

# High IP3 Frequency Mixer

## MCA-36FLH+ MCA-36FLH

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

### 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
- WiMAX

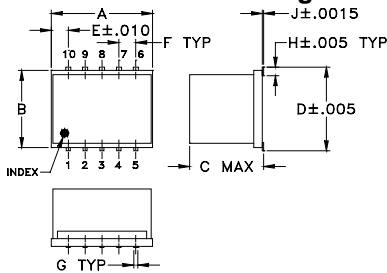
CASE STYLE: DZ883

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

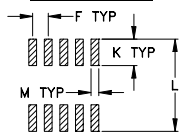
**+ RoHS compliant in accordance with EU Directive (2002/95/EC)**

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

### Outline Drawing



### PCB Land Pattern

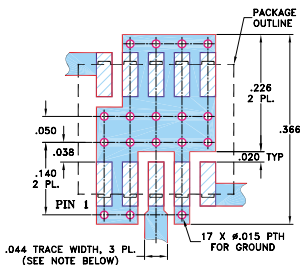


Suggested Layout.  
Tolerance to be within ±.002

### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.30	.250	.190	.266	.050	.050	.012
7.62	6.35	4.83	6.76	1.27	1.27	0.30
H	J	K	L	M		wt
.029	.004	.085	.296	.030		grams
0.74	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 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

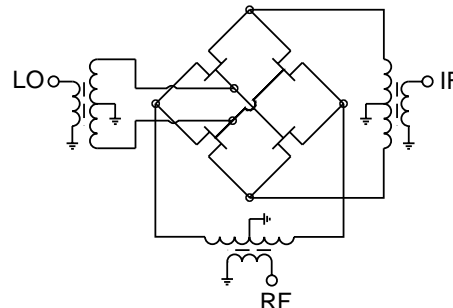
### Electrical Specifications (T<sub>AMB</sub>=-55°C to 100°C)

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



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RF/IF MICROWAVE COMPONENTS

REV. E  
M102713  
ED-9488C/2  
MCA-36FLH  
DJ/TD/CP  
080305  
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## Performance Charts

