

# High IP3 Frequency Mixer

## MCA-30FH+

Level 17 LO Power+17 dBm 2960 to 3060 MHz



CASE STYLE: DZ883  
PRICE: \$11.95 ea. QTY.(1-9)

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

The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

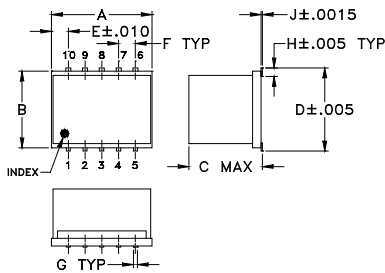
### Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
LO & RF Power	20 dBm
Permanent damage may occur if any of these limits are exceeded.	

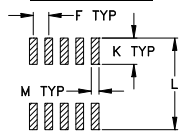
### Pin Connections

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

### Outline Drawing



#### PCB Land Pattern

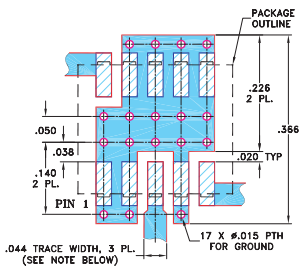


Suggested L layout,  
Tolerance to be within ±.002

### 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.  
3. DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)  
4. DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

### Features

- high IP3, 34 dBm typ.
- good L-R isolation, 37 dB typ.
- excellent 1 dB 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

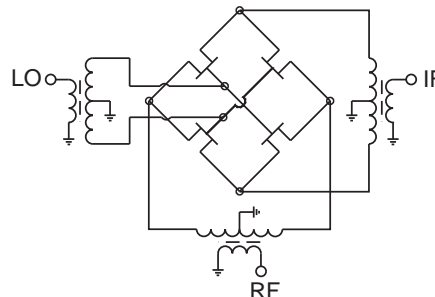
### Electrical Specifications (T<sub>AMB</sub>=-55°C to 100°C)

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.	Min.	Typ. Max.	Typ. Min.	Typ. Min.
2960-3060	2780-2880	130-230	34	17	7.4 8.9	37 20	27 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 +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm
2960.00	2780.00	7.50	38.58	31.14	1.89	2.64	36.07
2970.00	2790.00	7.46	38.53	31.27	1.89	2.50	36.21
2980.00	2800.00	7.39	38.51	31.36	1.92	2.51	35.72
2990.00	2810.00	7.35	38.24	31.40	1.97	2.59	35.37
3000.00	2820.00	7.35	38.02	31.45	2.03	2.62	35.57
3010.00	2830.00	7.36	37.94	31.51	2.09	2.55	35.47
3020.00	2840.00	7.38	38.04	31.60	2.12	2.42	34.92
3030.00	2850.00	7.42	38.15	31.66	2.14	2.29	34.91
3040.00	2860.00	7.43	38.17	31.70	2.16	2.23	34.79
3050.00	2870.00	7.44	38.19	31.66	2.17	2.28	34.93
3060.00	2880.00	7.45	38.48	31.62	2.19	2.45	35.20

### Electrical Schematic



**Mini-Circuits®**  
ISO 9001 ISO 14001 AS 9100 CERTIFIED

For detailed performance specs & shopping online see web site

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IF/RF MICROWAVE COMPONENTS

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuits' applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp).

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