

Frequency Mixer WIDE BAND

MCA1-113H+

Level 17 (LO Power+17 dBm) 3800 to 11000 MHz



CASE STYLE: DZ885
PRICE: \$ 14.95 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.

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

Features

- wide bandwidth, 3800 to 11000 MHz
- low conversion loss, 6.8 dB typ.
- high L-R isolation, 35 dB typ.
- IF, DC to 1800 MHz
- LTCC double balanced mixer
- low cost
- low profile, 0.08"
- aqueous washable
- protected by US Patent 7,027,795

Applications

- satellite up and down converters
- line of sight links
- defense radar
- defense communication
- federal fixed service

Electrical Specifications

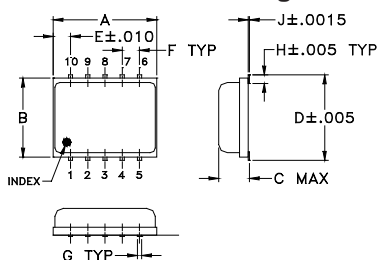
FREQUENCY (MHz)		CONVERSION LOSS* (dB)			LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 at center band (dBm)
LO/RF	IF	\bar{X}	σ	Max.	Typ.	Min.	Typ.	Min.	Typ.
3800-11000	DC-1800								
3800-6500	DC-1800	6.7	0.2	8.8	27	17	13	8	23
6500-9500	DC-1800	6.8	0.2	8.8	35	25	32	16	21
9500-11000	DC-1800	6.6	0.2	8.5	28	20	25	16	21

1 dB COMPR. +14 dBm typ.
* Conversion loss at 30 MHz IF, increases with IF frequency.

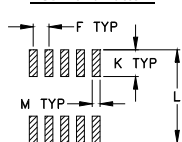
Typical Performance Data at 25°C

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
3800.00	3830.00	6.33	31.72	11.09	2.43	2.01
4340.00	4370.00	5.53	36.54	14.38	2.42	1.81
4880.00	4910.00	5.40	29.89	11.85	1.72	1.95
5420.00	5450.00	6.77	21.32	11.53	1.70	2.08
5960.00	5990.00	6.64	22.71	20.47	1.70	2.72
6500.00	6530.00	6.65	32.83	22.91	1.79	4.89
6800.00	6830.00	6.68	38.25	21.78	1.72	2.97
7100.00	7130.00	7.72	30.12	22.19	2.68	3.97
7400.00	7430.00	7.55	31.69	25.62	2.68	2.94
7700.00	7730.00	6.85	39.07	30.58	2.49	3.52
8000.00	8030.00	6.74	51.51	37.43	2.31	3.01
8300.00	8330.00	6.33	34.76	44.18	2.16	3.00
8600.00	8630.00	6.32	31.34	48.01	2.18	2.54
8900.00	8930.00	6.21	32.00	39.54	1.94	2.56
9200.00	9230.00	6.16	31.72	31.50	1.89	2.42
9500.00	8530.00	6.44	31.16	29.44	1.80	3.87
10000.00	10030.00	6.58	27.87	22.69	1.66	3.08
10500.00	10530.00	6.53	25.25	22.32	1.71	2.85
10750.00	10780.00	6.80	26.33	24.17	2.76	5.02
11000.00	11030.00	7.11	26.19	24.04	1.93	2.25

Outline Drawing



PCB Land Pattern

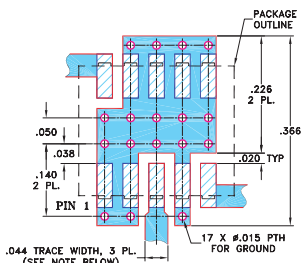


Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.30	.250	.085	.266	.050	.050	.012
7.62	6.35	2.16	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	0.25	

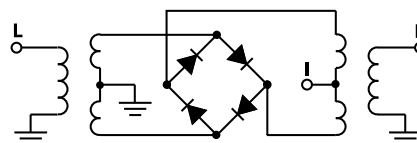
Demo Board MCL P/N: TB-144 Suggested PCB Layout (PL-045)



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

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

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-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. OR
M105872
ED-11599/1
MCA1-113H
DJ/RS/CP/AM
070423
Page 1 of 2

