

Ceramic

# Frequency Mixer WIDE BAND

## MCA1-80H+

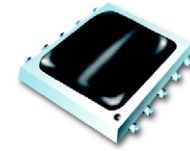
Level 17 (LO Power +17 dBm) 2800 to 8000 MHz

### Features

- wide bandwidth, 2800 to 8000 MHz
- low conversion loss, 6.3 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: \$11.95 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. 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.		
MCA1-80H+	2800-8000	DC-1250	6.5	0.2	8.9	34	22	12	8	24	0.7
	2800-5000	DC-1250									
	5000-8000	DC-1250									

1dB Compr.: +14 dBm typ.  
 E= ([IP3(dBm)-LO Power(dBm)]/10)  
 \* Conversion loss at 30 MHz IF, increases with IF frequency

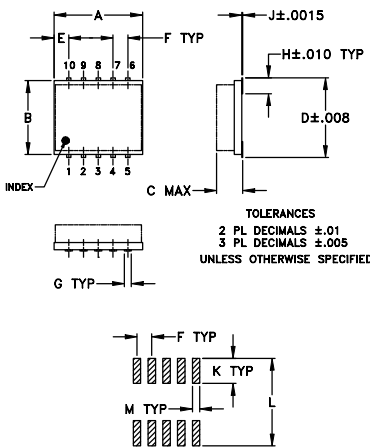
### Pin Connections

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

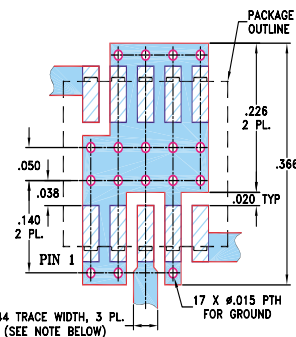


SUGGESTED LAYOUT FOR PCB LAND PATTERN

### 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)



- 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



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P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661

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REV. C  
 M103967  
 ED-11233/1  
 MCA1-80H+  
 DJ/RS/CP/AM  
 060308  
 page 1 of 2

## 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 +17 dBm	LO +17 dBm	LO +17 dBm	LO +17 dBm	LO +17 dBm
2800.00	2830.10	6.32	43.01	12.42	1.99	2.41
5000.00	5030.10	7.02	35.98	24.98	2.98	2.67
6200.00	6230.10	5.89	32.88	37.57	3.25	2.97
6300.00	6330.10	5.62	32.26	38.59	3.45	3.20
6400.00	6430.10	5.42	34.86	39.69	3.20	3.42
6500.00	6530.10	5.18	35.38	41.78	2.96	3.13
6600.00	6630.10	5.28	32.64	45.82	2.83	2.98
6650.00	6680.10	5.56	32.40	45.78	2.60	3.06
6700.00	6730.10	5.13	32.63	44.65	2.60	3.30
7000.00	7030.10	5.25	32.22	45.62	2.72	3.13
7150.00	7180.10	5.61	32.69	45.49	2.83	3.45
7200.00	7230.10	5.46	32.89	43.89	2.89	3.67
7300.00	7330.10	5.55	33.59	41.45	3.04	3.62
7400.00	7430.10	5.65	34.45	40.66	3.13	3.45
7500.00	7530.10	5.79	33.59	41.99	3.22	3.45
7600.00	7630.10	6.08	34.10	41.64	3.16	3.86
7700.00	7730.10	6.18	34.94	34.31	2.97	4.74
7800.00	7830.10	6.31	35.54	30.40	2.86	5.09
7900.00	7930.10	6.25	35.75	27.33	2.86	4.68
8000.00	8030.10	6.30	33.26	24.54	3.15	4.50

## Performance Charts

