

High IP3

# Frequency Mixer

MCA-352+

Level 17 (LO Power+17 dBm) 2230 to 3490 MHz



## Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
LO & RF Power	20 dBm
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

## Features

- wideband
- excellent IP3, 30 dBm typ.
- excellent IP2, 58 dBm typ.
- excellent L-R isolation, 40 dB typ.
- excellent 1dB compression, RF>LO power
- industry standard foot print
- LTCC design for excellent temperature stability, performance repeatability and small size
- aqueous washable
- double balanced mixer
- low price
- protected by US Patent 6,959,180

## Applications

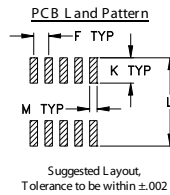
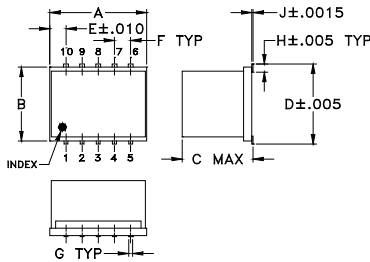
- radar
- differential GPS
- bluetooth
- amateur radio
- WiMAX

CASE STYLE: DZ883  
PRICE: \$11.95 ea. QTY.(1-9)

**+ 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.

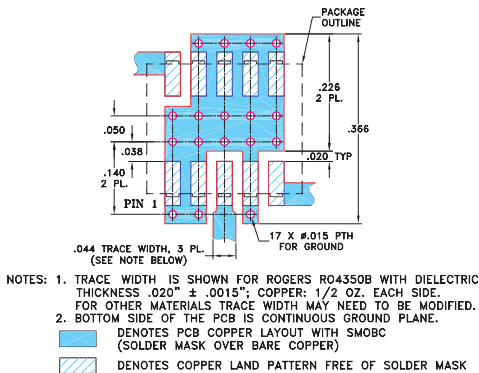
## Outline Drawing



## 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)



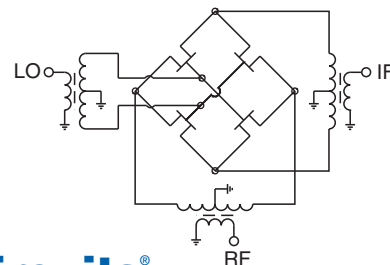
## Electrical Specifications (T<sub>AMB</sub> = -55°C to 100°C)

FREQUENCY (MHz)			IP3 (dBm)	IP2 (dBm)	RF in at 1 dB compr. (dBm)	CONVERSION LOSS (dB)	LO-RF ISOLATION (dB)	LO-IF ISOLATION (dB)
RF	LO	IF	Typ.	Typ.	Min.	Typ. Max.	Typ. Min.	Typ. Min.
2230-3490	2070-3330	10-330	30	58	17	7.5 9.5	40 25	30 18

## Typical Performance Data

Frequency (MHz)		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)	IP3 (dBm)	IP2 (dBm)
RF	LO	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm
2229.75	2069.75	7.68	39.44	33.19	1.49	5.77	26.68	57.03
2275.00	2115.00	7.70	39.20	34.50	1.40	5.20	31.18	54.62
2318.50	2158.50	7.74	38.52	35.27	1.34	4.96	28.47	58.58
2407.25	2247.25	7.86	34.78	36.99	1.26	4.44	30.00	53.39
2496.00	2336.00	7.89	32.12	37.41	1.20	4.00	31.07	53.51
2544.50	2384.50	7.81	31.19	37.02	1.19	4.03	31.53	53.14
2593.00	2433.00	7.70	30.54	35.90	1.19	3.55	31.18	54.62
2620.00	2460.00	7.68	30.20	34.20	1.19	3.50	31.30	55.00
2641.50	2481.50	7.63	30.06	33.85	1.19	3.45	31.66	56.45
2690.00	2530.00	7.61	30.79	32.10	1.18	3.27	31.69	57.76
2790.00	2630.00	7.59	36.10	29.28	1.18	3.17	32.04	63.17
2890.00	2730.00	7.56	46.80	27.89	1.24	3.36	30.82	68.35
2940.00	2780.00	7.55	45.00	27.60	1.30	3.60	30.20	61.00
2990.00	2830.00	7.56	43.23	27.53	1.37	3.97	29.39	57.38
3090.00	2930.00	7.65	40.07	26.40	1.46	4.80	28.18	55.69
3190.00	3030.00	7.74	39.39	24.81	1.48	4.80	27.62	54.33
3290.00	3130.00	7.89	37.55	23.70	1.48	4.10	26.93	57.96
3340.00	3180.00	8.20	37.30	23.60	3.80	1.50	26.30	59.00
3390.00	3230.00	8.12	37.41	23.68	1.52	3.68	25.74	60.44
3490.00	3330.00	8.16	37.56	24.01	1.65	3.94	25.24	68.26

## Electrical Schematic



For detailed performance specs & shopping online see web site

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IF/RF MICROWAVE COMPONENTS

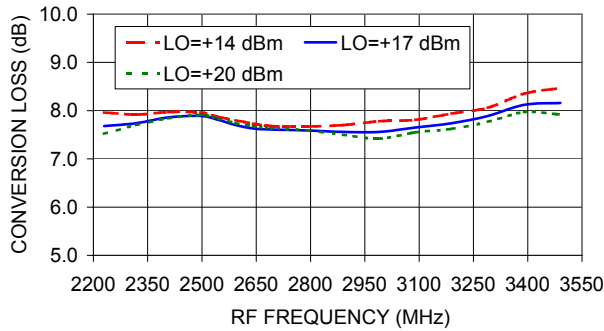
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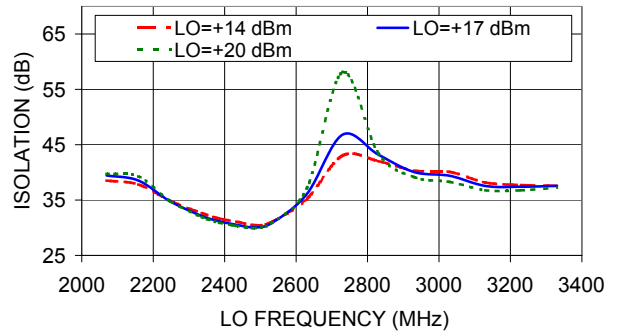
# Performance Charts

# MCA-352+

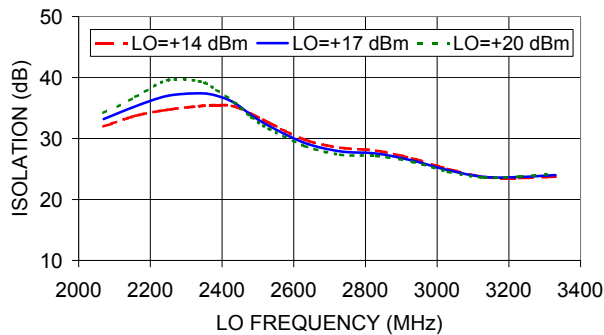
MCA-352+  
CONVERSION LOSS



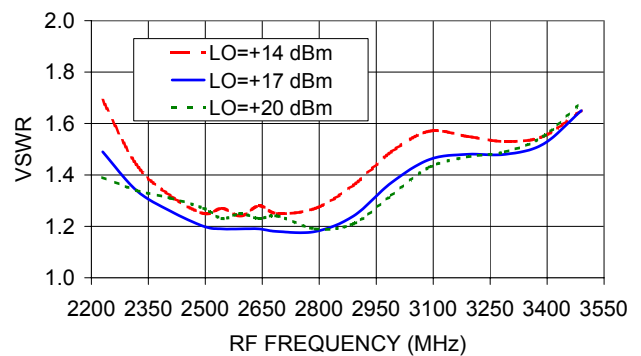
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L-R ISOLATION



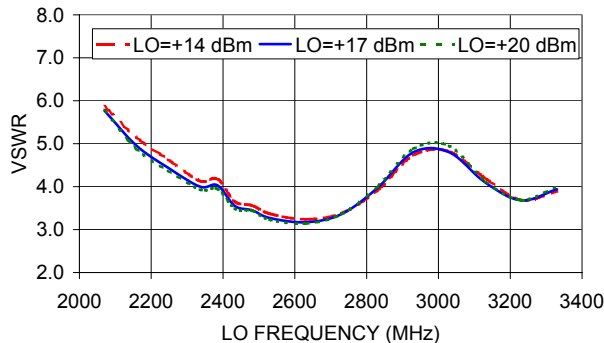
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L-I ISOLATION



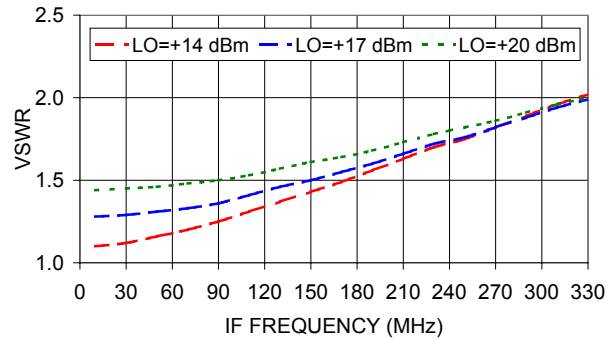
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RF VSWR



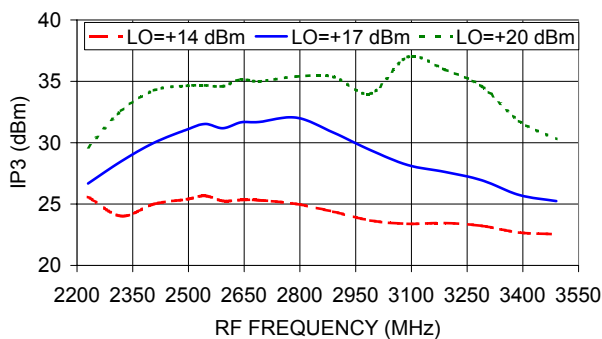
MCA-352+  
LO VSWR



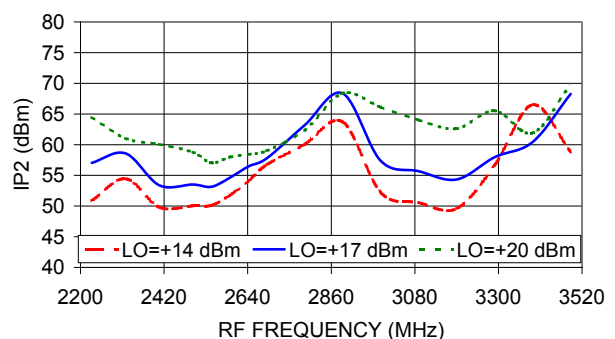
MCA-352+  
IF VSWR



MCA-352+  
IP3



MCA-352+  
IP2



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