

Ceramic

Frequency Mixer WIDE BAND

NEW!

MCA1-80MH

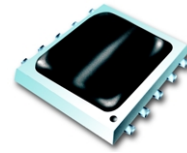
Level 13 (LO Power +13 dBm) 2800 to 8000 MHz

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



BLUE CELL™

CASE STYLE: DZ885

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

(Patent pending)

Mixer Electrical Specifications ($T_{AMB} = -55^{\circ}\text{C}$ 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 $f_L - f_U$	IF	$\bar{x}$	σ	Max.	Typ.	Min.	Typ.	Min.		
MCA1-80MH	2800-8000	DC-1250									
	2800-5000	DC-1250	5.5	0.2	8.2	27	20	12	7	19	0.6
	5000-8000	DC-1250	5.7	0.2	8.7	27	17	35	13	18	0.5

1dB Compr.: +9 dBm typ.

E= $[(IP3(\text{dBm}) - LO \text{ Power}(\text{dBm}))]/10$

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

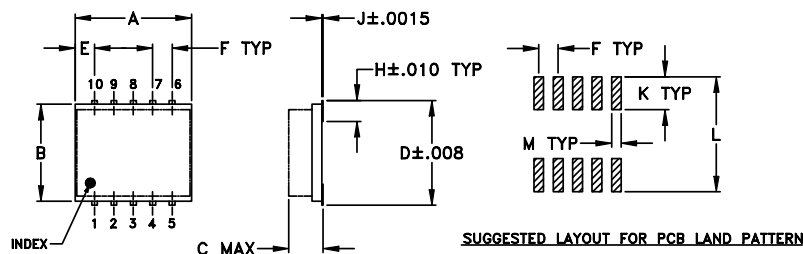
Pin Connections

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

Maximum Ratings

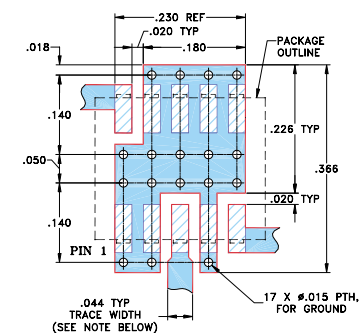
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power	50mW
IF Current	40mA

Outline Drawing



TOLERANCES
 2 PL DECIMALS ± 0.01
 3 PL DECIMALS ± 0.005
 UNLESS OTHERWISE SPECIFIED

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



NOTE: TRACE WIDTH IS SHOWN FOR ROGERS R04350 WITH DIELECTRIC THICKNESS $0.020" \pm 0.0015"$, 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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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	Isolation L-R	Isolation L-I	VSWR LO port	VSWR RF port
RF	LO	(dB)	(dB)	(dB)	(:1)	(:1)
MHz	MHz	LO	LO	LO	LO	LO
		+13 dBm	+13 dBm	+13 dBm	+13 dBm	+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

