

Frequency Mixer WIDE BAND

MCA1-60LH+

Level 10 (LO Power+10 dBm) 1700 to 6000 MHz

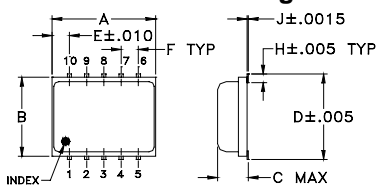
Maximum Ratings

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

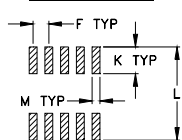
Pin Connections

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

Outline Drawing



PCB Land Pattern

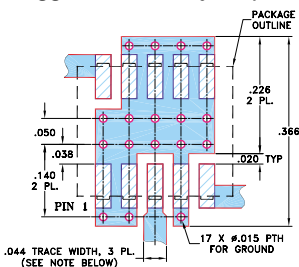


Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch)

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, 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, 0.08"
- protected by US Patent 7,027,795

Applications

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

Electrical Specifications (T_{AMB}=-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 _c -f _u	IF	\bar{X} σ Max.	Typ.	Min.	Typ.	Min.		
1700-4400	DC-2000	6.6	0.1	7.9*	35	23	17	—	13
4400-6000	DC-2000	6.0	0.1	8.3*	27	20	21	—	11

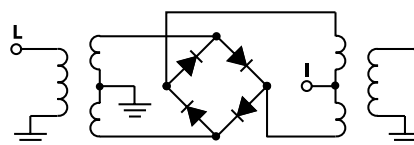
1 dB COMPR. +5 dBm typ.

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

Typical Performance Data

Frequency (MHz)	Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
1700.00	6.12	31.11	17.21	2.04	3.80
1900.00	5.58	41.49	18.61	2.25	2.23
2100.00	5.56	36.04	17.55	2.45	1.85
2500.00	5.57	34.25	17.48	2.19	1.72
2700.00	5.54	36.00	18.36	2.22	1.90
2900.00	5.92	40.21	18.81	3.68	2.18
3100.00	6.80	36.38	18.44	5.02	2.63
3300.00	6.75	35.64	17.41	3.64	2.73
3500.00	6.51	34.52	14.61	4.06	3.26
3700.00	6.81	34.43	12.04	3.26	3.62
3900.00	6.24	35.17	14.87	2.71	3.93
4100.00	6.49	37.36	15.93	2.04	2.62
4300.00	6.05	37.95	18.73	1.83	2.45
4500.00	5.97	34.27	19.90	1.93	2.66
4700.00	5.76	32.31	21.16	1.47	2.76
4900.00	6.58	34.11	22.13	2.70	1.96
5100.00	5.50	29.13	22.12	1.90	1.35
5300.00	5.92	27.47	22.67	2.24	1.37
5700.00	5.76	26.99	17.82	1.75	2.61
6000.00	6.73	26.82	11.81	2.14	6.10

Electrical Schematic



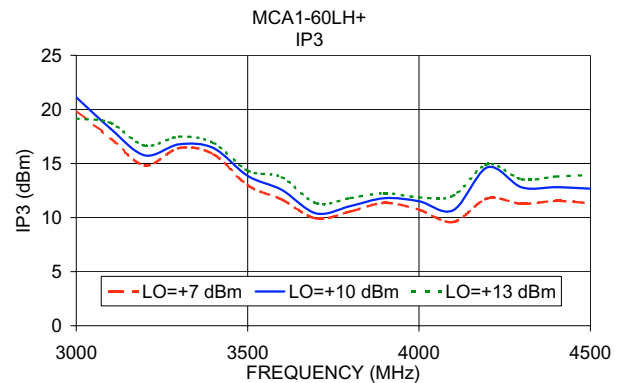
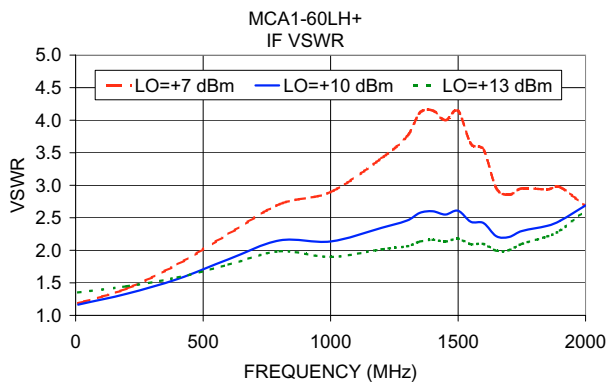
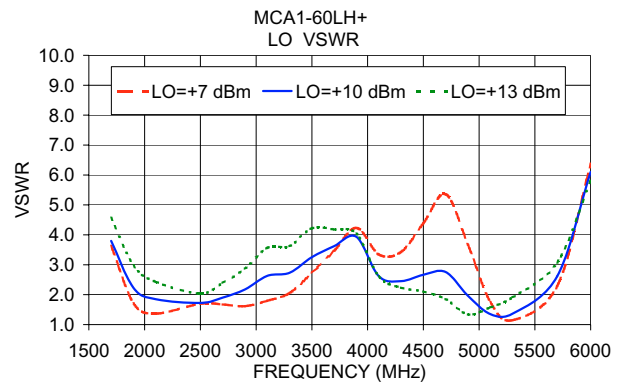
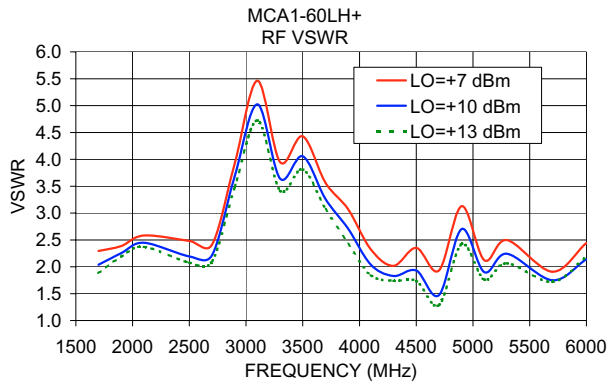
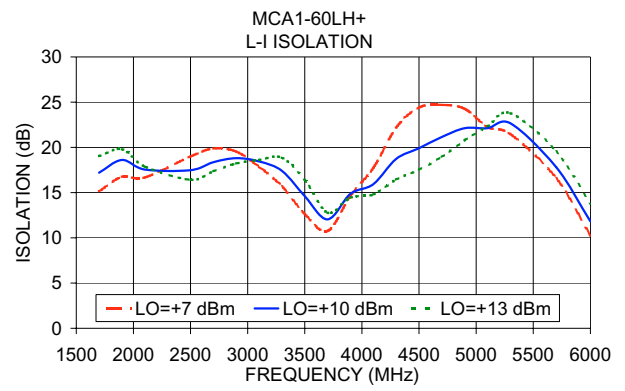
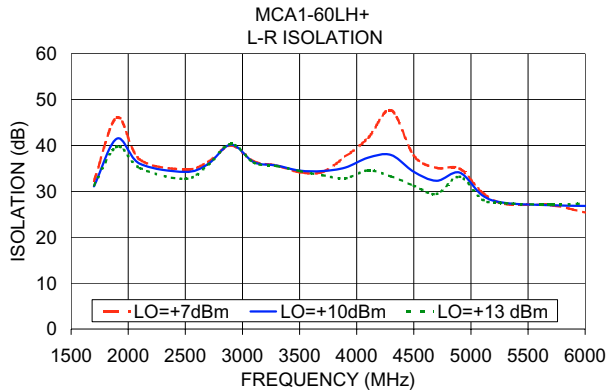
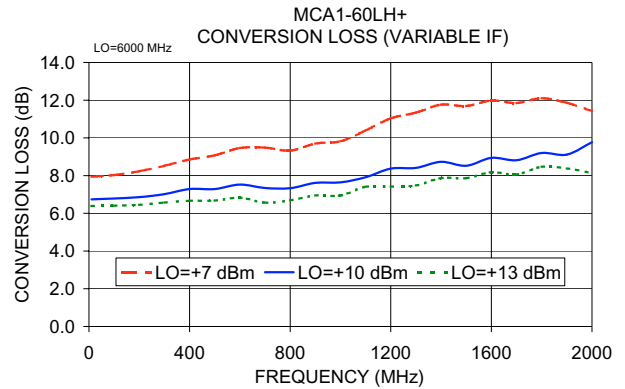
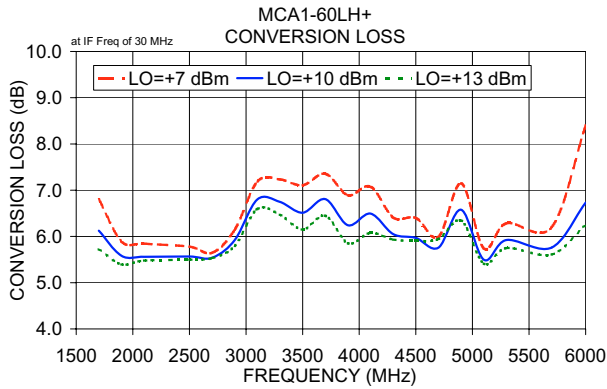
CASE STYLE: DZ885
PRICE: \$8.45 ea. QTY (10-49)

+ 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.

Performance Charts

MCA1-60LH+



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site



The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com

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