

# Surface Mount Frequency Mixer

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

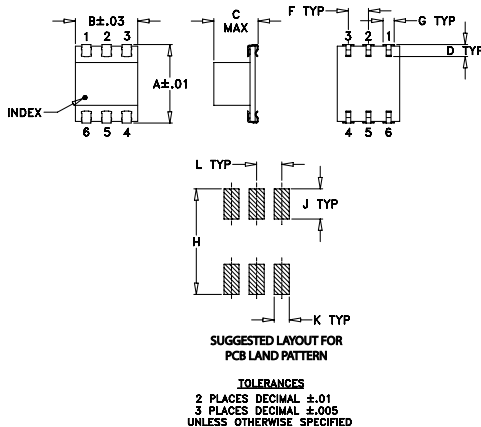
## Maximum Ratings

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

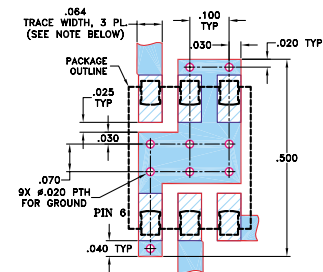
## Outline Drawing



## Outline Dimensions (inch)

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, 5.65 dB typ.
- excellent L-R isolation, 44 dB typ.
- aqueous washable
- J-leads for strain relief

## Applications

- VHF/UHF
- instrumentation



CASE STYLE: QQQ569  
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.

## Electrical Specifications

FREQUENCY (MHz)		CONVERSION LOSS (dB)				LO-RF ISOLATION (dB)						LO-IF ISOLATION (dB)						IP3 at center band (dBm)
LO/RF $f_L$ - $f_U$	IF	Mid-Band m		Total Range		L	M	U	L	M	U	L	M	U				
		$\bar{X}$	$\sigma$	Max.	Max.										Typ.	Min.	Typ.	
2-500	DC-500	5.65	.08	7.0	8.0	58	45	44	25	30	20	55	40	36	25	28	17	23

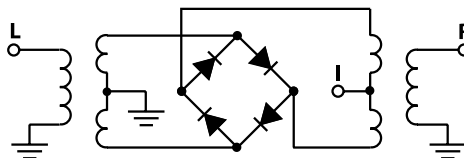
1 dB COMP.: +14 dBm typ.

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)
RF	LO	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm
2.00	32.00	6.87	74.51	65.71	1.13	2.10
5.00	35.00	5.99	68.76	61.00	1.06	2.01
10.00	40.00	6.21	63.07	55.80	1.02	2.15
20.00	50.00	6.21	57.31	49.78	1.01	2.20
32.18	62.18	6.13	52.98	45.20	1.02	2.17
50.00	80.00	6.10	49.34	40.85	1.04	2.08
77.45	47.45	6.18	47.86	38.28	1.06	2.06
100.00	70.00	6.00	47.68	37.14	1.09	2.04
122.73	92.73	6.08	47.59	36.20	1.11	2.00
168.00	138.00	6.07	45.07	34.10	1.13	1.98
198.18	168.18	6.11	42.15	31.58	1.16	1.99
228.36	198.36	6.11	39.78	30.31	1.18	1.98
250.00	220.00	6.27	37.93	29.36	1.20	1.98
273.64	243.64	6.21	35.54	27.74	1.23	2.01
303.82	273.82	6.26	32.56	25.93	1.25	2.01
349.09	319.09	6.39	29.95	24.88	1.28	2.01
379.27	349.27	6.47	28.87	23.78	1.33	2.01
409.46	379.46	6.45	27.89	22.58	1.36	2.03
454.73	424.73	6.64	25.80	20.47	1.41	2.07
500.00	470.00	7.03	23.97	18.39	1.45	2.09

## Electrical Schematic



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# LRMS-1MHJ+ LRMS-1MHJ

## Performance Charts

