

High IP3

# Frequency Mixer WIDE BAND

MCA-50MH+

Level 13 (LO Power+13 dBm) 1000 to 5000 MHz



CASE STYLE: DZ883  
PRICE: \$8.95 ea. QTY.(10-49)

## Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power	200 mW
IF Current	40 mA

## Pin Connections

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

## 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

**+ 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.

## Applications

- PCN
- satellite
- line of sight links
- WiMax

## 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>L</sub> -f <sub>U</sub>	IF	σ	Max.	Typ.	Min.	Typ.		Min.
1000-5000	10-1500			7.3	0.2	9.9			
1000-1400	10-400			6.2	0.1	7.8	20	11	20
1400-2000	10-600			6.0	0.1	7.7	34	20	21
2000-2600	10-600			7.8	0.1	9.9	25	18	21
2600-4500	10-1500			6.6	0.1	8.6	39	22	18
4500-5000	50-500			7.3	0.2	8.9	35	22	21

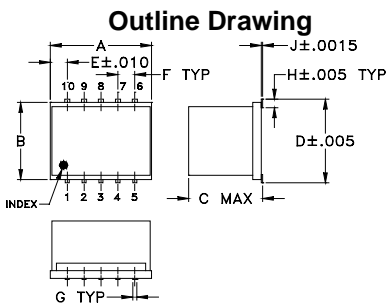
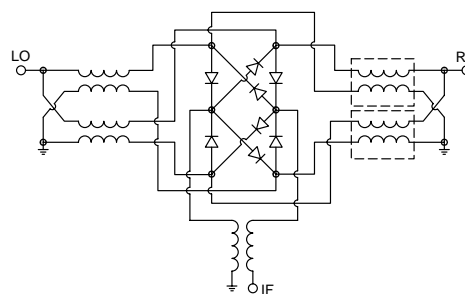
1 dB COMPR. +9 dBm typ.

• see individual band specs

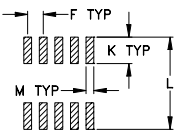
## Typical Performance Data

Frequency (MHz)		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
RF	LO	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm
1000.10	1030.10	6.43	16.42	31.37	1.28	2.13
1100.10	1130.10	5.97	18.64	31.89	1.17	2.23
1400.10	1430.10	5.91	30.08	31.47	1.23	2.49
1500.10	1530.10	5.76	34.43	31.25	1.26	2.39
1600.10	1630.10	5.78	39.11	31.37	1.28	2.25
1800.10	1830.10	6.04	39.49	29.65	1.42	2.06
2000.10	2030.10	6.32	28.14	28.64	1.53	2.12
2300.10	2330.10	8.66	23.59	25.91	1.90	1.97
2500.10	2530.10	7.82	24.04	27.43	1.78	2.12
2700.10	2730.10	7.15	28.71	30.07	1.63	2.12
3000.10	3030.10	6.26	33.02	28.73	1.61	1.50
3300.10	3330.10	5.97	41.64	28.07	1.75	1.33
3500.10	3530.10	6.06	44.84	29.22	1.82	1.03
3600.10	3630.10	6.03	56.06	28.90	1.80	1.05
3800.10	3830.10	5.91	40.61	30.53	1.79	1.22
4000.10	4030.10	6.53	35.57	34.07	1.78	1.11
4300.10	4330.10	7.10	39.56	33.74	2.07	1.60
4500.10	4530.10	6.95	40.10	31.97	2.08	2.10
4800.10	4830.10	7.36	29.20	28.90	1.59	2.02
5000.10	5030.10	7.14	32.79	30.33	1.57	1.61

## Electrical Schematic



### PCB Land Pattern

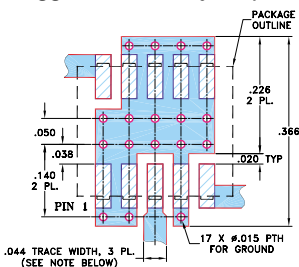


Suggested Layout.  
Tolerance to be within ±.002

## Outline Dimensions (inch/mm)

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

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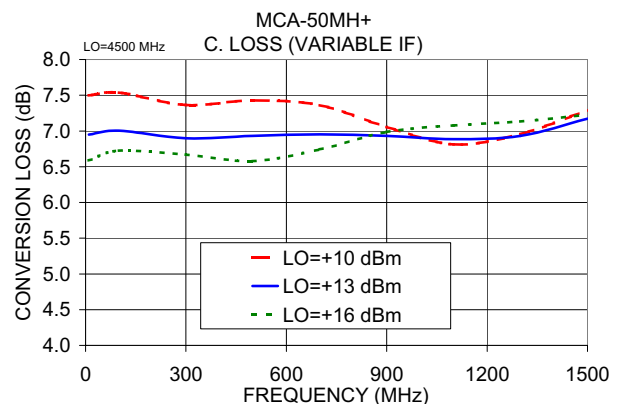
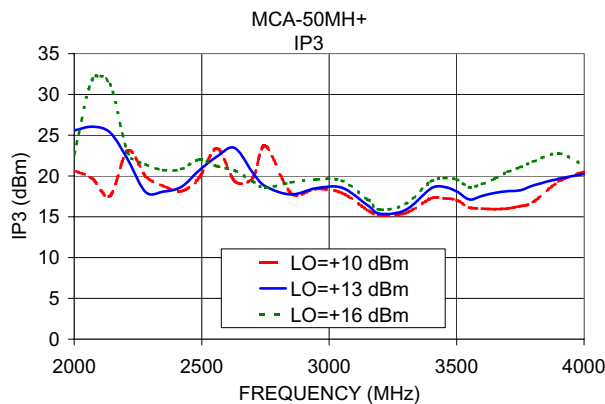
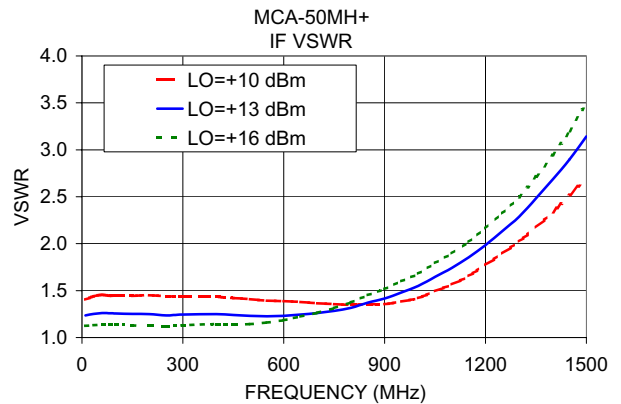
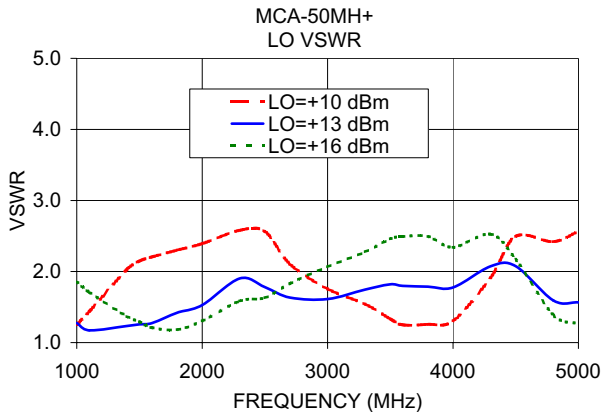
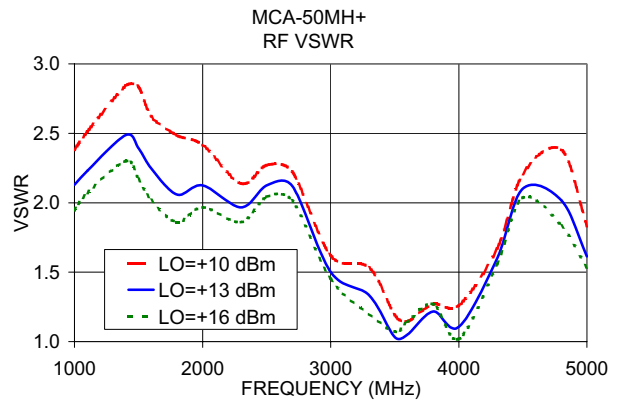
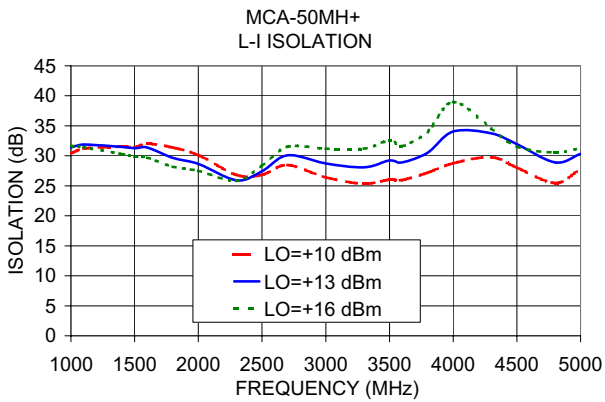
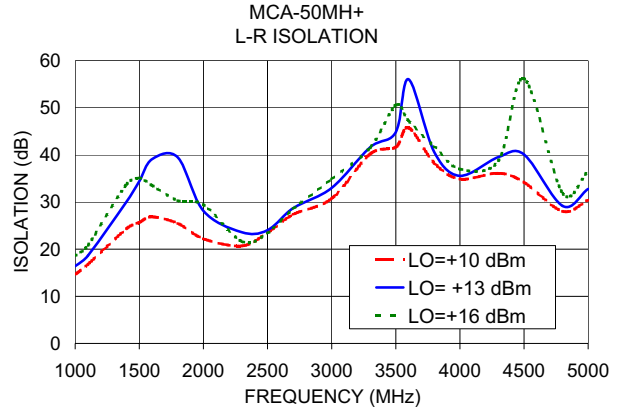
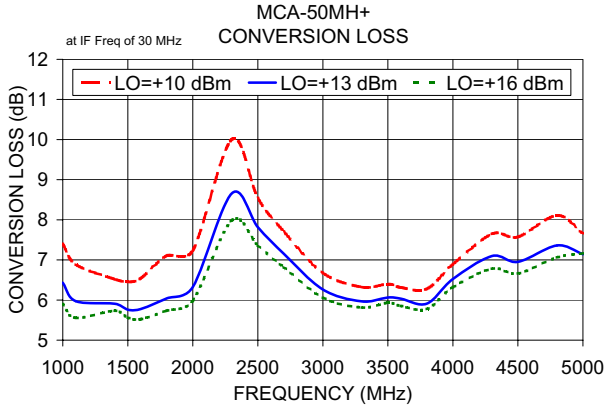
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RF/IF MICROWAVE COMPONENTS

REV. F  
M108294  
ED-9595B/2  
MCA-50MH+  
DJ/TD/CP/AM  
080305x  
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# Performance Charts

# MCA-50MH+



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