBm	LO	LO +17dBm	LO	LO +17dBm
2.00	32.00	6.78	79.29	69.19	1.33	1.77				
4.00	34.00	6.60	72.35	63.39	1.20	1.75				
5.00	35.00	6.57	71.51	62.98	1.15	1.82				
10.00	40.00	6.55	65.84	61.30	1.14	1.82				
20.00	50.00	6.48	59.50	58.68	1.13	1.75				
35.20	65.20	6.36	51.64	53.67	1.14	1.75				
50.00	80.00	6.53	51.61	53.63	1.14	1.76				
85.00	55.00	6.47	45.13	48.67	1.15	1.74				
100.00	70.00	6.48	44.98	48.52	1.17	1.71				
134.80	104.80	6.32	41.19	46.50	1.19	1.69				
184.60	154.60	6.35	38.78	44.90	1.22	1.65				
200.00	170.00	6.40	38.62	44.42	1.23	1.62				
234.40	204.40	6.30	36.44	41.20	1.24	1.63				
250.00	220.00	6.22	36.14	41.01	1.26	1.62				
284.20	254.20	6.22	35.11	38.57	1.30	1.58				
334.00	304.00	6.18	33.38	37.07	1.34	1.54				
383.80	353.80	6.11	32.33	33.77	1.39	1.51				
433.60	403.60	6.16	32.22	31.10	1.44	1.45				
483.40	453.40	6.45	31.29	29.09	1.47	1.41				
500.00	470.00	6.45	30.80	28.30	1.49	1.39				

### Electrical Schematic



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RF/IF MICROWAVE COMPONENTS

REV. B  
M102713  
LRMS-1HJ  
DJ/FL/CP  
061229  
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## Performance Charts

