

Ceramic

Frequency Mixer WIDE BAND

MCA1-80H+

Level 17 (LO Power+17 dBm) 2800 to 8000 MHz



CASE STYLE: DZ885
PRICE: \$11.95 ea. QTY (10-49)

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, 2800 to 8000 MHz
- low conversion loss, 6.3 dB typ.
- high L-R isolation, 35 dB typ.
- IF, DC to 1250 MHz
- LTCC double balanced mixer
- aqueous washable
- low cost
- low profile, 0.08"
- protected by US Patent 7,027,795

+ 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

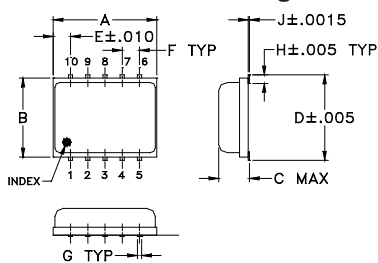
- satellite up and down converters
- line of sight links
- defense radar
- defense communication

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

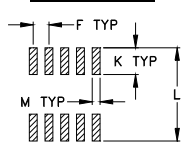
FREQUENCY (MHz)	CONVERSION LOSS (dB)			LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 at center band (dBm)
	LO/RF f _c -f _u	IF	σ	Max.	Typ.	Min.	Typ.	
2800-8000	DC-1250							
2800-5000	DC-1250	6.5	0.2	8.9*	34	22	12	8
5000-8000	DC-1250	6.0	0.2	8.9*	35	21	35	13

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

Outline Drawing



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

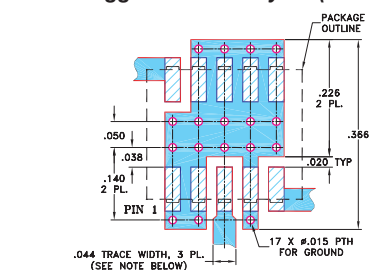
Outline Dimensions (inch/mm)

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	

Typical Performance Data

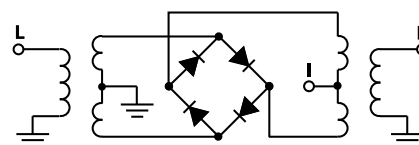
Frequency (MHz)	Conversion Loss (dB)		Isolation L-R (dB)		Isolation L-I (dB)		VSWR RF Port (:1)		VSWR LO Port (:1)	
	LO	+13dBm	LO	+13dBm	LO	+13dBm	LO	+13dBm	LO	+13dBm
2800.00	2830.10	6.32	43.01	12.42	2.41	1.99				
5000.00	5030.10	7.02	35.98	24.98	2.67	2.98				
6200.00	6230.10	5.89	32.88	37.57	2.97	3.25				
6300.00	6330.10	5.62	32.26	38.59	3.20	3.45				
6400.00	6430.10	5.42	34.86	39.69	3.42	3.20				
6500.00	6530.10	5.18	35.38	41.78	3.13	2.96				
6600.00	6630.10	5.28	32.64	45.82	2.98	2.83				
6650.00	6680.10	5.56	32.40	45.78	3.06	2.60				
6700.00	6730.10	5.13	32.63	44.65	3.30	2.60				
7000.00	7030.10	5.25	32.22	45.62	3.13	2.72				
7150.00	7180.10	5.61	32.69	45.49	3.45	2.83				
7200.00	7230.10	5.46	32.89	43.89	3.67	2.89				
7300.00	7330.10	5.55	33.59	41.45	3.62	3.04				
7400.00	7430.10	5.65	34.45	40.66	3.45	3.13				
7500.00	7530.10	5.79	33.59	41.99	3.45	3.22				
7600.00	7630.10	6.08	34.10	41.64	3.86	3.16				
7700.00	7730.10	6.18	34.94	34.31	4.74	2.97				
7800.00	7830.10	6.31	35.54	30.40	5.09	2.86				
7900.00	7930.10	6.25	35.75	27.33	4.68	2.86				
8000.00	8030.10	6.30	33.26	24.54	4.50	3.15				

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

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-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.

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