

Ceramic

# Frequency Mixer WIDE BAND

## MCA1-42MH+

Level 13 (LO Power+13 dBm) 1000 to 4200 MHz

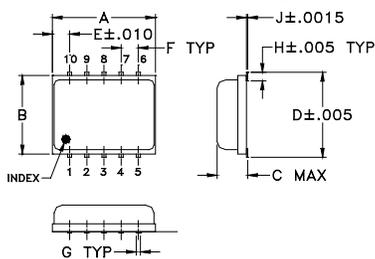
### Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power	200 mW
IF Current	40 mA
Permanent damage may occur if any of these limits are exceeded.	

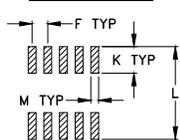
### Pin Connections

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

### Outline Drawing



### PCB Land Pattern

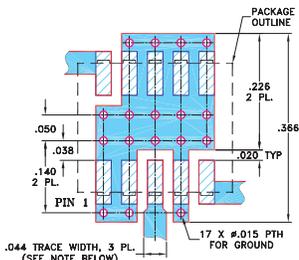


Suggested Layout,  
Tolerance to be within ±.002

### 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, 1000 to 4200 MHz
- low conversion loss, 6.2 dB typ.
- excellent L-R isolation, 35 dB typ.
- LTCC double balanced mixer
- aqueous washable
- low cost
- low profile, 0.08"
- protected by US Patent 7,027,795

### Applications

- cellular
- PCN
- fixed satellite
- WCDMA
- defense radar
- defense communications



CASE STYLE: DZ885  
PRICE: \$7.95 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)

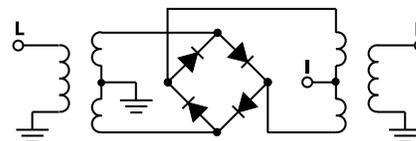
FREQUENCY (MHz)	CONVERSION LOSS (dB)	LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 at center band (dBm)			
		Typ.	Min.	Typ.	Min.				
LO/RF f <sub>i</sub> -f <sub>u</sub>	$\bar{X}$ $\sigma$ Max.	Typ.	Min.	Typ.	Min.	Typ.			
1000-4200	DC-1500	6.2	0.1	8.9	35	20	20	10	16

1 dB COMPR. +9 dBm typ.

### Typical Performance Data

Frequency (MHz)	Conversion Loss (dB)	Isolation (dB)		VSWR RF Port (:1)	VSWR LO Port (:1)
		L-R (dB)	L-I (dB)		
RF	LO	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm
1000.1	1030.1	6.41	38.13	22.25	2.53
1500.1	1530.1	5.46	31.57	22.23	3.23
1750.1	1780.1	5.77	32.48	20.81	2.57
2000.1	2030.1	5.96	33.34	21.32	2.78
2500.1	2530.1	5.99	32.94	21.44	2.45
3000.1	3030.1	5.22	32.62	21.48	2.24
3500.0	3530.1	5.84	30.35	23.79	2.50
4000.1	4030.1	7.32	33.89	20.18	4.57
4200.1	4230.1	8.14	37.60	17.38	4.90

### Electrical Schematic



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

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The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: [www.minicircuits.com](http://www.minicircuits.com)

IF/RF MICROWAVE COMPONENTS

REV. F  
M102713  
ED-10107/13  
MCA1-42MH+  
DJ/RS/CP  
070423  
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