

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

### Maximum Ratings

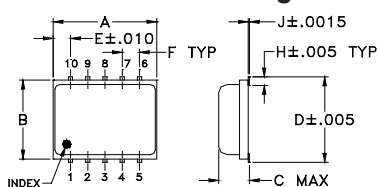
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power	50 mW
IF Current	40 mA

Permanent damage may occur if any of these limits are exceeded.

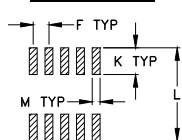
### Pin Connections

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

### Outline Drawing



### PCB Land Pattern

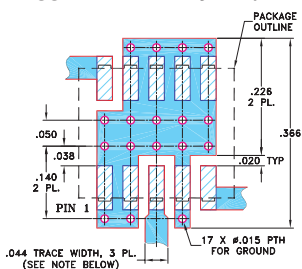


Suggested Layout,  
Tolerance to be within ±.002

### 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

### 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/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)

### 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

### +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



[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>c</sub> -f <sub>u</sub>	IF	$\bar{X}$ $\sigma$ Max.	Typ.	Min.	Typ.	Min.	
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

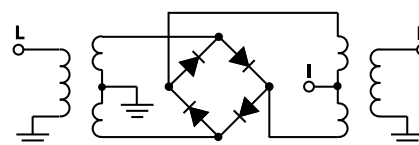
1 dB COMPR. +1 dBm typ.

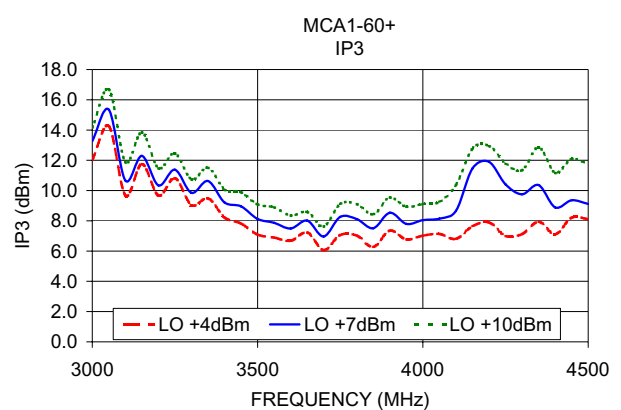
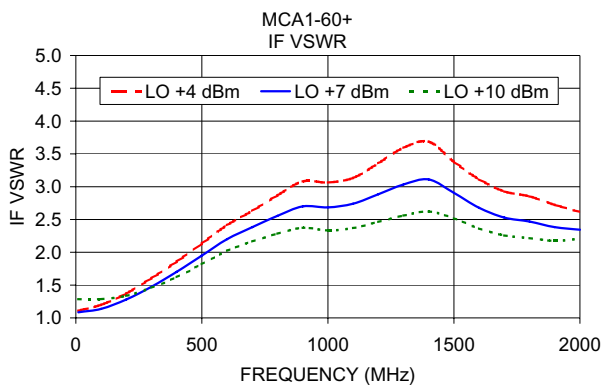
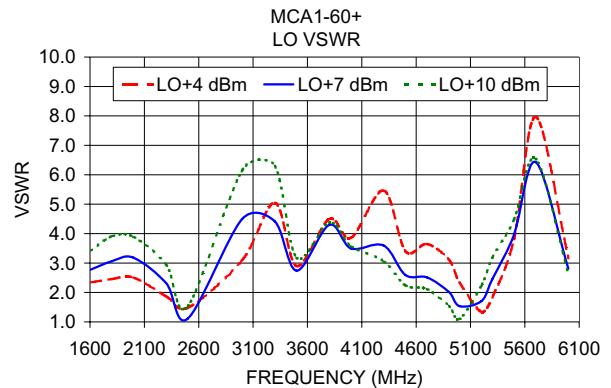
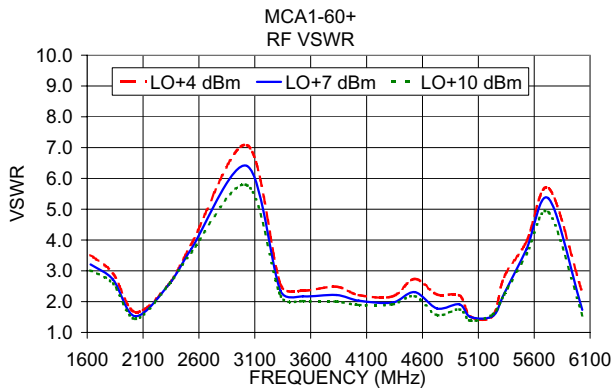
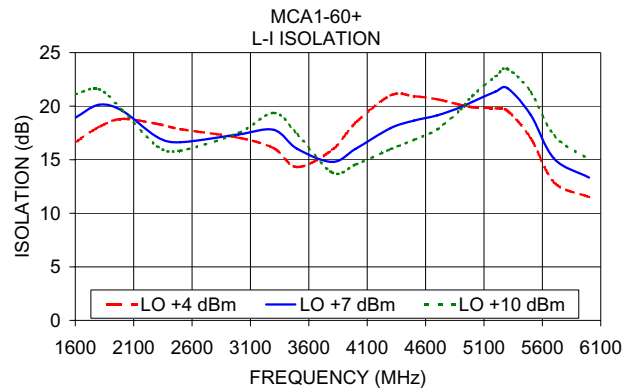
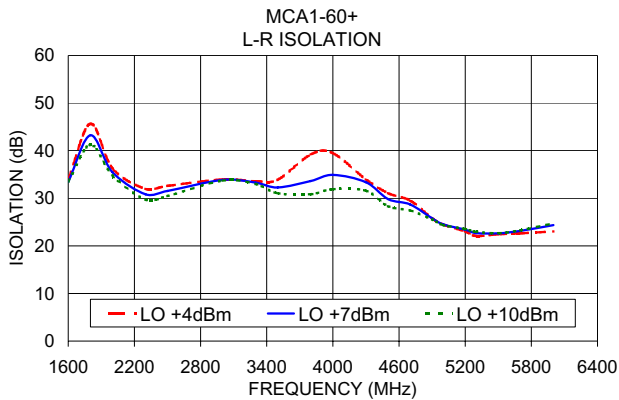
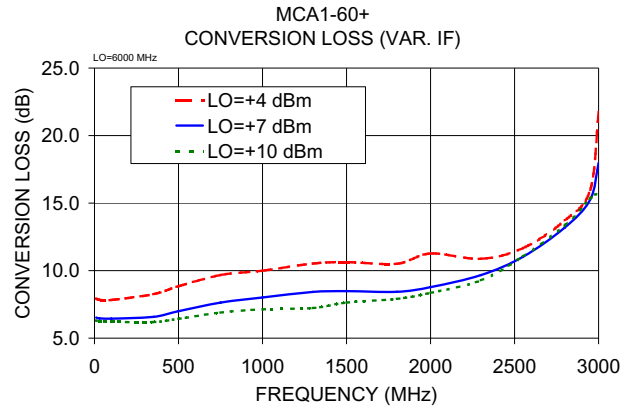
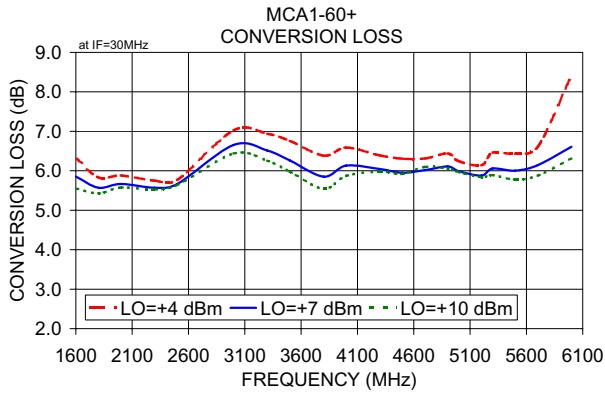
\*Conversion loss at 30 MHz IF, increases with IF frequency. See Graphs

### Typical Performance Data

Frequency (MHz)	Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
1600.00	5.85	33.44	18.92	3.21	2.77
1800.00	5.57	43.23	20.13	2.72	3.06
2000.00	5.67	35.50	19.59	1.52	3.18
2300.00	5.57	30.85	17.13	2.55	2.32
2500.00	5.67	31.53	16.64	3.70	1.12
3000.00	6.65	33.86	17.37	6.40	4.50
3300.00	6.51	33.27	17.79	2.35	4.42
3500.00	6.26	32.26	16.02	2.17	2.74
3800.00	5.85	33.61	14.80	2.21	4.29
4000.00	6.13	34.90	16.01	2.03	3.49
4300.00	6.05	33.36	17.95	1.97	3.60
4500.00	5.95	29.83	18.64	2.31	2.60
4700.00	6.02	28.69	19.14	1.78	2.51
4900.00	6.11	25.78	19.89	1.91	2.02
5000.00	5.99	24.51	20.40	1.50	1.54
5200.00	5.88	23.40	21.37	1.53	1.71
5300.00	6.06	22.68	21.68	2.25	2.45
5500.00	6.00	22.63	19.20	3.70	3.96
5700.00	6.14	23.13	15.10	5.34	6.43
6000.00	6.61	24.37	13.33	1.73	2.81

### Electrical Schematic





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