

# Ceramic Frequency Mixer WIDE BAND

## MCA-50H+ MCA-50H

Level 17 (LO Power+17 dBm) 1000 to 5000 MHz



### Maximum Ratings

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

### Pin Connections

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

### Features

- wide bandwidth, 1000 to 5000 MHz
- good L-R isolation, 25 dB typ.; excellent L-I isolation, 30 dB typ.
- small size 0.25"x0.3"x0.2"
- aqueous washable
- triple balanced mixer
- protected by US Patent 6,917,796

CASE STYLE: DZ883

PRICE: \$9.95 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

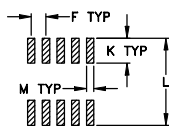
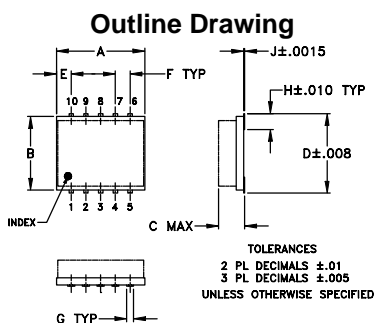
- PCN
- satellite
- line of sight links

### 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	$\bar{X}$	$\sigma$	Max.	Typ.	Min.		Typ.	Min.
1000-5000	10-1500		7.3	0.2	10.2					
1000-1400	10-400		6.8	0.1	8.5	25	12	32	20	22
1400-2000	10-600		6.6	0.1	7.7	25	20	32	20	25
2000-2700	10-600		7.8	0.2	9.9	25	15	25	18	23
2700-4500	10-1500		7.8	0.1	8.8	35	20	30	18	23
4500-5000	50-500		8.0	0.2	10.2	30	18	35	18	21

1 dB COMPR. +14 dBm typ.

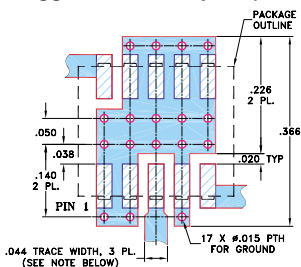
• see individual band specs



### 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)



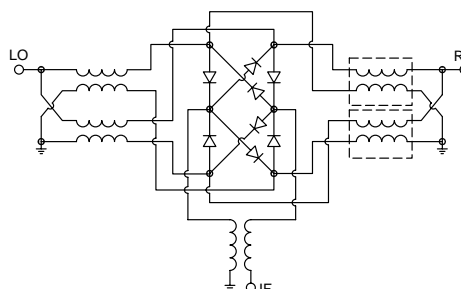
- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.  
 2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- 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)
1000.10	6.23	18.37	31.99	1.46	2.19
1250.10	5.70	28.23	31.40	1.32	2.66
1500.10	5.54	46.63	30.38	1.26	2.61
1750.10	5.63	34.42	28.99	1.26	2.14
2000.00	6.30	28.31	27.43	1.37	2.48
2250.00	7.82	24.16	26.03	1.63	1.74
2500.00	7.40	22.63	27.98	1.40	1.76
2750.00	6.63	26.73	30.16	1.52	1.92
3000.00	6.09	30.82	28.77	1.85	1.51
3250.00	5.74	36.36	30.34	1.88	1.17
3500.00	5.94	47.63	31.95	2.03	1.31
3750.00	6.13	37.32	32.96	2.21	1.74
4000.00	6.59	32.92	36.46	2.35	2.01
4250.00	7.32	28.31	40.32	2.52	2.25
4400.00	7.43	26.83	41.25	2.23	2.32
4500.00	7.43	25.84	39.65	2.20	2.29
4600.00	7.50	26.53	35.42	2.25	2.31
4750.00	7.97	25.29	39.98	2.18	2.44
4900.00	8.25	26.41	39.88	2.17	2.83
5000.00	8.23	28.64	35.47	2.02	2.78

### Electrical Schematic



# MCA-50H+ MCA-50H

## Performance Charts

