

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

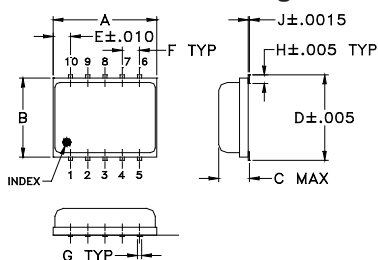
- satellite up and down converters
- line of sight links
- defense radar
- defense communication

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

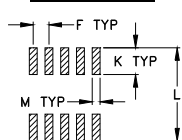
FREQUENCY (MHz)	CONVERSION LOSS (dB)			LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3 at center band (dBm)
	LO/RF f _c -f _u	IF	\bar{X} σ Max.	Typ.	Min.	Typ.	Min.	
2800-8000	DC-1250		6.5 0.2 8.9*	34	22	12	8	24
2800-5000	DC-1250							
5000-8000	DC-1250		6.0 0.2 8.9*	35	21	35	13	21

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

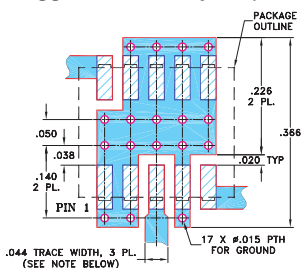
Outline Dimensions (inch/mm)

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

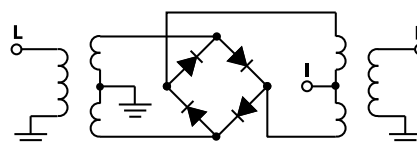
Frequency (MHz)	Conversion Loss (dB)		Isolation L-R (dB)		Isolation L-I (dB)		VSWR RF Port (:1)		VSWR LO Port (:1)	
	LO	+13dBm	LO	+13dBm	LO	+13dBm	LO	+13dBm	LO	+13dBm
2800.00	2830.10	6.32	43.01	12.42	2.41	1.99				
5000.00	5030.10	7.02	35.98	24.98	2.67	2.98				
6200.00	6230.10	5.89	32.88	37.57	2.97	3.25				
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.
■ DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
■ DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Electrical Schematic



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Page 1 of 2

