

# Frequency Mixer WIDE BAND

## MCA1-42+

Level 7 (LO Power+7 dBm) 1000 to 4200 MHz

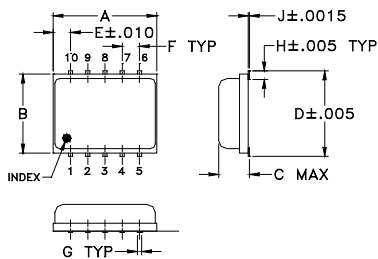
### Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power	50 mW
IF Current	40 mA
Permanent damage may occur if any of these limits are exceeded.	

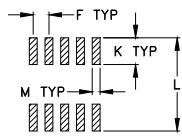
### Pin Connections

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

### Outline Drawing



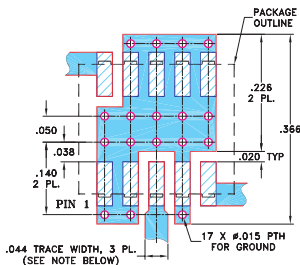
### PCB Land Pattern



### 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

### Notes

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.  
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.  
C. The parts covered by this specification document 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/WCLStore/terms.jsp](http://www.minicircuits.com/WCLStore/terms.jsp)

### Features

- wide bandwidth, 1000 to 4200 MHz
- low conversion loss, 6.1 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

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

### Recommended Replacement: MAC-42+

- Footprint Compatible
- MIL Level Reliability
- Price \$6.95 Qty. (10)



[Click here for data sheet](#)

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

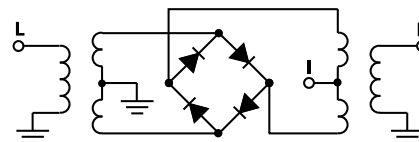
FREQUENCY (MHz)	CONVERSION LOSS (dB)			LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 at center band (dBm)	
	LO/RF f <sub>i</sub> -f <sub>o</sub>	$\bar{X}$	$\sigma$	Max.	Typ.	Min.	Typ.		Min.
1000-4200	DC-1500	6.1	0.1	8.9	35	23	20	12	10

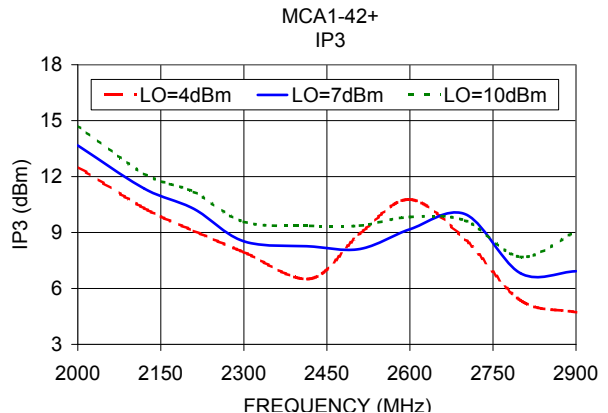
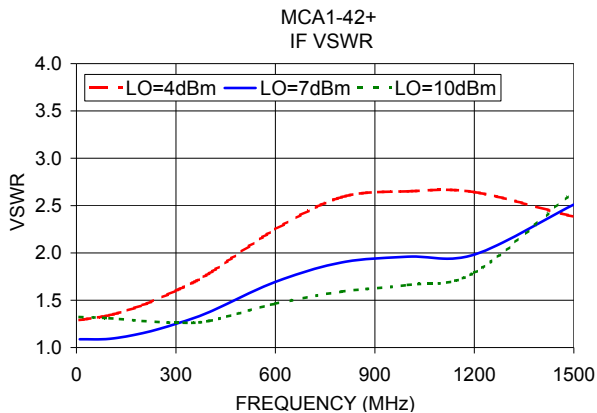
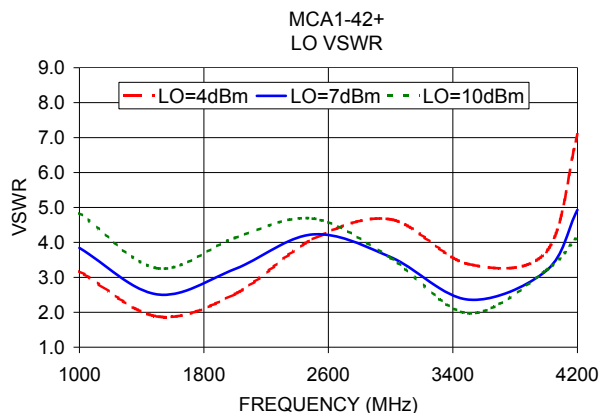
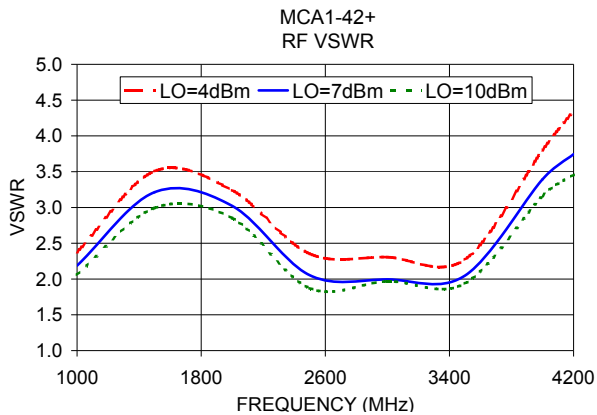
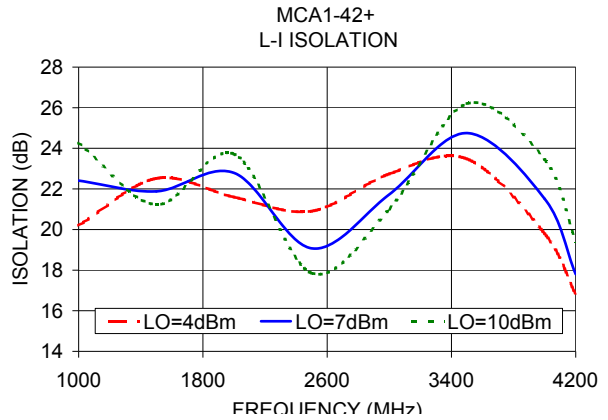
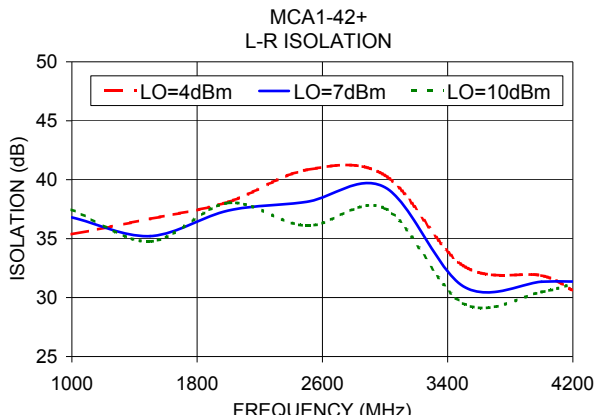
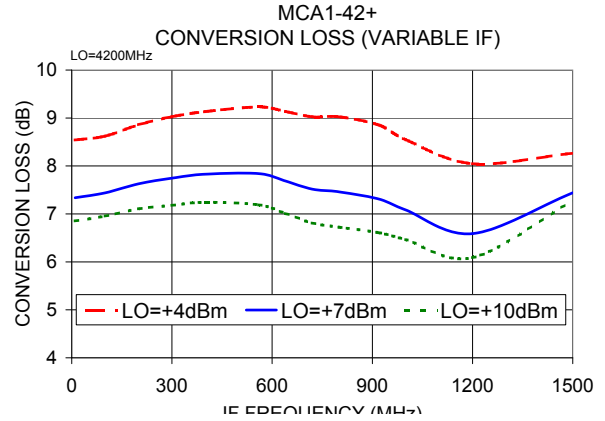
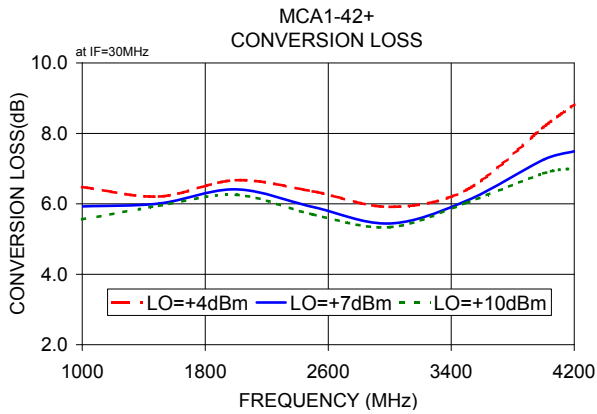
1 dB COMPR. +1 dBm typ.

### Typical Performance Data

Frequency (MHz)	Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
1000.00	5.93	36.80	22.41	2.19	3.84
1500.00	6.01	35.22	21.88	3.21	2.51
2000.00	6.41	37.39	22.79	3.02	3.24
2500.00	5.91	38.13	19.07	2.05	4.23
3000.00	5.44	39.35	21.73	2.00	3.58
3500.00	6.09	30.96	24.75	2.05	2.36
4000.00	7.25	31.34	21.51	3.39	3.19
4200.00	7.49	31.37	17.80	3.74	4.93

### Electrical Schematic





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