

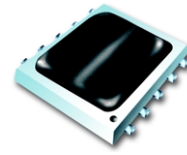
Ceramic

# Frequency Mixer WIDE BAND

**NEW!**

## MCA1-80MH

Level 13 (LO Power +13 dBm) 2800 to 8000 MHz



**BLUE CELL™**

CASE STYLE: DZ885  
PRICE: \$10.95 ea. QTY (10-49)

(Patent pending)

### Features

- wide bandwidth, 2800 to 8000 MHz
- low conversion loss, 5.6 dB typ.
- high L-R isolation, 27 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

### 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.		
MCA1-80MH	2800-8000	DC-1250								19	0.6
	2800-5000	DC-1250	5.5	0.2	8.2	27	20	12	7	18	0.5
	5000-8000	DC-1250	5.7	0.2	8.7	27	17	35	13		

1dB Compr.: +9 dBm typ.

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

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

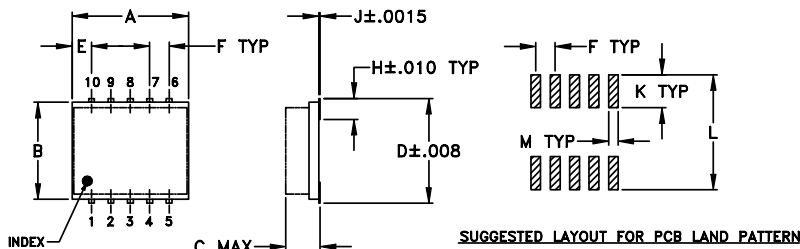
### Pin Connections

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

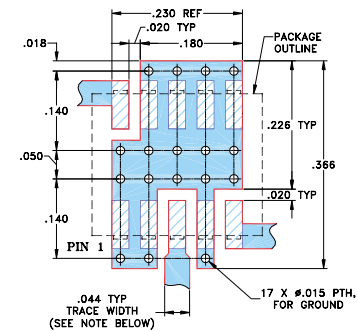
### Outline Drawing



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

SUGGESTED LAYOUT FOR PCB LAND PATTERN

### 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

### 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	



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Mini-Circuits ISO 9001 & ISO 14001 Certified

INTERNET <http://www.minicircuits.com>

REV. OR  
M88362  
ED-11232/1  
MCA1-80MH  
DJ/RS/CP  
041112  
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## 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 +13 dBm	LO +13 dBm	LO +13 dBm	LO +13 dBm	LO +13 dBm
2800.00	2830.10	5.30	29.83	10.30	1.69	2.01
3100.00	3130.10	5.19	30.55	11.17	1.92	2.33
3400.00	3430.10	5.15	28.90	11.39	1.98	1.88
3700.00	3730.10	5.07	25.39	11.55	1.83	1.64
4000.00	4030.10	6.71	31.35	12.15	1.81	2.19
4300.00	4330.10	7.21	26.05	15.86	1.73	1.79
4600.00	4630.10	6.79	28.68	21.75	1.66	1.99
4900.00	4930.10	6.53	31.04	26.03	1.72	2.92
5200.00	5230.10	5.96	33.67	28.16	1.72	2.82
5500.00	5530.10	5.98	35.10	29.78	1.71	2.88
5800.00	5830.10	6.38	35.17	31.82	1.62	2.39
6100.00	6130.10	5.84	32.56	34.33	1.49	2.32
6400.00	6430.10	5.82	28.81	38.07	1.32	2.61
6700.00	6730.10	6.18	27.53	42.97	1.37	2.54
7000.00	7030.10	6.33	25.78	45.06	1.35	2.85
7300.00	7330.10	6.51	24.98	42.96	1.35	2.73
7600.00	7630.10	7.07	23.74	32.65	1.31	2.68
7800.00	7830.10	7.63	22.11	21.72	1.29	2.45
7900.00	7930.10	7.51	20.98	18.88	1.31	2.35
8000.00	8030.10	7.13	20.18	19.97	1.28	2.58

## Performance Charts

