

# Frequency Mixer

Level 10 (LO Power+10 dBm) 3500 to 3600 MHz

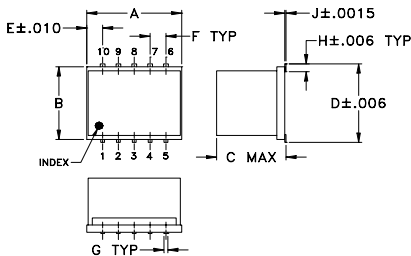
## Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
LO & RF Power	20 dBm
IF Current	40 mA

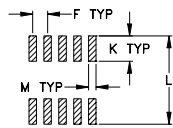
## Pin Connections

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

## Outline Drawing



### PCB Land Pattern



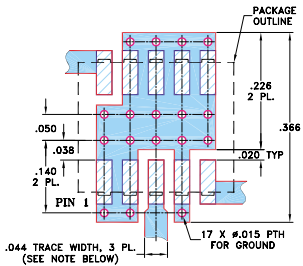
Suggested Layout,  
Tolerance to be within  $\pm .002$



## Outline Dimensions ( $\frac{\text{inch}}{\text{mm}}$ )

A	B	C	D	E	F	G
.30	.250	.190	.262	.050	.050	.012
7.62	6.35	4.83	6.66	1.27	1.27	0.30
H	J	K	L	M		wt
.027	.004	.085	.296	.030		grams
0.69	0.10	2.16	7.52	0.76		0.5

**Demo Board MCL P/N: TB-144**

### Suggested PCB Layout (PL-045)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS 4043SS08 WITH DIELECTRIC THICKNESS .020"  $\pm$  .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

## Features

- high IP3, 25 dBm typ.
- excellent L-R isolation, 40 dB typ.
- excellent 1dB compression, RF>LO power
- industry standard foot print
- LTCC design for excellent temperature stability performance
- repeatability and small size
- aqueous washable
- double balanced mixer
- low price
- protected by US Patent 6,959,180

## Applications

- line of sight links
- satellite communications

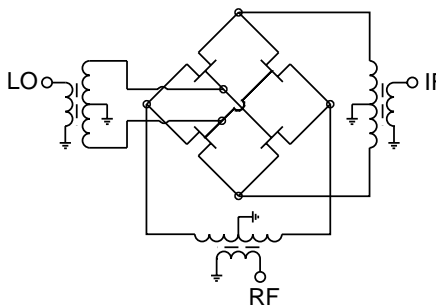
### Electrical Specifications (T<sub>AMB</sub>=-55°C to 100°C)

FREQUENCY (MHz)			IP3 (dBm)	RF in at 1 dB compr. (dBm)	CONVERSION LOSS (dB)		LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)	
RF	LO	IF			Typ	Max.	Typ	Min.	Typ	Min.
3500-3600	3070-3170	380-480	25	10	8.4	9.4	40	20	28	15

### Typical Performance Data

Frequency (MHz)		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)	IP3 (dBm)
RF	LO	LO +10dBm	LO +10dBm	LO +10dBm	LO +10dBm	LO +10dBm	LO +10dBm
3500.00	3070.00	7.80	41.22	23.58	2.19	3.39	28.17
3510.00	3080.00	7.94	40.63	23.95	2.33	3.47	28.40
3520.00	3090.00	8.24	40.34	24.42	2.49	3.49	28.88
3530.00	3100.00	8.20	40.82	24.95	2.62	3.41	28.32
3540.00	3110.00	8.07	41.89	25.31	2.74	3.33	27.40
3550.00	3120.00	8.09	42.50	25.65	2.86	3.29	27.46
3560.00	3130.00	7.98	43.54	25.97	3.01	3.29	26.67
3570.00	3140.00	7.61	45.88	26.25	3.19	3.33	25.65
3580.00	3150.00	7.39	49.96	26.64	3.42	3.43	25.21
3590.00	3160.00	7.54	53.03	27.16	3.70	3.48	24.74
3600.00	3170.00	7.80	54.56	27.74	3.97	3.52	24.69

## Electrical Schematic



CASE STYLE: DZ883

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

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

*The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.*

## Performance Charts

# MCA-36FLH+ MCA-36FLH

