

Ceramic

Frequency Mixer WIDE BAND

Level 7 (LO Power+7 dBm) 1600 to 6000 MHz

MCA1-60+

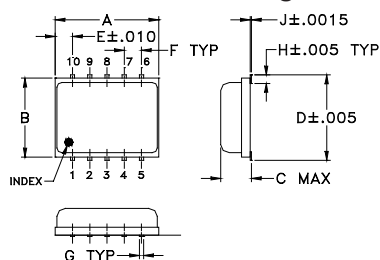
Maximum Ratings

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.	

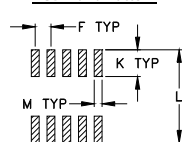
Pin Connections

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

Outline Drawing



PCB Land Pattern



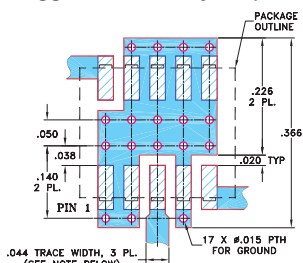
Suggested Layout,
Tolerance to be within ±.002

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	N	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, 1600 to 6000 MHz
- useable to 8000 MHz
- 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



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-60+

- Footprint Compatible
- MIL Level Reliability
- Price \$7.45 Qty. (10)

[Click here for datasheet!](#)



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 _L -f _U	IF	$\bar{X}$	σ	Max.	Typ.	Min.	Typ.	Min.	Typ.
1600-4400	DC-2000	6.3	0.2	8.3*	32	20	17	—	9
4400-6000	DC-2000	6.2	0.3	8.5*	23	17	18	—	8

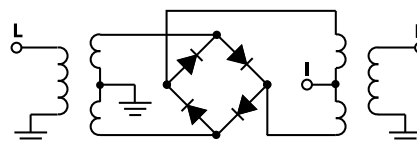
1 dB COMPR. +1 dBm typ.

*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)
RF	LO	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm
1600.00	1630.00	5.85	33.44	18.92	3.21	2.77
1800.00	1830.00	5.57	43.23	20.13	2.72	3.06
2000.00	2030.00	5.67	35.50	19.59	1.52	3.18
2300.00	2330.00	5.57	30.85	17.13	2.55	2.32
2500.00	2530.00	5.67	31.53	16.64	3.70	1.12
3000.00	3030.00	6.65	33.86	17.37	6.40	4.50
3300.00	3330.00	6.51	33.27	17.79	2.35	4.42
3500.00	3530.00	6.26	32.26	16.02	2.17	2.74
3800.00	3830.00	5.85	33.61	14.80	2.21	4.29
4000.00	4030.00	6.13	34.90	16.01	2.03	3.49
4300.00	4330.00	6.05	33.36	17.95	1.97	3.60
4500.00	4530.00	5.95	29.83	18.64	2.31	2.60
4700.00	4730.00	6.02	28.69	19.14	1.78	2.51
4900.00	4930.00	6.11	25.78	19.89	1.91	2.02
5000.00	5030.00	5.99	24.51	20.40	1.50	1.54
5200.00	5230.00	5.88	23.40	21.37	1.53	1.71
5300.00	5330.00	6.06	22.68	21.68	2.25	2.45
5500.00	5530.00	6.00	22.63	19.20	3.70	3.96
5700.00	5730.00	6.14	23.13	15.10	5.34	6.43
6000.00	6030.00	6.61	24.37	13.33	1.73	2.81

Electrical Schematic



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ISO 9001 ISO 14001 AS 9100 CERTIFIED

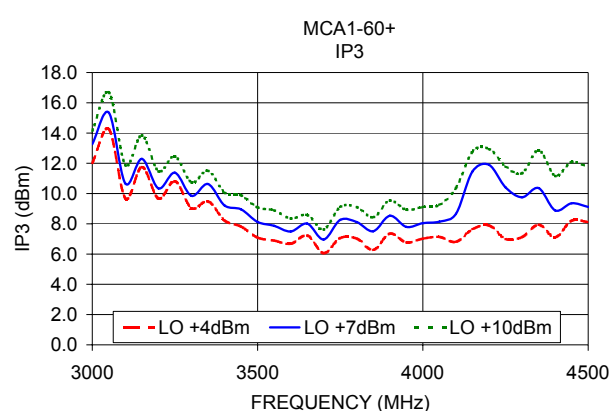
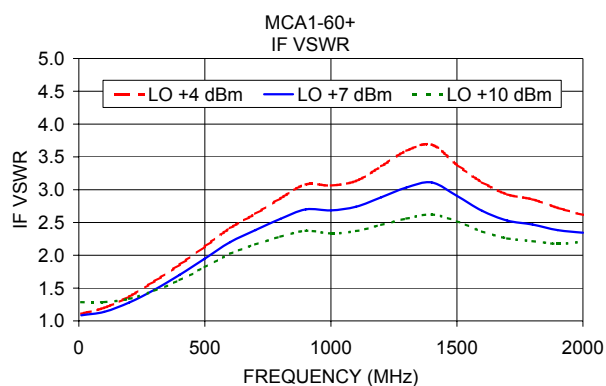
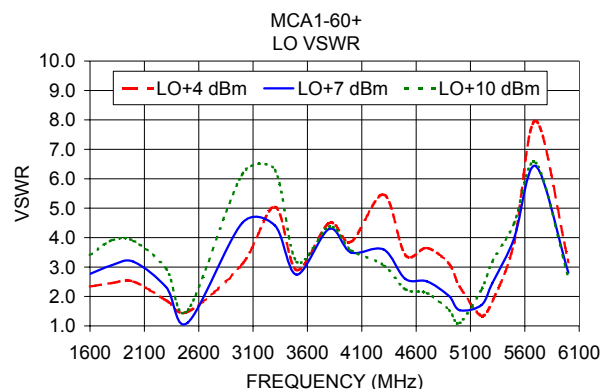
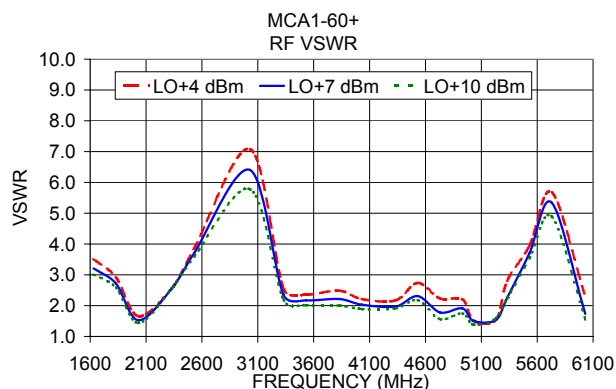
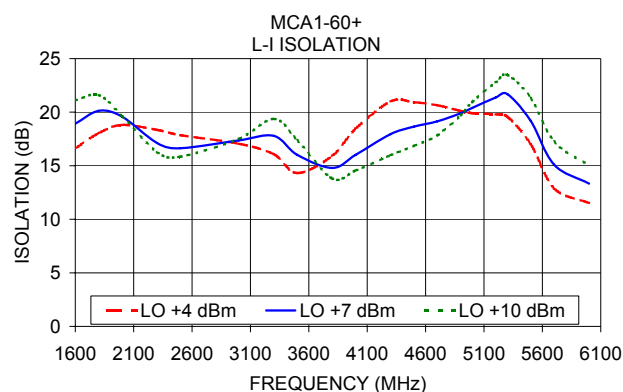
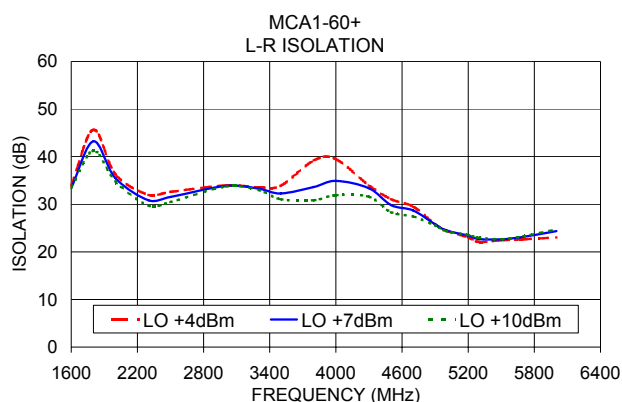
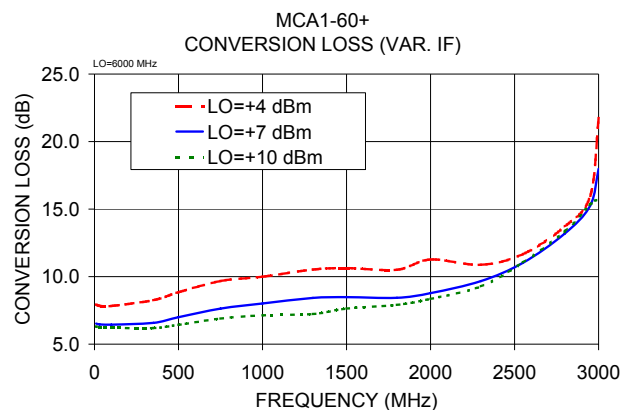
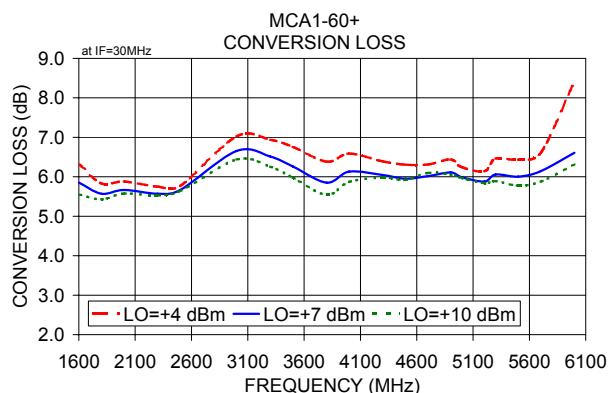
For detailed performance specs
& shopping online see web site

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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-Circuit's 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-Circuit's website at www.minicircuits.com/MCLStore/terms.jsp.

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Page 1 of 2



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