

# Ceramic Frequency Mixer WIDE BAND

## MCA-35LH+ MCA-35LH

Level 10 (LO Power+10 dBm) 500 to 3500 MHz



### Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power	50 mW
IF Current	40 mA

### Pin Connections

LO	10
RF	5
IF	3
GROUND	1,2,4,6,7,8,9

### Features

- wide bandwidth, 500 to 3500 MHz
- excellent isolation, 30 dB typ. (1800-2500 MHz)
- good matching 2:1 VSWR typ. (over 1800-2800 MHz)
- small size 0.25"x0.3"x0.2"
- aqueous washable
- triple balanced mixer
- protected by US Patent 6,917,796

CASE STYLE: DZ883  
PRICE: \$7.95 ea. QTY.(10-49)

**+ 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.

### Applications

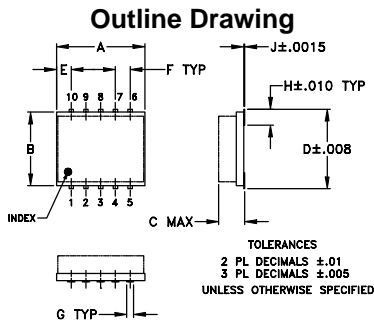
- cellular
- PCN
- PDC
- DECT
- PHS

### Electrical Specifications (T<sub>AMB</sub>=-55°C to 100°C)

FREQUENCY (MHz)	CONVERSION LOSS (dB)			LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 at center band (dBm)
	LO/RF f <sub>L</sub> -f <sub>U</sub>	IF	σ	Max.	Typ.	Min.	Typ.	
<b>500-3500</b>	<b>10-1500</b>	<b>6.9</b>	<b>0.1</b>	<b>8.9</b>				
500-800	10-300	6.3	0.1	7.7	18	11	32	25
800-1000	10-200	7.1	0.1	8.6	24	17	30	23
1000-1800	10-800	7.3	0.1	8.9	29	20	28	20
1800-2000	10-200	6.3	0.1	8.2	32	25	30	23
1800-2500	10-700	5.8	0.1	8.2	32	22	30	21
2000-3500	10-1500	6.5	0.1	8.7	29	17	26	15

1 dB COMPR. +6 dBm typ.

• see individual band specs

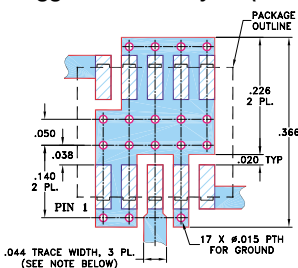


### SUGGESTED LAYOUT FOR PCB LAND PATTERN

### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G		
.30	.250	.190	.274	.050	.050	.012		
7.62	6.35	4.83	6.96	1.27	1.27	0.30		
H	J	K	L	M		wt		
.057	.004	.085	.296	.030		grams		
1.45	0.10	2.16	7.52	0.76		0.5		

### Demo Board MCL P/N: TB-144 Suggested PCB Layout (PL-045)



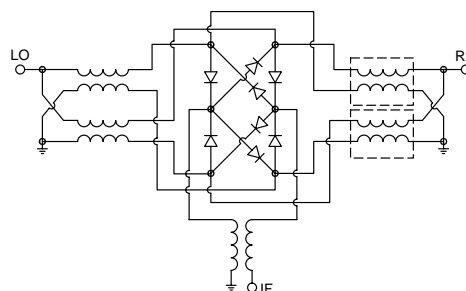
- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.  
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)  
■ DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

### 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	RF	LO	RF	LO	RF	LO	RF	LO	RF
500.00	530.00	6.10	16.44	16.44	16.44	1.53	1.46			
600.00	630.00	6.10	17.92	17.92	1.83	1.23				
700.00	730.00	6.04	20.26	20.26	2.24	1.16				
800.00	830.00	6.58	23.10	23.10	2.77	1.17				
1000.00	1030.00	7.04	28.73	28.73	3.23	1.30				
1300.00	1330.00	7.00	31.09	31.09	2.56	1.49				
1500.00	1530.00	7.71	28.68	28.68	1.99	1.65				
1600.00	1630.00	7.50	28.46	28.46	2.11	1.66				
1700.00	1730.00	6.81	30.31	30.31	2.04	1.57				
1800.00	1830.00	6.41	31.73	31.73	1.95	1.58				
2000.00	2030.00	6.20	32.70	32.70	1.69	1.64				
2300.00	2330.00	6.19	31.39	31.39	1.61	1.61				
2500.00	2530.00	6.34	30.15	30.15	2.25	1.78				
2700.00	2730.00	6.73	30.75	30.75	3.06	1.72				
2900.00	2930.00	7.09	31.56	31.56	3.22	1.79				
3000.00	3030.00	7.12	30.82	30.82	3.34	1.75				
3100.00	3130.00	7.32	31.63	31.63	3.34	1.63				
3300.00	3330.00	7.18	31.03	31.03	3.19	1.43				
3400.00	3430.00	6.86	29.04	29.04	3.05	1.45				
3500.00	3530.00	6.75	26.75	26.75	2.75	1.42				

### Electrical Schematic



# Performance Charts

# MCA-35LH+ MCA-35LH

