

High IP3

Frequency Mixer WIDE BAND

MCA-35LH+

Level 10 (LO Power+10 dBm) 500 to 3500 MHz

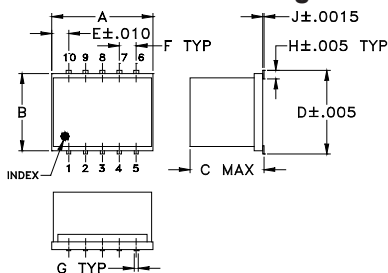
Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power	50 mW
IF Current	40 mA
Permanent damage may occur if any of these limits are exceeded.	

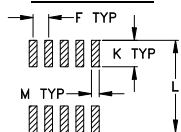
Pin Connections

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

Outline Drawing



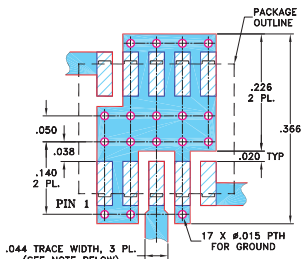
PCB Land Pattern



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

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.
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"). Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

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
- PHS
- PCN
- WiMAX
- PDC
- DECT



CASE STYLE: DZ883

+RoHS Compliant

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

Reel Size	Available Tape and Reel at no extra cost
7"	Devices/Reel
13"	10, 20, 50, 100, 200
	500, 1000

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 _i -f _o	IF	$\bar{X}$	σ	Max.	Typ.	Min.	Typ.	Min.	
500-3500	10-1500	6.9	0.1	8.9					
500-800	10-300	6.3	0.1	7.7	18	11	32	25	16
800-1000	10-200	7.1	0.1	8.6	24	17	30	23	16
1000-1800	10-800	7.3	0.1	8.9	29	20	28	20	16
1800-2000	10-200	6.3	0.1	8.2	32	25	30	23	16
1800-2500	10-700	5.8	0.1	8.2	32	22	30	21	16
2000-3500	10-1500	6.5	0.1	8.7	29	17	26	15	16

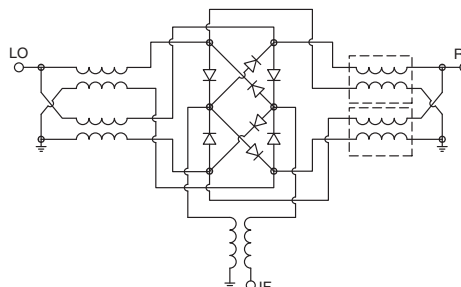
1 dB COMPR. +6 dBm typ.

• 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 +10dBm	LO +10dBm	LO +10dBm	LO +10dBm	LO +10dBm
500.00	530.00	6.10	16.44	16.44	1.53	1.46
600.00	630.00	6.10	17.92	17.92	1.83	1.23
700.00	730.00	6.04	20.26	20.26	2.24	1.16
800.00	830.00	6.58	23.10	23.10	2.77	1.17
1000.00	1030.00	7.04	28.73	28.73	3.23	1.30
1300.00	1330.00	7.00	31.09	31.09	2.56	1.49
1500.00	1530.00	7.71	28.68	28.68	1.99	1.65
1600.00	1630.00	7.50	28.46	28.46	2.11	1.66
1700.00	1730.00	6.81	30.31	30.31	2.04	1.57
1800.00	1830.00	6.41	31.73	31.73	1.95	1.58
2000.00	2030.00	6.20	32.70	32.70	1.69	1.64
2300.00	2330.00	6.19	31.39	31.39	1.61	1.61
2500.00	2530.00	6.34	30.15	30.15	2.25	1.78
2700.00	2730.00	6.73	30.75	30.75	3.06	1.72
2900.00	2930.00	7.09	31.56	31.56	3.22	1.79
3000.00	3030.00	7.12	30.82	30.82	3.34	1.75
3100.00	3130.00	7.32	31.63	31.63	3.34	1.63
3300.00	3330.00	7.18	31.03	31.03	3.19	1.43
3400.00	3430.00	6.86	29.04	29.04	3.05	1.45
3500.00	3530.00	6.75	26.75	26.75	2.75	1.42

Electrical Schematic



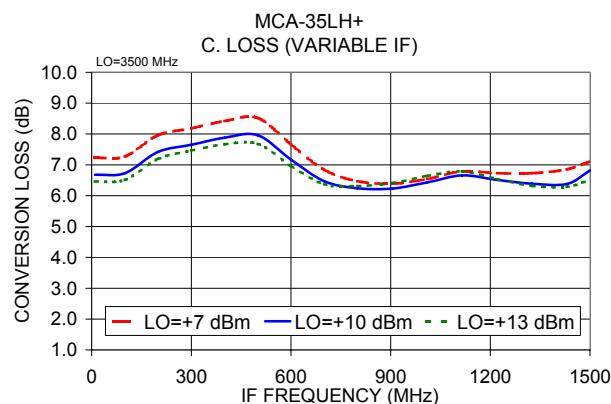
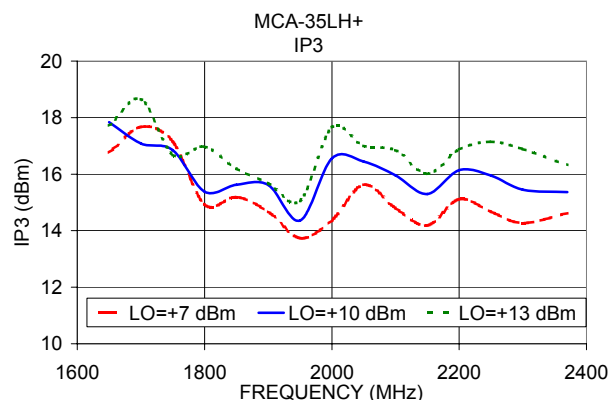
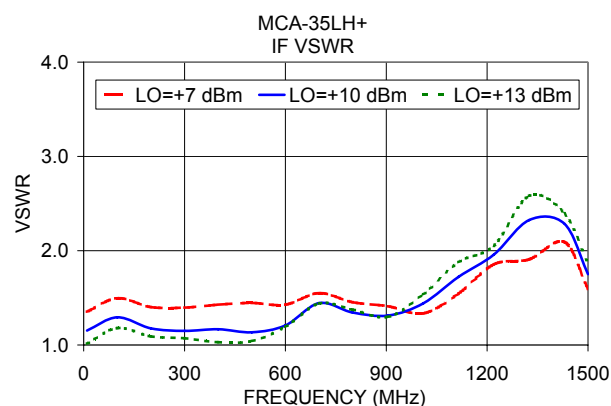
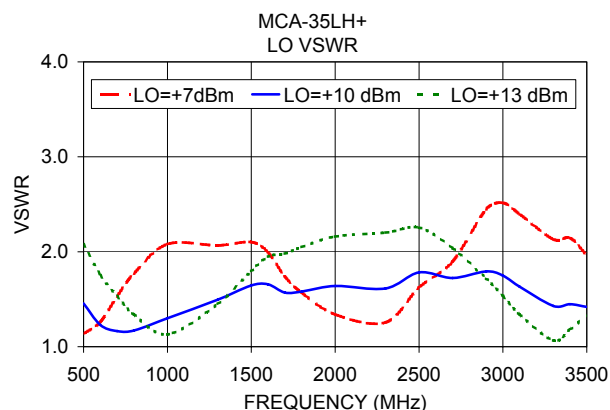
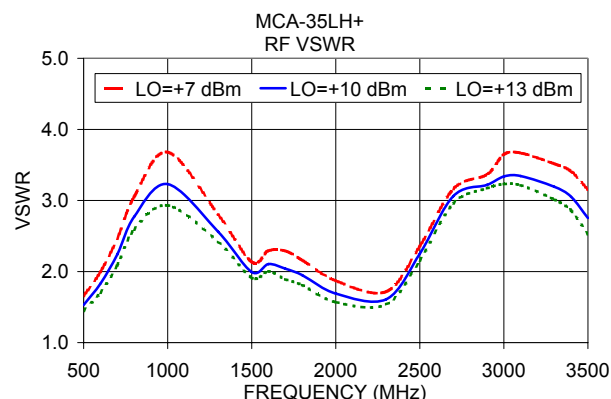
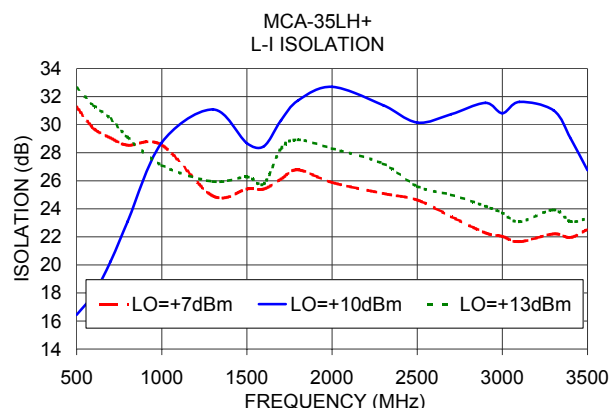
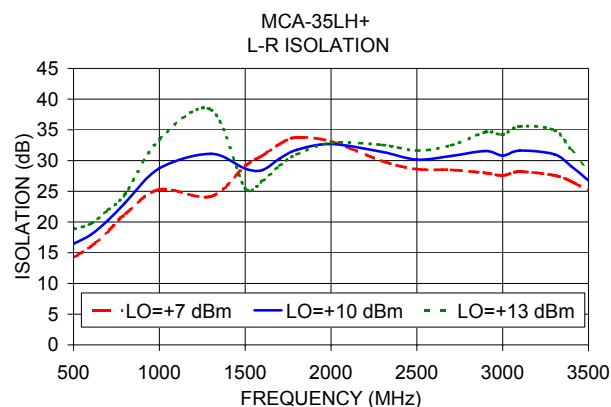
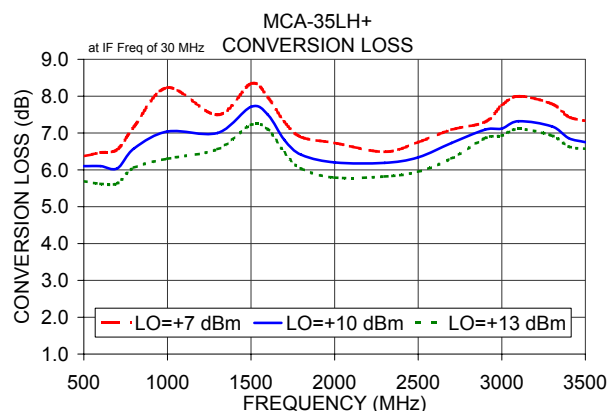
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Performance Charts

MCA-35LH+



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