

High IP3

# Frequency Mixer WIDE BAND

## MCA-50H+

Level 17 (LO Power+17 dBm) 1000 to 5000 MHz



Generic photo used for illustration purposes only

CASE STYLE: DZ883

**+RoHS Compliant**

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



Available Tape and Reel at no extra cost

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

### 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.;
- excellent 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

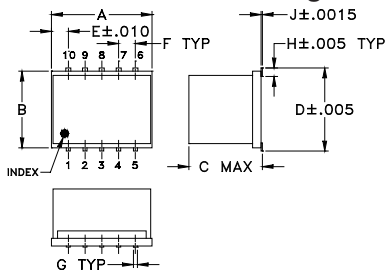
### Electrical Specifications (T<sub>AMB</sub>=-55°C to 100°C)

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	$\bar{X}$ σ Max.	Typ.	Min.	Typ.	Min.	
1000-5000	10-1500		7.3 0.2 10.2					
1000-1400	10-400		6.8 0.1 8.5	25	12	32	20	22
1400-2000	10-600		6.6 0.1 7.7	25	20	32	20	25
2000-2700	10-600		7.8 0.2 9.9	25	15	25	18	23
2700-4500	10-1500		7.8 0.1 8.8	35	20	30	18	23
4500-5000	50-500		8.0 0.2 10.2	30	18	35	18	21

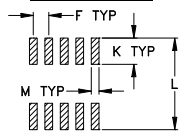
1 dB COMPR. +14 dBm typ.

see individual band specs

### Outline Drawing



### PCB Land Pattern

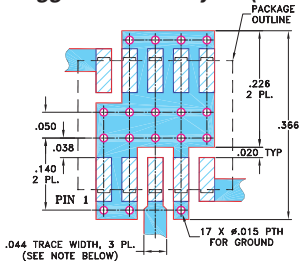


Suggested L layout, Tolerance to be within ±.002

### 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

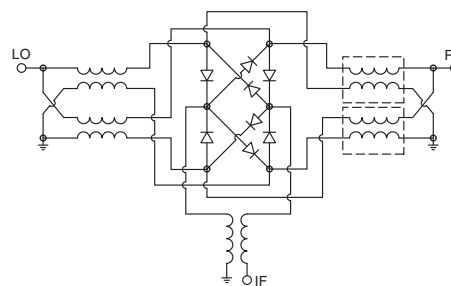
### Notes

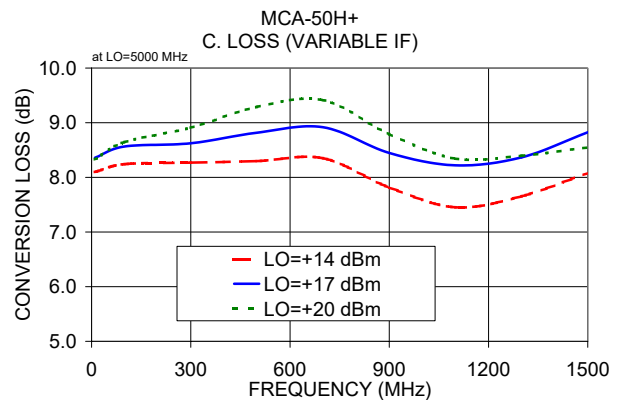
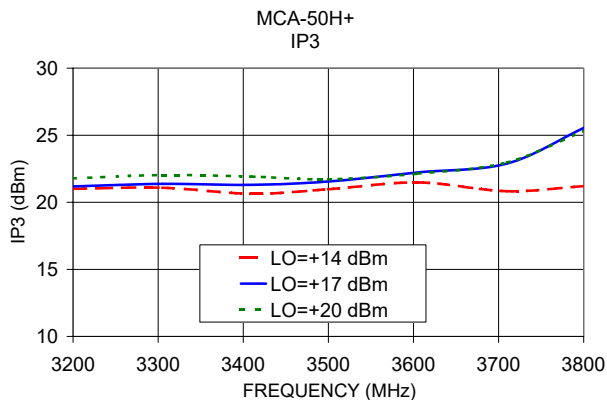
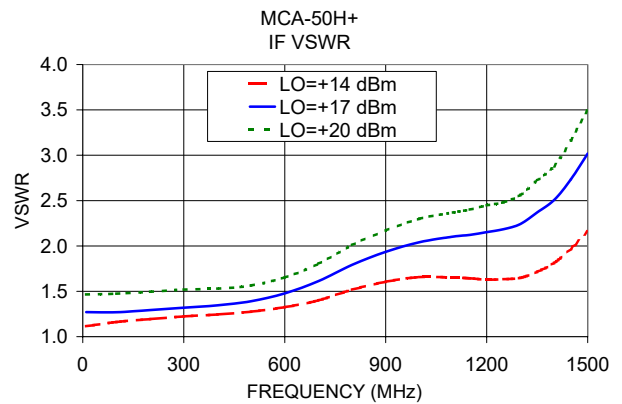
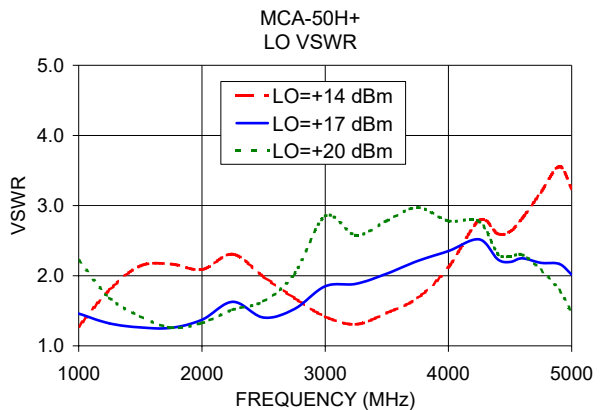
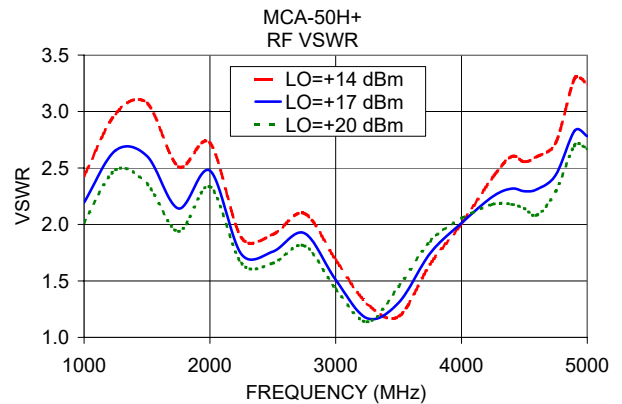
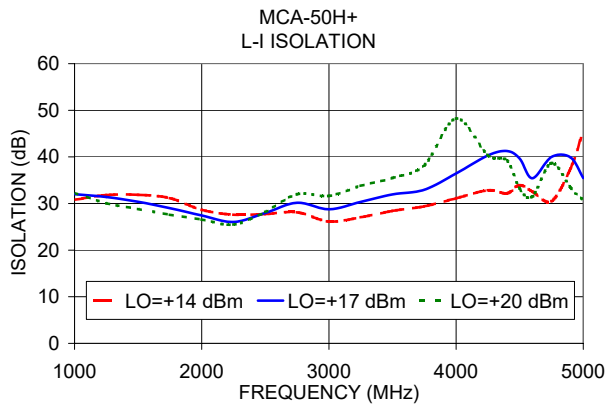
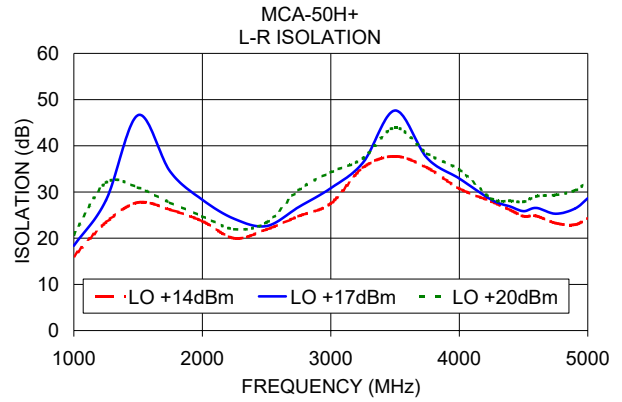
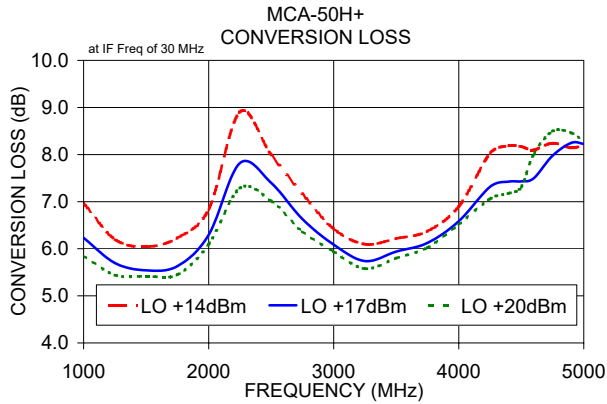
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### Typical Performance Data

Frequency (MHz)		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
RF	LO	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm
1000.10	1030.10	6.23	18.37	31.99	1.46	2.19
1250.10	1280.10	5.70	28.23	31.40	1.32	2.66
1500.10	1530.10	5.54	46.63	30.38	1.26	2.61
1750.10	1780.10	5.63	34.42	28.99	1.26	2.14
2000.00	2030.00	6.30	28.31	27.43	1.37	2.48
2250.00	2280.00	7.82	24.16	26.03	1.63	1.74
2500.00	2530.00	7.40	22.63	27.98	1.40	1.76
2750.00	2780.00	6.63	26.73	30.16	1.52	1.92
3000.00	3030.00	6.09	30.82	28.77	1.85	1.51
3250.00	3280.00	5.74	36.36	30.34	1.88	1.17
3500.00	3530.00	5.94	47.63	31.95	2.03	1.31
3750.00	3780.00	6.13	37.32	32.96	2.21	1.74
4000.00	4030.00	6.59	32.92	36.46	2.35	2.01
4250.00	4280.00	7.32	28.31	40.32	2.52	2.25
4400.00	4430.00	7.43	26.83	41.25	2.23	2.32
4500.00	4530.00	7.43	25.84	39.65	2.20	2.29
4600.00	4630.00	7.50	26.53	35.42	2.25	2.31
4750.00	4780.00	7.97	25.29	39.98	2.18	2.44
4900.00	4930.00	8.25	26.41	39.88	2.17	2.83
5000.00	5030.00	8.23	28.64	35.47	2.02	2.78

### Electrical Schematic





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