

Ceramic

Frequency Mixer WIDE BAND

MCA1-60MH+

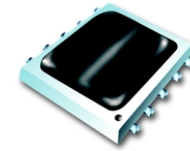
Level 13 (LO Power +13 dBm) 1600 to 6000 MHz

Features

- low conversion loss, 6.2 dB typ.
- wide bandwidth, 1600 to 6000 MHz
- useable to 8 GHz
- IF, DC to 2000 MHz
- LTCC double balanced mixer
- aqueous washable
- low cost
- low profile, 0.08"

Applications

- PCN
- defense & weather radar
- WCDMA
- defense communications



CASE STYLE: DZ885
PRICE: \$8.95 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_{AMB}=-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 _L -f _U	IF	\bar{x}	σ	Max.	Typ.	Min.	Typ.	Min.		
MCA1-60MH+	1600-4400	DC-2000	6.9	0.1	8.5*	32	25	17	—	15	0.2
	4400-6000	DC-2000	6.0	0.1	8.5*	22	18	15	—	15	0.2

1dB Compr.: +9 dBm typ.
E= [(IP3(dBm)-LO Power(dBm)]/10
• Conversion loss at 30 MHz IF, increases with IF frequency. See Graphs

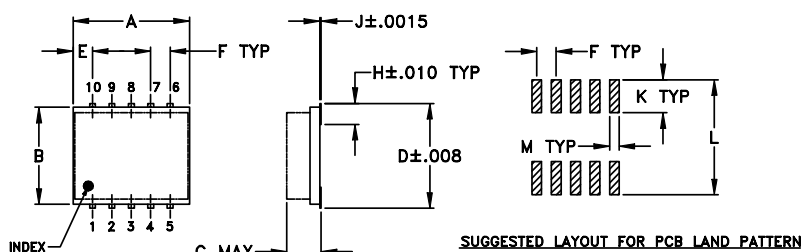
Pin Connections

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

Maximum Ratings

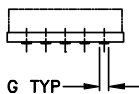
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power	200mW
IF Current	40mA

Outline Drawing



SUGGESTED LAYOUT FOR PCB LAND PATTERN

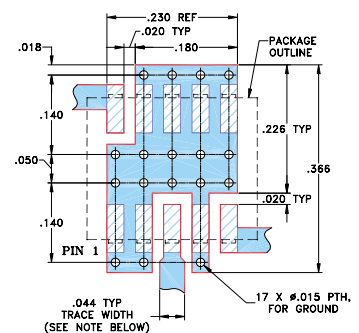
TOLERANCES
2 PL DECIMALS ±.01
3 PL DECIMALS ±.005
UNLESS OTHERWISE SPECIFIED



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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Typical Performance Data at 25°C

Frequency		Conversion Loss (dB) LO +13 dBm	Isolation L-R (dB) LO +13 dBm	Isolation L-I (dB) LO +13 dBm	VSWR LO port (:1) LO +13 dBm	VSWR RF port (:1) LO +13 dBm
RF MHz	LO MHz					
1600.00	1630.00	5.80	34.40	18.22	4.29	2.36
1800.00	1830.00	5.69	40.40	20.40	3.06	2.50
2000.00	2030.00	5.71	34.08	20.59	2.20	2.85
2400.00	2430.00	5.71	29.81	17.48	1.48	2.56
2600.00	2630.00	5.66	31.17	17.47	1.68	2.51
2800.00	2830.00	6.40	33.79	17.35	2.07	3.54
3000.00	3030.00	7.00	32.33	17.15	2.75	4.90
3200.00	3230.00	6.83	31.52	17.08	3.90	3.71
3400.00	3430.00	6.42	31.43	16.73	4.56	3.42
3600.00	3630.00	6.01	31.58	15.66	4.51	3.10
3800.00	3830.00	6.01	32.37	16.98	6.19	2.53
4000.00	4030.00	6.35	32.97	18.41	4.62	2.23
4400.00	4430.00	6.15	30.70	18.49	4.58	2.54
4600.00	4630.00	5.89	28.56	18.16	4.46	2.31
4800.00	4830.00	6.68	28.20	18.36	2.50	2.52
5000.00	5030.00	5.94	25.23	18.75	1.19	2.46
5200.00	5230.00	5.87	23.87	19.82	1.58	2.58
5600.00	5630.00	6.30	24.95	15.42	3.97	2.72
5800.00	5830.00	6.24	24.65	13.88	6.41	3.33
6000.00	6030.00	7.10	23.11	12.81	13.10	4.37

Performance Charts

