

High IP3

Frequency Mixer WIDE BAND

MCA-50MH+

Level 13 (LO Power+13 dBm) 1000 to 5000 MHz



Maximum Ratings

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

Pin Connections

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

Features

- wide bandwidth, 1000 to 5000 MHz
- good L-R isolation, 25 dB typ.; L-I isolation, 30 dB typ.
- small size 0.25"x0.3"x0.2"
- aqueous washable
- triple balanced mixer
- protected by US Patent 6,917,796

CASE STYLE: DZ883

PRICE: \$8.95 ea. QTY.(10-49)

+ 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.

Applications

- PCN
- satellite
- line of sight links
- WiMax

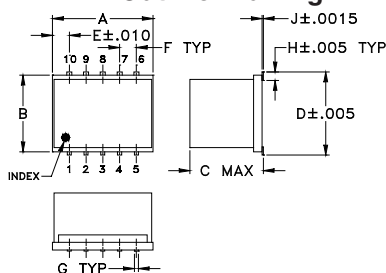
Electrical Specifications (T_{AMB}=-55°C to 100°C)

FREQUENCY (MHz)		CONVERSION LOSS (dB)			LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 at center band (dBm)
LO/RF f _L -f _U	IF	$\bar{X}$	σ	Max.	Typ.	Min.	Typ.	Min.	Typ.
1000-5000	10-1500	7.3	0.2	9.9	•	•	•	•	•
1000-1400	10-400	6.2	0.1	7.8	20	11	32	25	20
1400-2000	10-600	6.0	0.1	7.7	34	20	28	20	21
2000-2600	10-600	7.8	0.1	9.9	25	18	28	20	21
2600-4500	10-1500	6.6	0.1	8.6	39	22	30	20	18
4500-5000	50-500	7.3	0.2	8.9	35	22	30	20	21

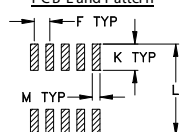
1 dB COMP. +9 dBm typ.

• see individual band specs

Outline Drawing



PCB Land Pattern



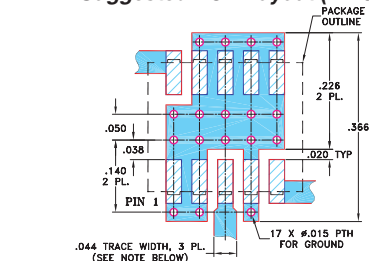
Suggested L layout, Tolerance to be within ±.002

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	0.5	

Demo Board MCL P/N: TB-144

Suggested PCB Layout (PL-045)

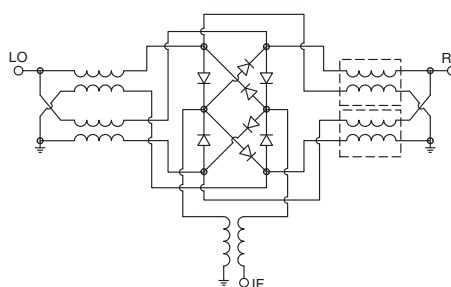


- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS, TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
3. DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
4. DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

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 +13dBm	LO +13dBm	LO +13dBm	LO +13dBm	LO +13dBm
1000.10	1030.10	6.43	16.42	31.37	1.28	2.13
1100.10	1130.10	5.97	18.64	31.89	1.17	2.23
1400.10	1430.10	5.91	30.08	31.47	1.23	2.49
1500.10	1530.10	5.76	34.43	31.25	1.26	2.39
1600.10	1630.10	5.78	39.11	31.37	1.28	2.25
1800.10	1830.10	6.04	39.49	29.65	1.42	2.06
2000.10	2030.10	6.32	28.14	28.64	1.53	2.12
2300.10	2330.10	8.66	23.59	25.91	1.90	1.97
2500.10	2530.10	7.82	24.04	27.43	1.78	2.12
2700.10	2730.10	7.15	28.71	30.07	1.63	2.12
3000.10	3030.10	6.26	33.02	28.73	1.61	1.50
3300.10	3330.10	5.97	41.64	28.07	1.75	1.33
3500.10	3530.10	6.06	44.84	29.22	1.82	1.03
3600.10	3630.10	6.03	56.06	28.90	1.80	1.05
3800.10	3830.10	5.91	40.61	30.53	1.79	1.22
4000.10	4030.10	6.53	35.57	34.07	1.78	1.11
4300.10	4330.10	7.10	39.56	33.74	2.07	1.60
4500.10	4530.10	6.95	40.10	31.97	2.08	2.10
4800.10	4830.10	7.36	29.20	28.90	1.59	2.02
5000.10	5030.10	7.14	32.79	30.33	1.57	1.61

Electrical Schematic



Mini-Circuits
ISO 9001 ISO 14001 AS 9100 CERTIFIED

For detailed performance specs & shopping online see web site

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine Provides ACTUAL Data Instantly at minicircuits.com

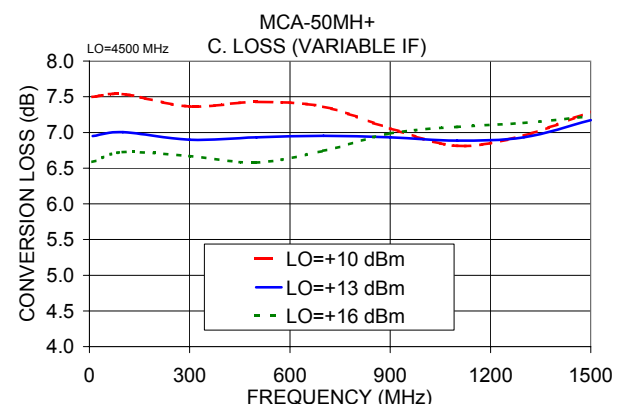
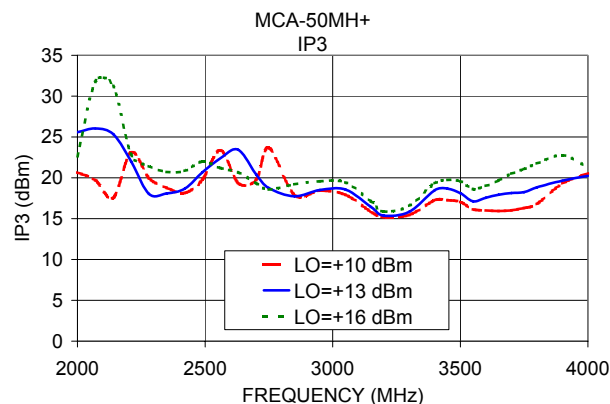
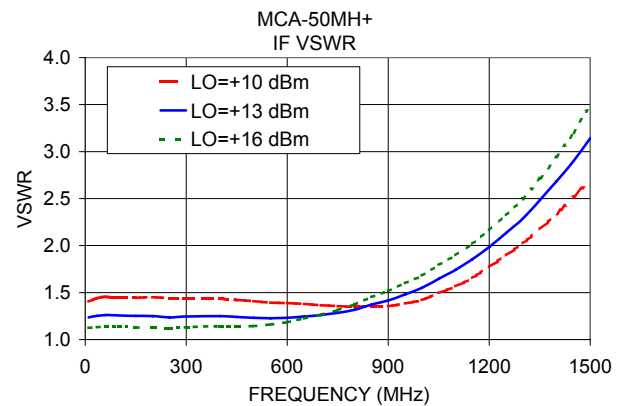
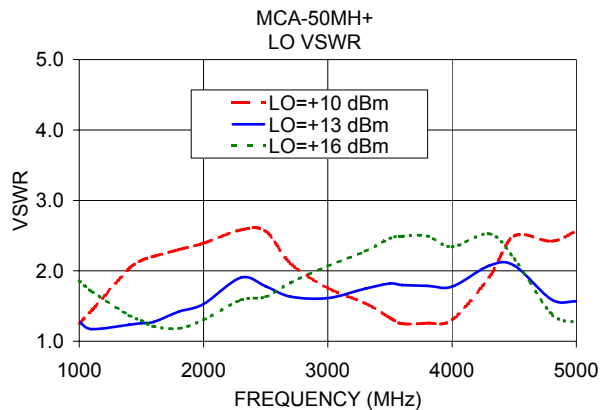
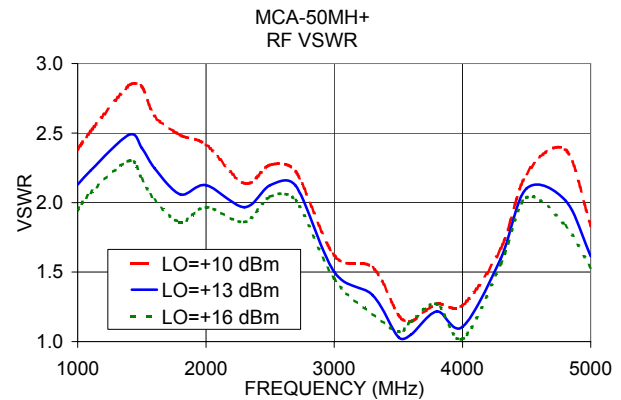
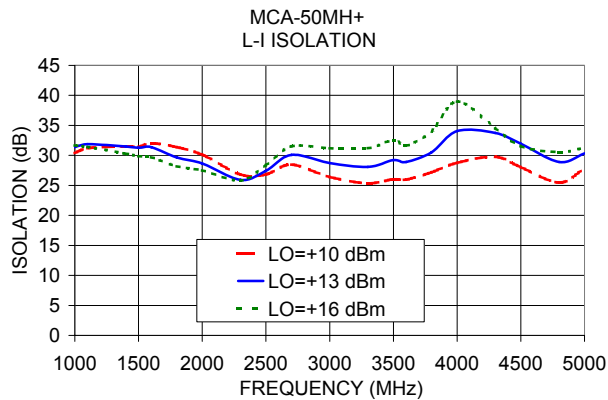
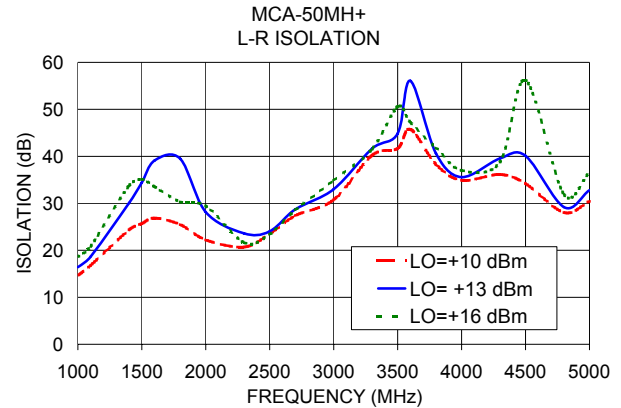
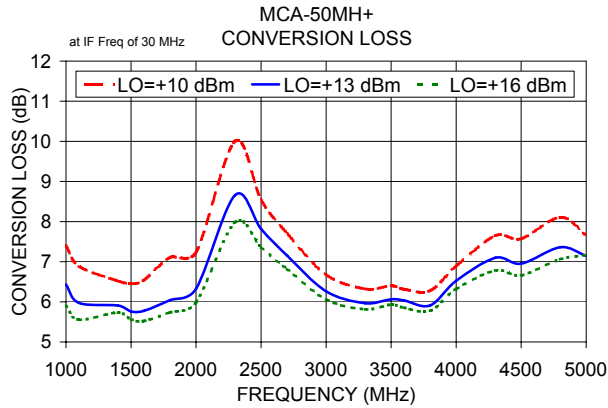
IF/RF MICROWAVE COMPONENTS

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuits' applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet 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.

REV. F
M108294
ED-9595B/2
MCA-50MH+
DJ/TD/CP/AM
080305x
Page 1 of 2

Performance Charts

MCA-50MH+



mini-Circuits
ISO 9001 ISO 14001 AS 9100 CERTIFIED

& shopping online see web site

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine Provides ACTUAL Data Instantly at minicircuits.com

IF/RF MICROWAVE COMPONENTS

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet 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.