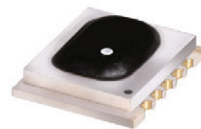


Ceramic

# Frequency Mixer WIDE BAND

## MCA1T-60MH+

Level 13 (LO Power+13 dBm) 1700 to 6000 MHz



CASE STYLE: DZ885-2  
PRICE: \$7.45 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.

### Maximum Ratings

Operating Temperature	-40°C to 85°C
Storage Temperature	-40°C to 85°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

### Features

- wide bandwidth, 1700 to 6000 MHz
- useable to 8000 MHz
- low conversion loss, 6.2 dB typ.
- IF, DC to 2000 MHz
- LTCC double balanced mixer
- aqueous washable
- low cost
- low profile, 0.095"
- protected by US Patent 7,027,795
- additional patent pending

### Applications

- PCN
- defense & weather radar
- WCDMA
- defense communications

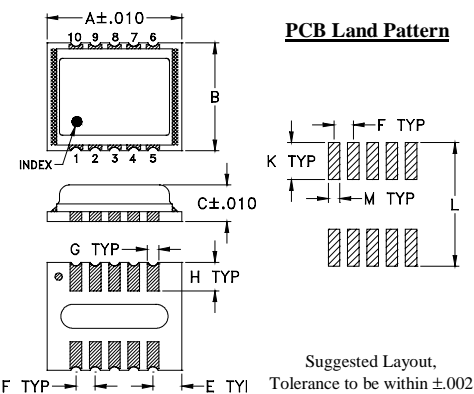
### Electrical Specifications (T<sub>AMB</sub>=-40°C to 85°C)

FREQUENCY (MHz)		CONVERSION LOSS (dB)			LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 at center band (dBm)
LO/RF f <sub>c</sub> -f <sub>u</sub>	IF	$\bar{X}$	$\sigma$	Max.	Typ.	Min.	Typ.	Min.	Typ.
1700-4400	DC-2000	6.9	0.1	8.5*	32	25	17	—	15
4400-6000	DC-2000	6.0	0.1	8.5*	22	18	15	—	15

1 dB COMPR. +9 dBm typ.

\*Conversion loss at 30 MHz IF, increases with IF frequency. See Graphs

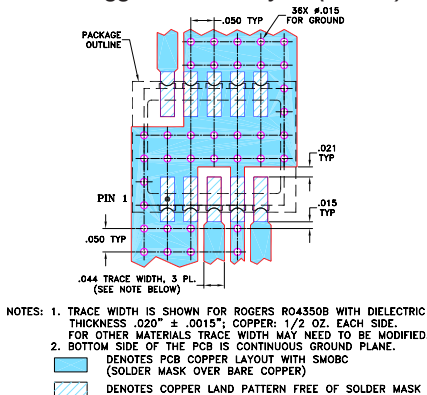
### Outline Drawing



### Outline Dimensions (inch/mm)

A	B	C	E	F	G
.350	.280	.095	.075	.050	.030
8.89	7.11	2.41	1.91	1.27	0.76
H	K	L	M	wt	
.074	.096	.321	.030	grams	
1.88	2.44	8.15	0.76	0.21	

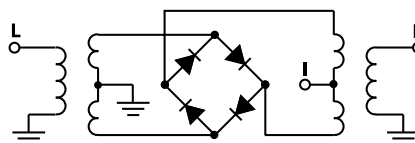
### Demo Board MCL P/N: TB-493+ Suggested PCB Layout (PL-288)



### 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 +13dBm	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm
1600.00	1630.00	5.80	34.40	18.22	2.36	4.29
1800.00	1830.00	5.69	40.40	20.40	2.50	3.06
2000.00	2030.00	5.71	34.08	20.59	2.85	2.20
2400.00	2430.00	5.71	29.81	17.48	2.56	1.48
2600.00	2630.00	5.66	31.17	17.47	2.51	1.68
2800.00	2830.00	6.40	33.79	17.35	3.54	2.07
3000.00	3030.00	7.00	32.33	17.15	4.90	2.75
3200.00	3230.00	6.83	31.52	17.08	3.71	3.90
3400.00	3430.00	6.42	31.43	16.73	3.42	4.56
3600.00	3630.00	6.01	31.58	15.66	3.10	4.51
3800.00	3830.00	6.01	32.37	16.98	2.53	6.19
4000.00	4030.00	6.35	32.97	18.41	2.23	4.62
4400.00	4430.00	6.15	30.70	18.49	2.54	4.58
4600.00	4630.00	5.89	28.56	18.16	2.31	4.46
4800.00	4830.00	6.68	28.20	18.36	2.52	2.50
5000.00	5030.00	5.94	25.23	18.75	2.46	1.19
5200.00	5230.00	5.87	23.87	19.82	2.58	1.58
5600.00	5630.00	6.30	24.95	15.42	2.72	3.97
5800.00	5830.00	6.24	24.65	13.88	3.33	6.41
6000.00	6030.00	7.10	23.11	12.81	4.37	13.10

### Electrical Schematic



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

For detailed performance specs & shopping online see web site

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine Provides ACTUAL Data Instantly at [minicircuits.com](http://minicircuits.com)

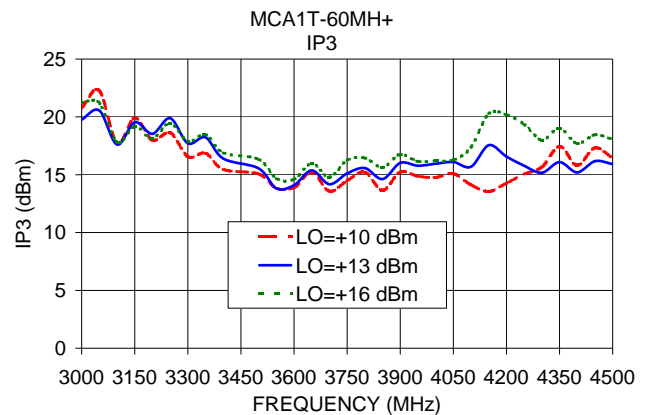
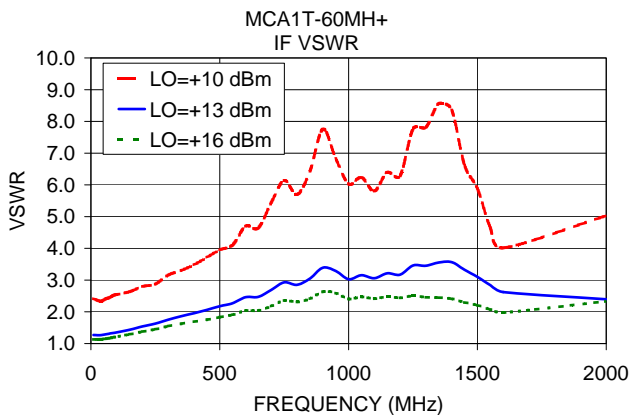
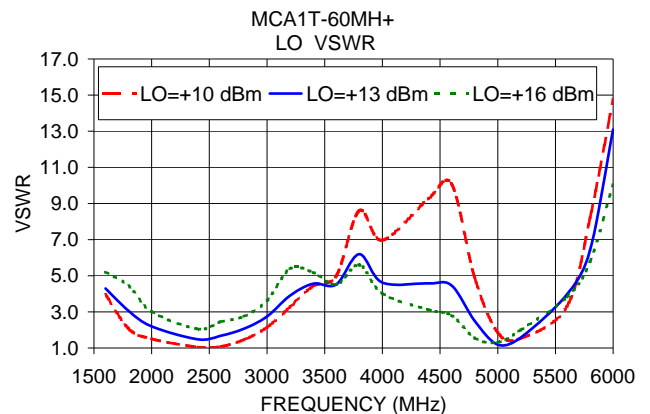
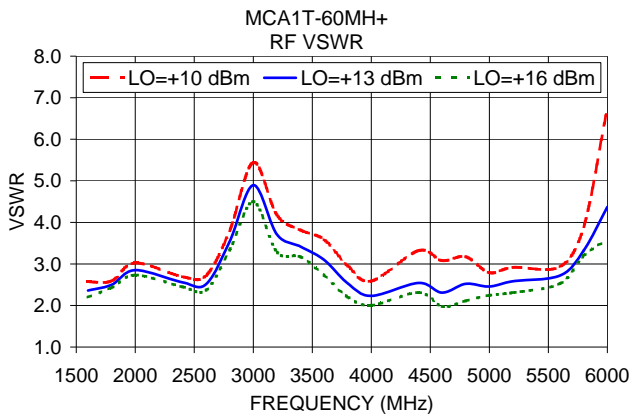
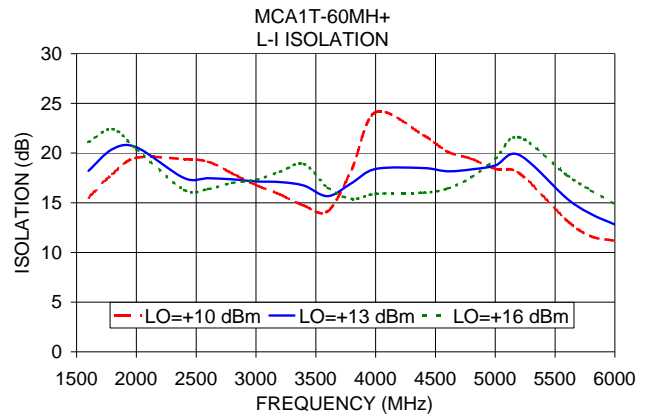
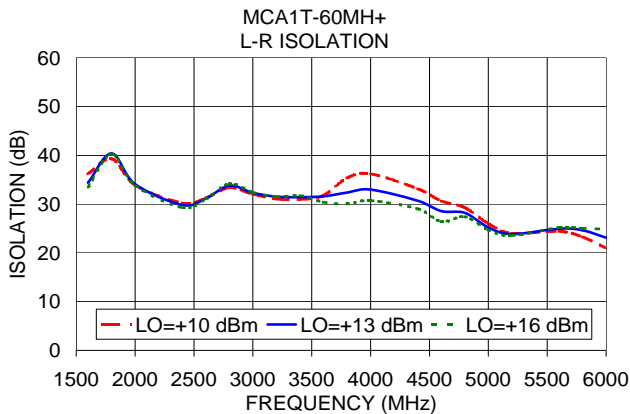
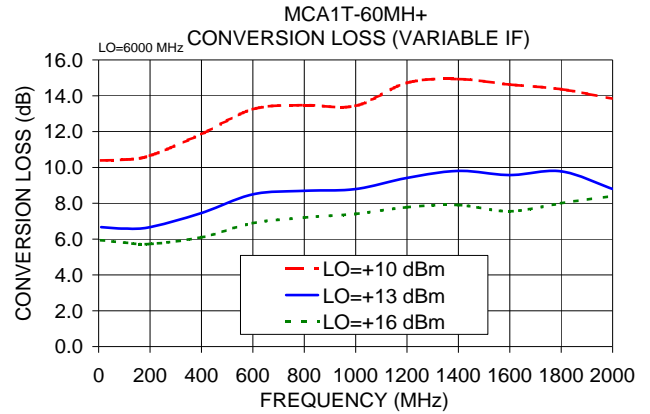
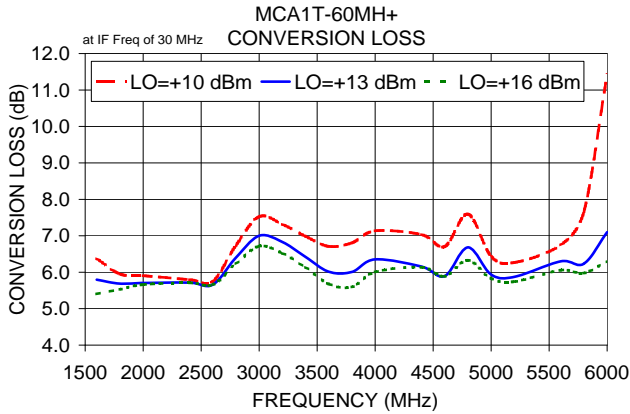
IF/RF MICROWAVE COMPONENTS

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-Circuit's 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).

REV. OR  
M124560  
MCA1T-60MH+  
DJ/RS/CP  
100322  
Page 1 of 2

# Performance Charts

# MCA1T-60MH+



For detailed performance specs & shopping online see web site

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 *The Design Engineers Search Engine* Provides ACTUAL Data Instantly at [minicircuits.com](http://minicircuits.com)

**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-Circuit's 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).