

Ceramic

# Frequency Mixer WIDE BAND

## MCA1-80LH+

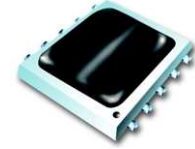
Level 10 (LO Power +10 dBm) 2800 to 8000 MHz

### Features

- wide bandwidth, 2800 to 8000 MHz
- low conversion loss, 5.9 dB typ.
- high L-R isolation, 35 dB typ.
- IF, DC to 1250 MHz
- LTCC double balanced mixer
- low cost
- low profile, 0.08"

### Applications

- satellite up and down converters
- line of sight links
- defense radar
- defense communication



CASE STYLE: DZ885  
PRICE: \$9.95 ea. QTY (10-49)

(Patent pending)

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

The +suffix has been added in order to identify RoHS Compliance. There has been no change to the model's material, form, fit, or function. See our web site for RoHS Compliance methodologies and qualifications.

### 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.		
MCA1-80LH+	2800-8000	DC-1250								15	0.5
	2800-5000	DC-1250	6.0	0.2	8.4*	35	25	13	8		
	5000-8000	DC-1250	5.7	0.2	8.2*	35	20	40	19	12	0.2

1dB Compr.: +5 dBm typ.

E= [(IP3(dBm)-LO Power(dBm))/10]

\* Conversion loss at 30 MHz IF, increases with IF frequency

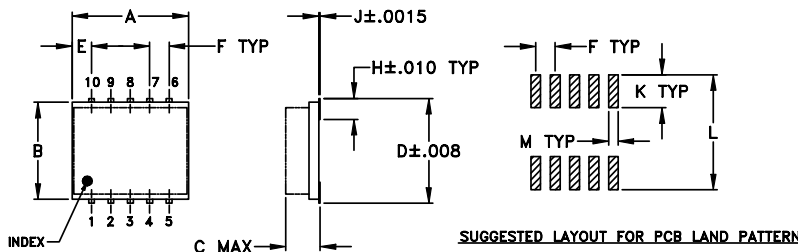
### Pin Connections

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

### Maximum Ratings

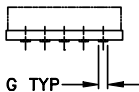
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power	50mW
IF Current	40mA

### Outline Drawing



SUGGESTED LAYOUT FOR PCB LAND PATTERN

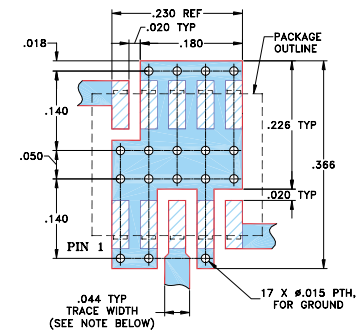
TOLERANCES  
2 PL DECIMALS ±.01  
3 PL DECIMALS ±.005  
UNLESS OTHERWISE SPECIFIED



### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.30	.250	.085	.274	.050	.050	.012
7.62	6.35	2.16	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	0.25	

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



NOTE: TRACE WIDTH IS SHOWN FOR ROGERS R04350 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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REV. A  
M98898  
ED-11226/1  
MCA1-80LH+  
DJ/RS/CP  
050907

## 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
2800.00	2830.10	5.86	42.01	11.25	2.37	2.65
3100.00	3130.10	5.33	43.77	12.32	2.56	2.29
3400.00	3430.10	5.17	41.01	13.64	2.45	1.84
3700.00	3730.10	5.11	31.53	14.12	2.16	1.49
4000.00	4030.10	6.37	41.29	14.13	2.34	2.46
4300.00	4330.10	6.89	35.37	17.02	2.23	2.31
4600.00	4630.10	6.54	39.20	21.32	2.63	1.94
4900.00	4930.10	6.91	39.89	24.95	2.49	2.71
5200.00	5230.10	5.89	46.23	27.60	2.83	1.95
5500.00	5530.10	5.91	49.01	30.76	3.41	1.93
5800.00	5830.10	6.37	38.83	34.49	2.71	2.08
6100.00	6130.10	5.86	37.35	38.71	2.44	2.09
6400.00	6430.10	5.43	40.56	42.58	2.07	1.93
6700.00	6730.10	5.30	33.67	48.33	1.99	1.64
7000.00	7030.10	5.31	31.70	42.01	1.97	1.76
7300.00	7330.10	5.55	31.52	41.10	2.24	1.77
7600.00	7630.10	5.92	28.55	39.91	1.87	1.65
7800.00	7830.10	6.16	27.10	31.71	1.85	1.52
7900.00	7930.10	6.02	26.59	31.18	1.83	1.41
8000.00	8030.10	5.89	25.89	31.04	1.93	1.43

## Performance Charts

