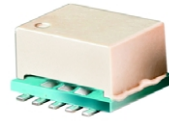


Ceramic

# Frequency Mixer WIDE BAND

## MCA-50LH+ MCA-50LH

Level 10 (LO Power +10 dBm) 1000 to 5000 MHz



### Features

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

CASE STYLE: DZ883  
PRICE: \$ 8.95 ea. QTY (10-49)

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

See our web site for RoHS Compliance methodologies and qualifications.

### Applications

- PCN
- satellite
- line of sight links

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

MODEL NO.	FREQUENCY (MHz)		CONVERSION LOSS (dB)			LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3@ center band Typ. (dBm)	E FACTOR
	LO/RF f <sub>L</sub> -f <sub>U</sub>	IF	$\bar{x}$	$\sigma$	Max.	Typ.	Min.	Typ.	Min.		
MCA-50LH	1000-5000	10-1500	7.3	0.2	9.9						
	1000-1400	10-400	6.8	0.1	8.5	20	11	32	25	17	0.7
	1400-2000	10-600	6.6	0.1	7.7	25	20	32	25	17	0.7
	2000-2600	10-600	7.8	0.2	9.9	25	18	30	24	18	0.8
	2600-4500	10-1500	7.8	0.1	8.6	35	20	25	15	15	0.5
	4500-5000	50-500	8.0	0.2	9.9	35	22	25	15	16	0.6

1dB Compr.: +6 dBm typ.  
E= (IP3(dBm)-LO Power(dBm))/10

\* see individual band specs.

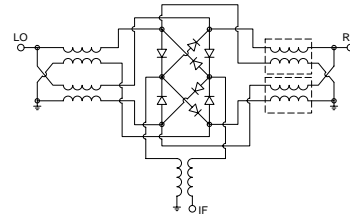
### Pin Connections

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

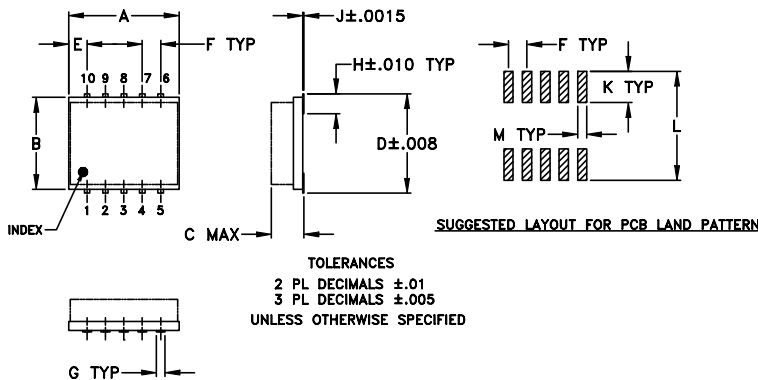
### Maximum Ratings

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

### electrical schematic



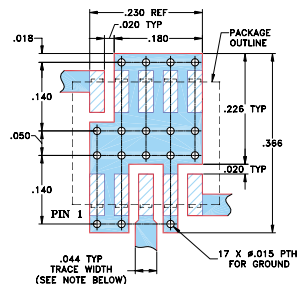
### Outline Drawing



### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	K	L	M	wt grams
.30	.250	.190	.274	.050	.050	.012	.057	.004	.085	.296	.030	0.50
7.62	6.35	4.83	6.96	1.27	1.27	0.30	1.45	0.10	2.16	7.52	0.76	

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



NOTE: TRACE WIDTH IS SHOWN FOR ROGERS RO4350 WITH DIELECTRIC THICKNESS 0.020" ± 0.0015", COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

- DENOTES PCB COPPER LAYOUT
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK



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050914  
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# MCA-50LH+ MCA-50LH

## Typical Performance Data at 25°C

Frequency		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR LO port (:1)	VSWR RF port (:1)
RF MHz	LO MHz	LO +10 dBm	LO +10 dBm	LO +10 dBm	LO +10 dBm	LO +10 dBm
1000.00	1030.00	6.60	17.81	29.70	1.29	1.98
1200.00	1230.00	6.15	24.04	29.91	1.21	2.24
1400.00	1430.00	6.43	34.07	29.94	1.24	2.29
1600.00	1630.00	6.37	39.60	29.40	1.25	2.44
1800.00	1830.00	6.62	31.69	28.02	1.37	2.20
2000.00	2030.00	6.78	24.37	27.19	1.46	2.26
2200.00	2230.00	7.92	21.31	26.29	1.70	1.96
2400.00	2430.00	8.07	20.77	27.01	1.75	1.90
2600.00	2630.00	6.95	23.92	27.47	1.62	2.03
2800.00	2830.00	6.40	27.26	27.23	1.77	1.77
3000.00	3030.00	6.19	31.17	27.36	1.69	1.36
3200.00	3230.00	5.94	32.33	27.58	1.72	1.18
3400.00	3430.00	5.98	37.20	28.87	1.83	1.14
3600.00	3630.00	5.98	38.18	28.74	1.93	1.26
3800.00	3830.00	6.15	36.23	30.47	2.05	1.43
4000.00	4030.00	6.45	34.76	32.27	2.17	1.60
4200.00	4230.00	6.28	34.62	30.62	2.18	2.08
4400.00	4430.00	6.12	31.09	29.11	2.21	2.52
4600.00	4630.00	5.93	31.30	28.75	2.26	2.31
5000.00	5030.00	5.70	37.55	29.58	1.92	1.52

## Performance Charts

