

High IP3 Frequency Mixer

MCA-352+

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



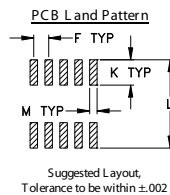
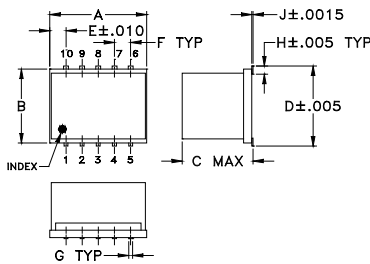
Maximum Ratings

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

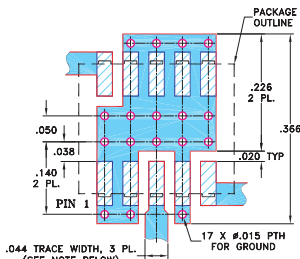
Outline Drawing



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)



- 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

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

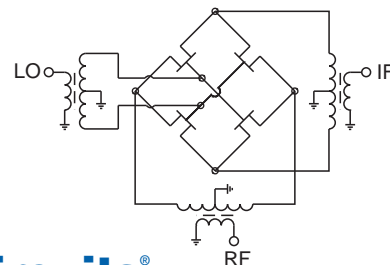
Electrical Specifications (T_{AMB}= -55°C to 100°C)

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	27.20	58.00
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

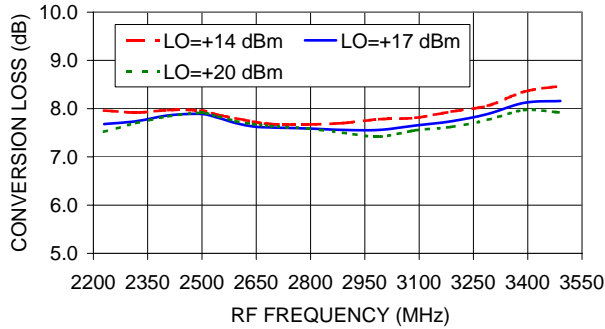
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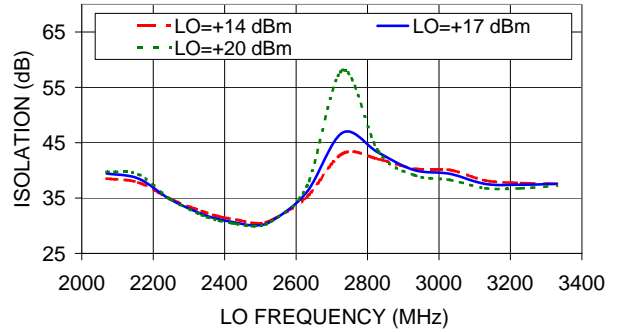
Performance Charts

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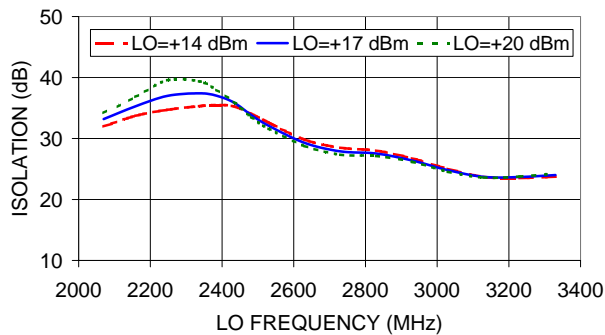
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CONVERSION LOSS



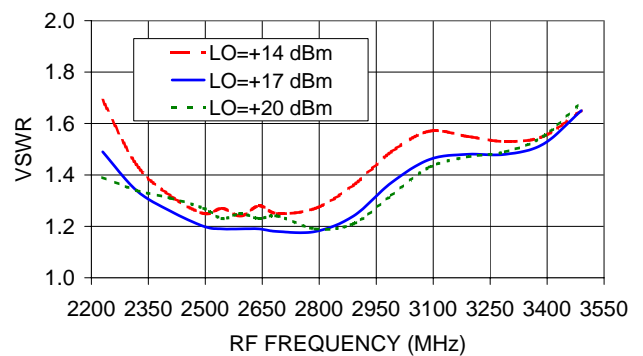
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L-R ISOLATION



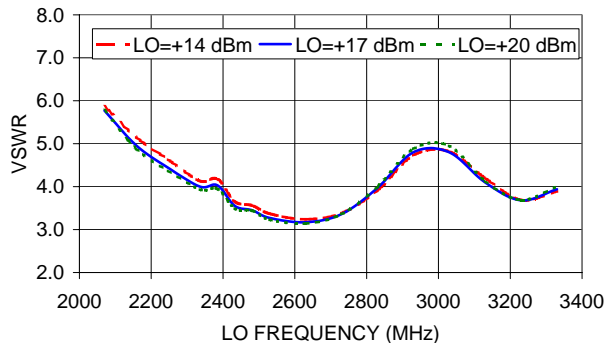
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L-I ISOLATION



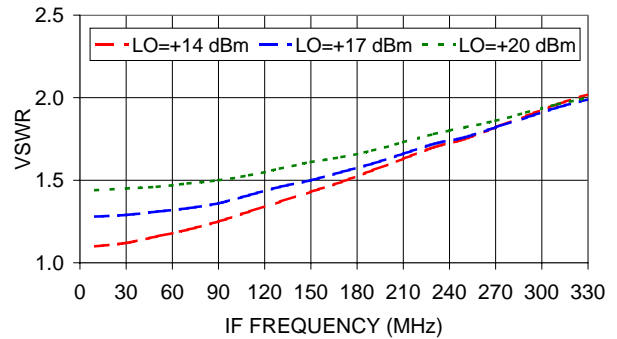
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RF VSWR



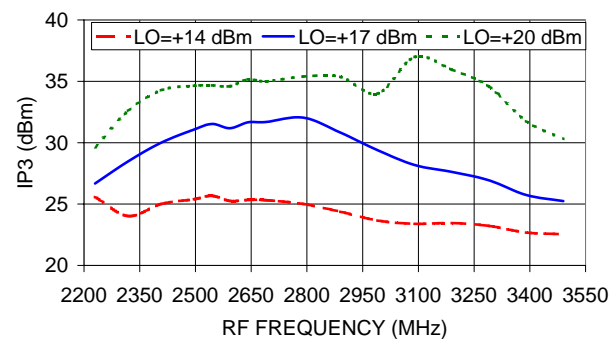
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LO VSWR



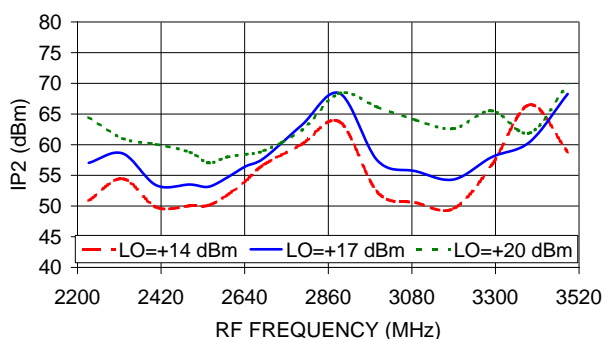
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IF VSWR



MCA-352+
IP3



MCA-352+
IP2



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