

High IP3

Frequency Mixer WIDE BAND

MCA-35H+

Level 17 (LO Power+17 dBm) 500 to 3500 MHz



CASE STYLE: DZ883

Maximum Ratings

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

- wide bandwidth, 500 to 3500 MHz
- excellent isolation, 30 dB typ. (1800-2500 MHz)
- good matching 2:1 VSWR typ. (over 1800-2800 MHz)
- small size 0.25"x0.3"x0.2"
- aqueous washable
- triple balanced mixer
- protected by US Patent 6,917,796

Applications

- cellular
- PCN
- PDC
- DECT
- PHS
- WiMAX

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

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 ₁ -f ₂	IF	\bar{X}	σ	Max.	Typ.	Min.	Typ.	Min.	Typ.
500-3500	10-1500	6.9	0.1	8.9					
500-800	10-300	6.3	0.1	7.7	18	11	32	20	26
800-1000	10-200	6.4	0.1	7.6	24	17	27	20	26
1000-1800	10-800	6.6	0.1	8.6	29	20	26	20	24
1800-2000	10-200	6.0	0.1	7.6	30	22	26	20	24
1800-2500	10-700	5.8	0.1	7.6	30	22	27	19	22
2000-3500	10-1500	6.5	0.1	8.6	29	17	22	14	23

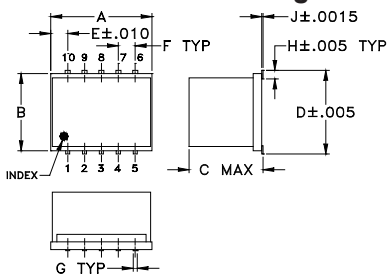
1 dB COMPR. +14 dBm typ.

• see individual band specs

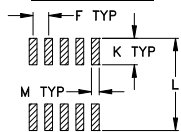
Typical Performance Data

Frequency (MHz)		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
RF	LO	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm	LO +17dBm
501.00	531.00	6.02	16.19	33.30	1.67	1.57
601.00	631.00	5.93	17.94	31.90	1.93	1.39
701.00	731.00	5.87	20.08	31.13	2.33	1.24
801.00	831.00	6.50	22.69	29.81	3.04	1.25
901.00	931.00	6.28	26.16	29.31	3.47	1.26
1101.00	1131.00	6.48	32.24	27.89	4.32	1.39
1301.00	1331.00	6.62	30.73	26.48	2.63	1.45
1501.00	1531.00	7.32	27.40	26.27	1.85	1.50
1701.00	1731.00	6.32	27.63	29.18	1.95	1.44
1901.00	1931.00	6.07	30.06	30.97	1.84	1.58
2101.00	2131.00	5.88	31.94	29.21	1.44	1.63
2301.00	2331.00	5.99	30.11	27.83	1.61	1.82
2501.00	2531.00	6.00	29.06	26.52	2.15	1.80
2701.00	2731.00	6.73	30.39	25.95	2.70	1.64
2901.00	2931.00	6.88	30.46	24.83	3.11	1.79
3100.00	3130.00	6.88	31.18	25.70	4.03	2.13
3200.00	3230.00	6.61	30.89	25.41	3.89	2.09
3300.00	3330.00	6.50	31.82	27.53	3.47	1.95
3400.00	3430.00	6.27	31.14	26.35	3.13	1.78
3500.00	3530.00	6.05	28.30	27.50	2.70	1.75

Outline Drawing



PCB Land Pattern

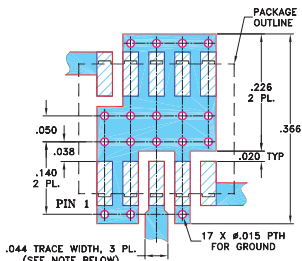


Suggested Layout, Tolerance to be within ±.002

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)



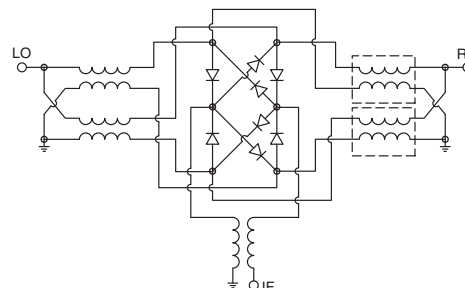
- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

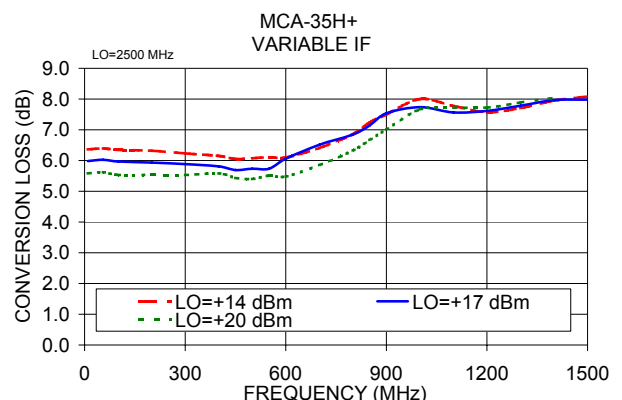
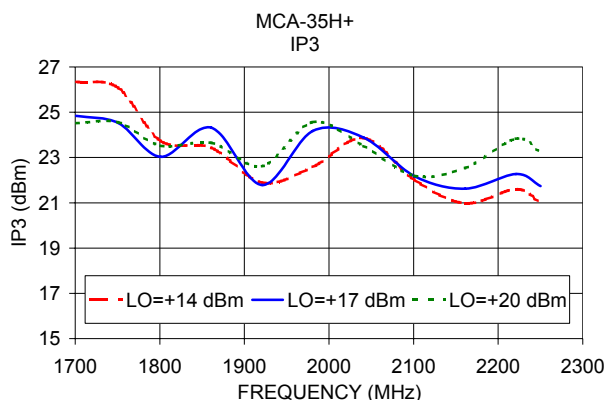
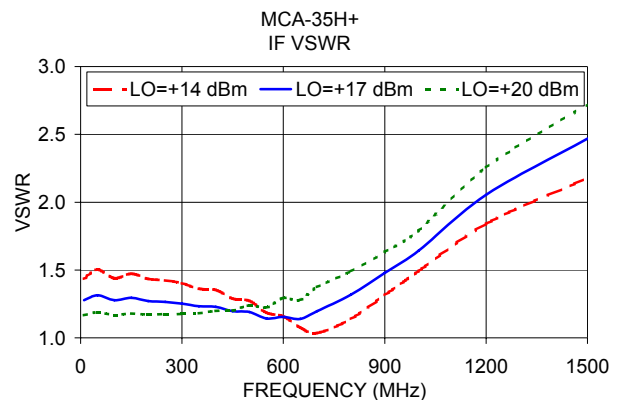
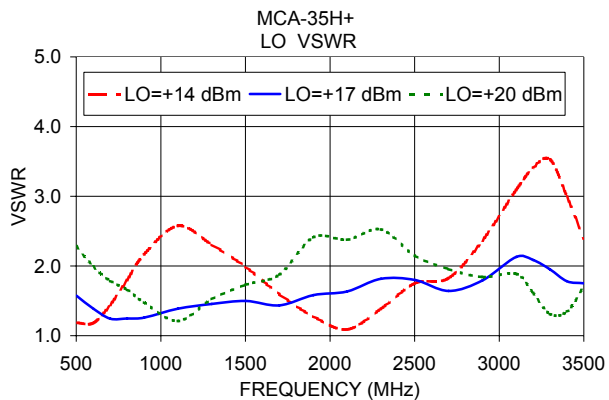
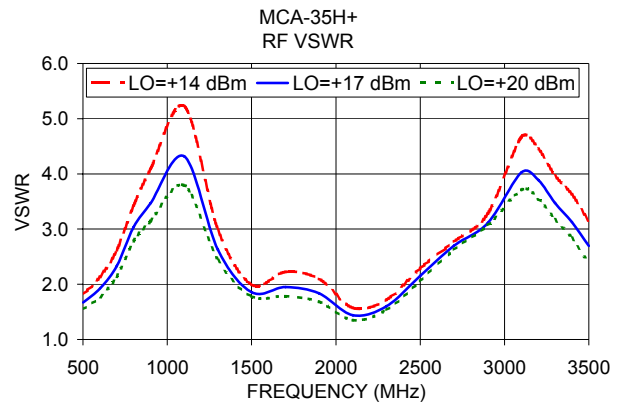
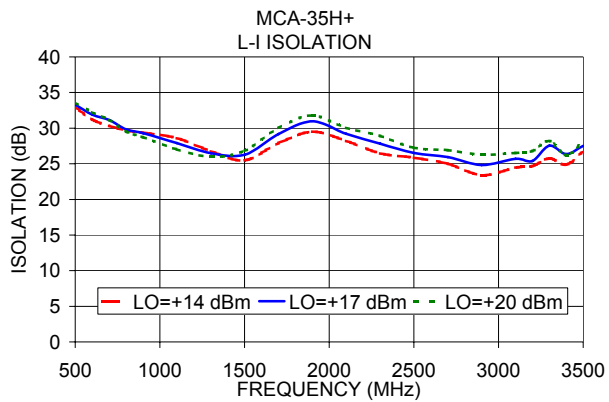
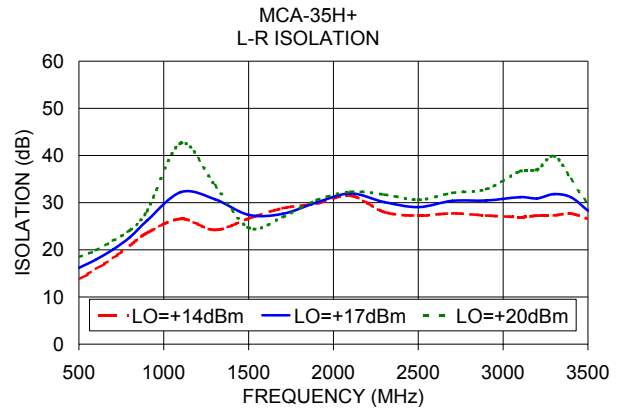
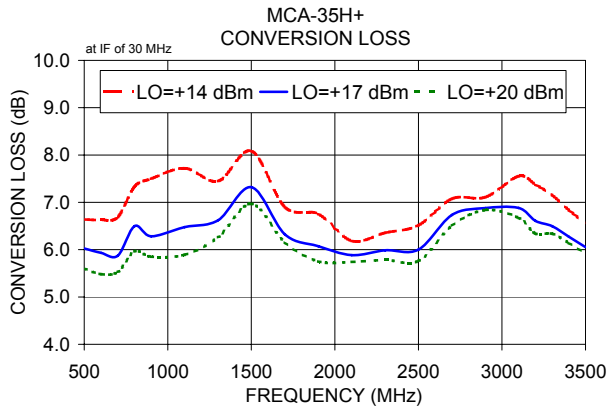
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

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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Electrical Schematic





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