

Ceramic

# Frequency Mixer WIDE BAND

## MCA1-24LH+

Level 10 (LO Power+10 dBm) 300 to 2400 MHz

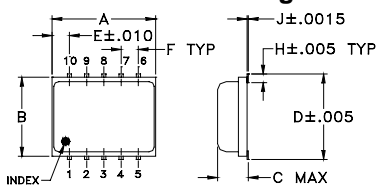
### Maximum Ratings

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

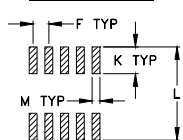
### Pin Connections

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

### Outline Drawing



### PCB Land Pattern



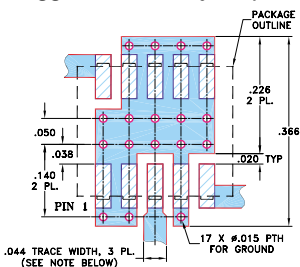
Suggested Layout,  
Tolerance to be within ±.002

### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.30	.250	.085	.266	.050	.050	.012
7.62	6.35	2.16	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	0.25	

### 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

### Features

- wide bandwidth, 300 to 2400 MHz
- low conversion loss, 6.5 dB typ.
- excellent L-R isolation, 40 dB typ.
- LTCC double balanced mixer
- aqueous washable
- low cost
- low profile, 0.08"
- protected by US Patent 7,027,795

### Applications

- cellular
- PCN
- defense & weather radar
- UHF TV
- WCDMA
- defense communications



CASE STYLE: DZ885  
PRICE: \$5.95 ea. QTY (10-49)

+ 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.

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

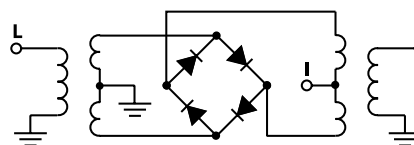
FREQUENCY (MHz)		CONVERSION LOSS (dB)			LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 at center band (dBm)
LO/RF f <sub>L</sub> -f <sub>U</sub>	IF	$\bar{X}$	$\sigma$	Max.	Typ.	Min.	Typ.	Min.	Typ.
300-2400	DC-700	6.5	0.1	8.9	40	25	22	12	13

1 dB COMPR. +5 dBm typ.

### Typical Performance Data

Frequency (MHz)		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
RF	LO	LO +10dBm	LO +10dBm	LO +10dBm	LO +10dBm	LO +10dBm
301.00	331.00	5.75	47.96	22.24	1.84	6.52
401.00	431.00	5.00	41.59	24.26	1.46	2.34
501.00	531.00	6.40	43.45	27.04	3.74	1.38
701.00	731.00	6.34	43.78	27.28	3.52	2.43
901.00	931.00	7.26	42.42	26.85	4.31	3.80
1151.00	1181.00	7.32	44.15	30.33	4.79	4.23
1301.00	1331.00	7.16	42.78	34.33	3.38	3.84
1501.00	1531.00	5.61	40.19	29.17	1.87	2.26
1701.00	1731.00	5.14	36.19	25.42	1.46	1.40
2001.00	2031.00	6.07	33.56	22.01	2.01	2.77
2401.00	2431.00	6.73	33.38	25.12	2.32	3.97

### Electrical Schematic



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RF/IF MICROWAVE COMPONENTS

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070423  
Page 1 of 2

