

High IP3 Frequency Mixer

MCA-36FLH+

Level 10 (LO Power+10 dBm) 3500 to 3600 MHz



CASE STYLE: DZ883

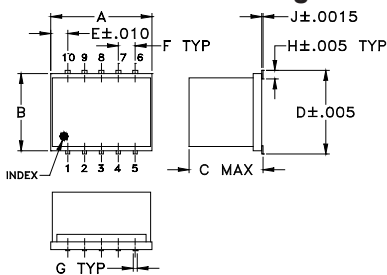
Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
LO & RF Power	20 dBm
IF Current	40 mA
Permanent damage may occur if any of these limits are exceeded.	

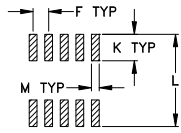
Pin Connections

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

Outline Drawing



PCB Land Pattern

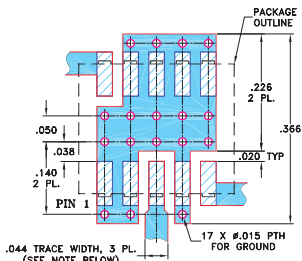


Suggested Layout,
Tolerance to be within ±.002

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	grams	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-Circuit's 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-Circuit's website at www.minicircuits.com/MCLStore/terms.jsp

Features

- high IP3, 25 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

- line of sight links
- satellite communications
- WiMAX

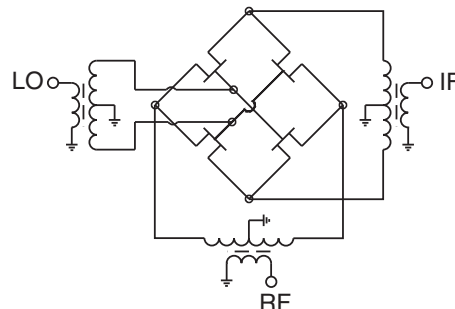
Electrical Specifications (T_{AMB} = -55°C to 100°C)

FREQUENCY (MHz)			IP3 (dBm)	RF in at 1 dB compr. (dBm)	CONVERSION LOSS (dB)		LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)	
RF	LO	IF			Typ.	Max.	Typ.	Min.	Typ.	Min.
3500-3600	3070-3170	380-480	25	10	8.4	9.4	40	20	28	15

Typical Performance Data

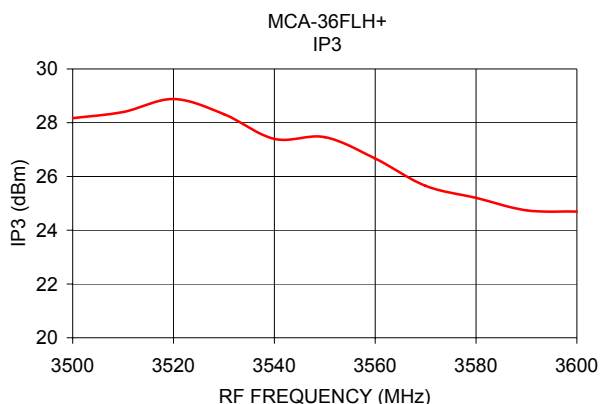
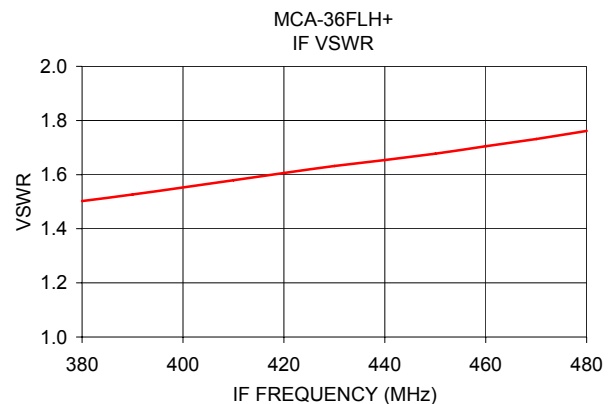
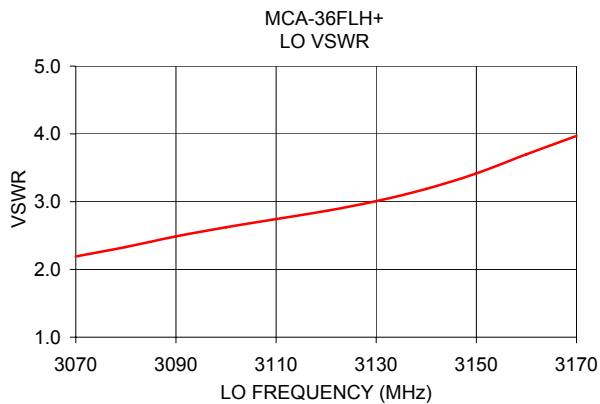
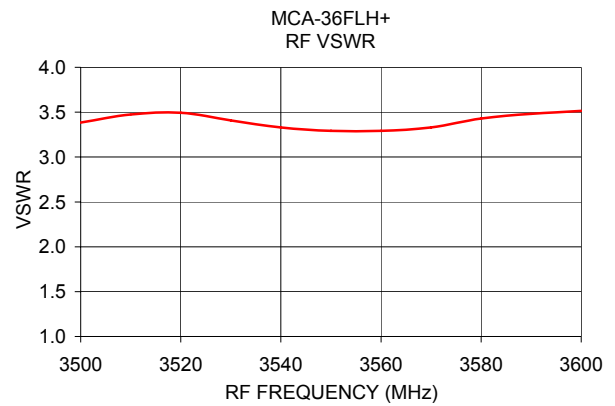
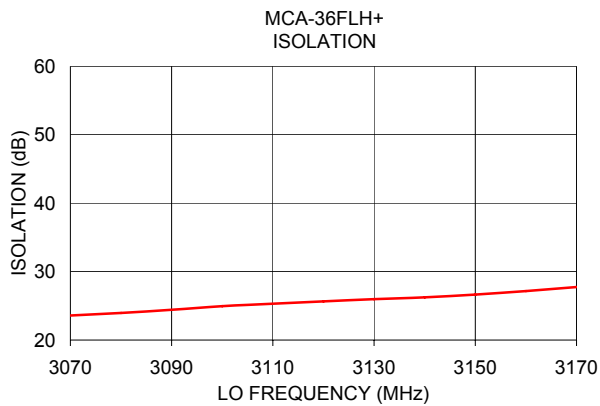
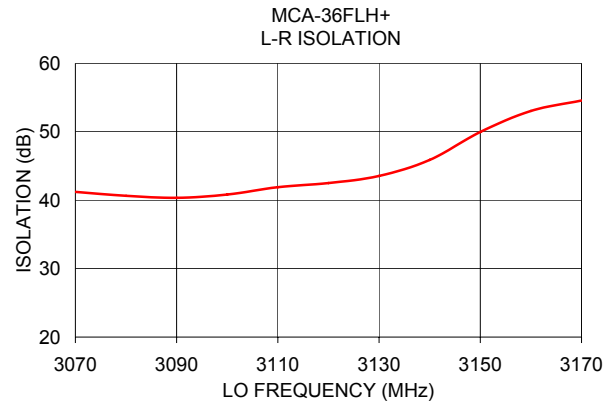
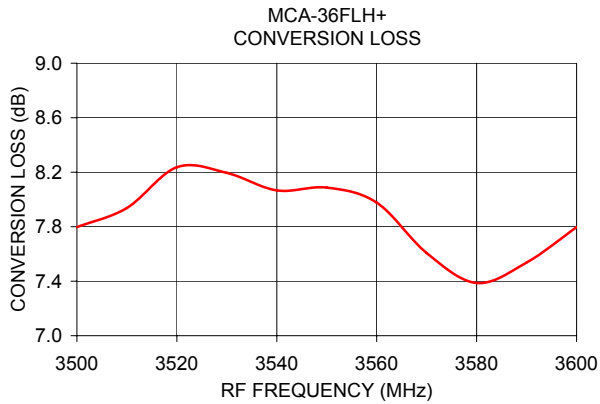
Frequency (MHz)		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)	IP3 (dBm)
RF	LO						
		LO +10dBm	LO +10dBm	LO +10dBm	LO +10dBm	LO +10dBm	LO +10dBm
3500.00	3070.00	7.80	41.22	23.58	2.19	3.39	28.17
3510.00	3080.00	7.94	40.63	23.95	2.33	3.47	28.40
3520.00	3090.00	8.24	40.34	24.42	2.49	3.49	28.88
3530.00	3100.00	8.20	40.82	24.95	2.62	3.41	28.32
3540.00	3110.00	8.07	41.89	25.31	2.74	3.33	27.40
3550.00	3120.00	8.09	42.50	25.65	2.86	3.29	27.46
3560.00	3130.00	7.98	43.54	25.97	3.01	3.29	26.67
3570.00	3140.00	7.61	45.88	26.25	3.19	3.33	25.65
3580.00	3150.00	7.39	49.96	26.64	3.42	3.43	25.21
3590.00	3160.00	7.54	53.03	27.16	3.70	3.48	24.74
3600.00	3170.00	7.80	54.56	27.74	3.97	3.52	24.69

Electrical Schematic



Performance Charts

MCA-36FLH+



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

