

High IP3

Frequency Mixer WIDE BAND

MCA-50LH+

Level 10 (LO Power+10 dBm) 1000 to 5000 MHz

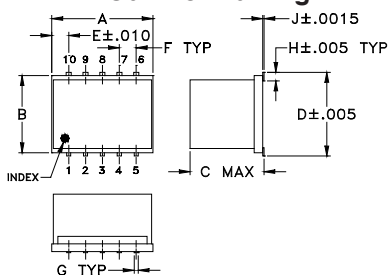
Maximum Ratings

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

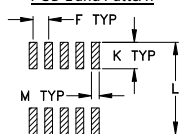
Pin Connections

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

Outline Drawing



PCB Land Pattern



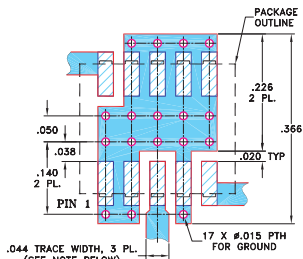
Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch)

A	B	C	D	E	F	G
.30	.250	.190	.266	.050	.050	.012
7.62	6.35	4.83	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	0.5	

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.
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Features

- wide bandwidth, 1000 to 5000 MHz
- good L-R isolation, 25 dB typ.; L-I isolation, 30 dB typ.
- small size 0.25"x0.3"x0.2"
- aqueous washable
- triple balanced mixer
- protected by US Patent 6,917,796

Applications

- PCN
- satellite
- line of sight links
- WiMAX

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.	
1000-5000	10-1500	7.3	0.2	9.9					
1000-1400	10-400	6.8	0.1	8.5	20	11	32	25	17
1400-2000	10-600	6.6	0.1	7.7	25	20	32	25	17
2000-2600	10-600	7.8	0.2	9.9	25	18	30	24	18
2600-4500	10-1500	7.8	0.1	8.6	35	20	25	15	15
4500-5000	50-500	8.0	0.2	9.9	35	22	25	15	16

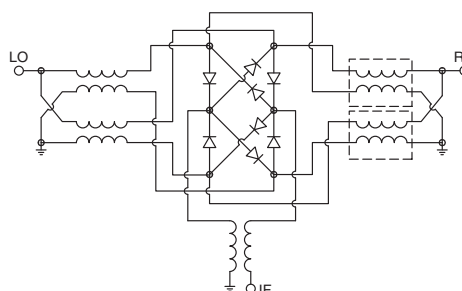
1 dB COMP. +6 dBm typ.

• see individual band specs

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 +10dBm	LO +10dBm	LO +10dBm	LO +10dBm	LO +10dBm
1000.00	1030.00	6.60	17.81	29.70	1.29	1.98
1200.00	1230.00	6.15	24.04	29.91	1.21	2.24
1400.00	1430.00	6.43	34.07	29.94	1.24	2.29
1600.00	1630.00	6.37	39.60	29.40	1.25	2.44
1800.00	1830.00	6.62	31.69	28.02	1.37	2.20
2000.00	2030.00	6.78	24.37	27.19	1.46	2.26
2200.00	2230.00	7.92	21.31	26.29	1.70	1.96
2400.00	2430.00	8.07	20.77	27.01	1.75	1.90
2600.00	2630.00	6.95	23.92	27.47	1.62	2.03
2800.00	2830.00	6.40	27.26	27.23	1.77	1.77
3000.00	3030.00	6.19	31.17	27.36	1.69	1.36
3200.00	3230.00	5.94	32.33	27.58	1.72	1.18
3400.00	3430.00	5.98	37.20	28.87	1.83	1.14
3600.00	3630.00	5.98	38.18	28.74	1.93	1.26
3800.00	3830.00	6.15	36.23	30.47	2.05	1.43
4000.00	4030.00	6.45	34.76	32.27	2.17	1.60
4200.00	4230.00	6.28	34.62	30.62	2.18	2.08
4400.00	4430.00	6.12	31.09	29.11	2.21	2.52
4600.00	4630.00	5.93	31.30	28.75	2.26	2.31
5000.00	5030.00	5.70	37.55	29.58	1.92	1.52

Electrical Schematic



CASE STYLE: DZ883

+RoHS Compliant

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

Reel Size	Devices/Reel
7"	10, 20, 50, 100, 200
13"	500, 1000

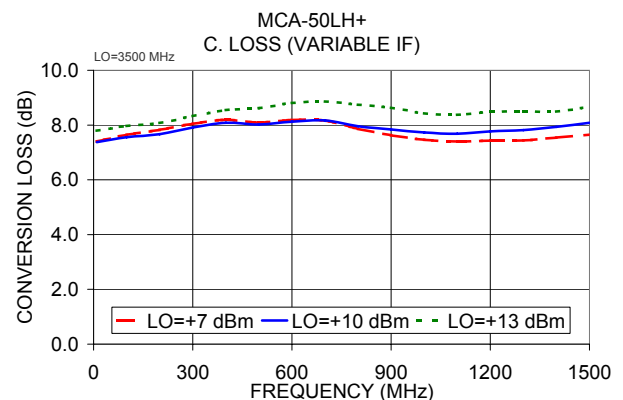
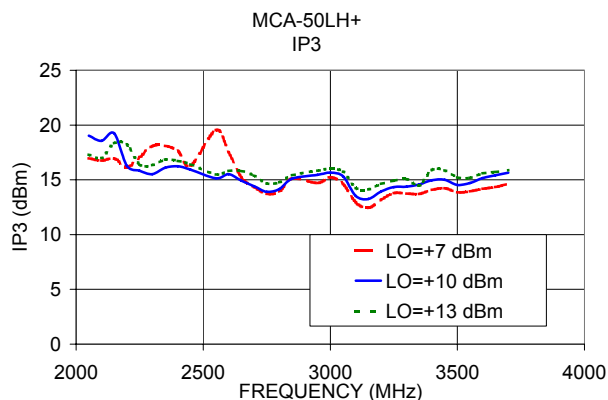
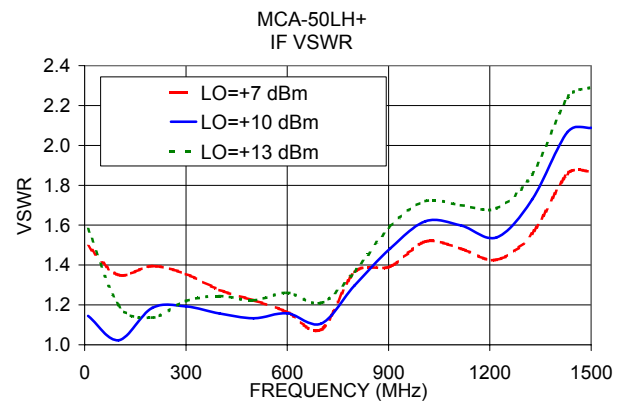
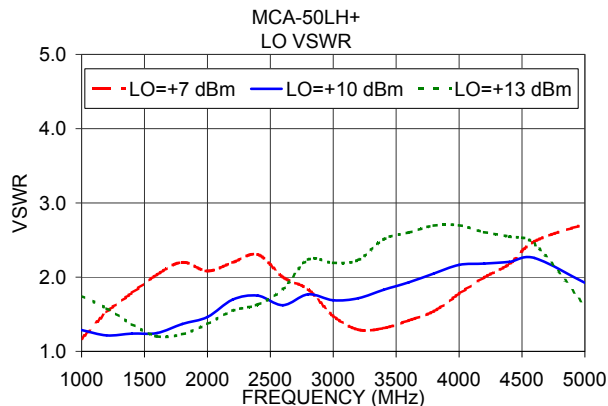
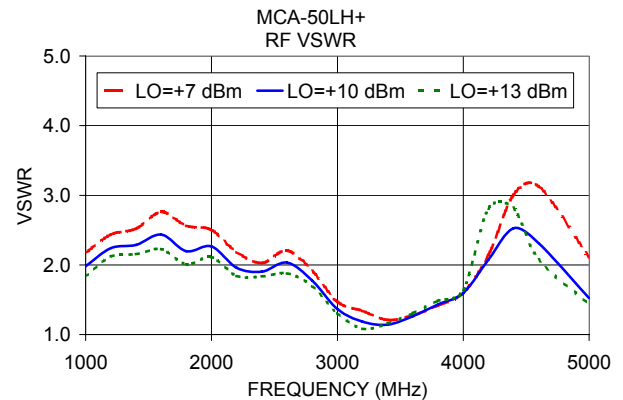
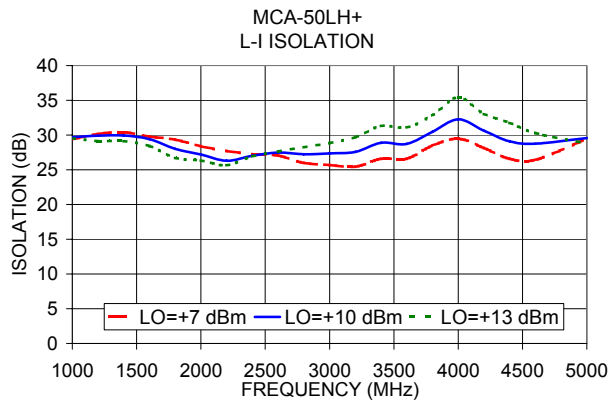
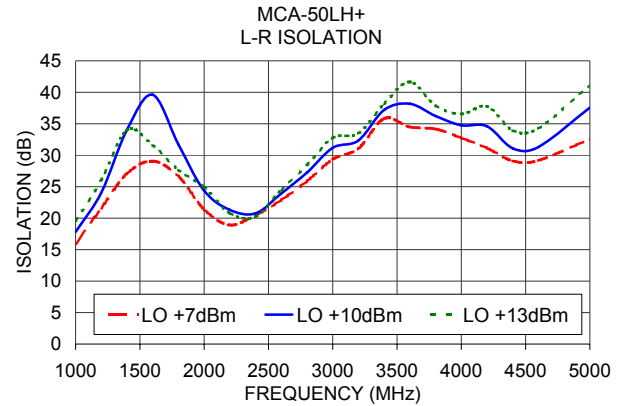
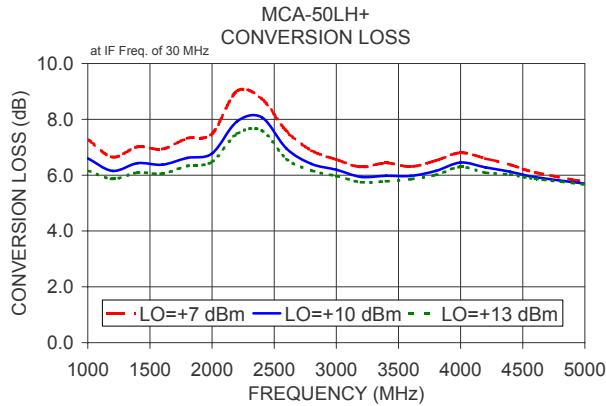
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www.minicircuits.com P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

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Performance Charts

MCA-50LH+



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