

Ceramic

Frequency Mixer WIDE BAND

MCA1-60MH+

Level 13 (LO Power+13 dBm) 1600 to 6000 MHz

Maximum Ratings

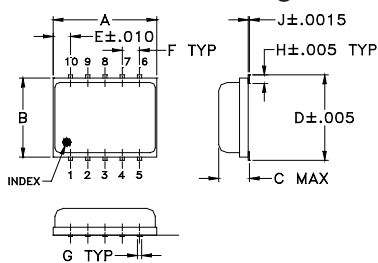
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power	200 mW
IF Current	40 mA

Permanent damage may occur if any of these limits are exceeded.

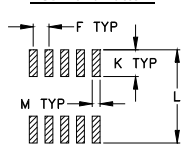
Pin Connections

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

Outline Drawing



PCB Land Pattern



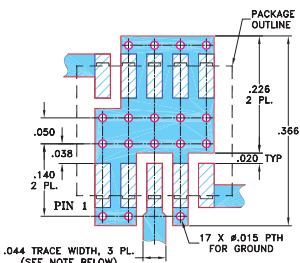
Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.30	.250	.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

Features

- wide bandwidth, 1600 to 6000 MHz
- useable to 8000 MHz
- low conversion loss, 6.2 dB typ.
- IF, DC to 2000 MHz
- LTCC double balanced mixer
- aqueous washable
- low cost
- low profile, 0.08"
- protected by US Patent 7,027,795

Applications

- PCN
- defense & weather radar
- WCDMA
- defense communications

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)			
		Typ.	Min.	Typ.	Min.				
1600-4400	DC-2000	6.9	0.1	8.5*	32	25	17	—	15
4400-6000	DC-2000	6.0	0.1	8.5*	22	18	15	—	15

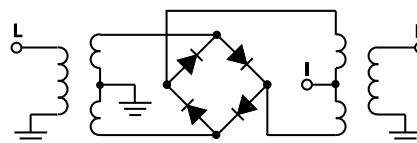
1 dB COMPR. +9 dBm typ.

*Conversion loss at 30 MHz IF, increases with IF frequency. See Graphs

Typical Performance Data

Frequency (MHz)	Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR RF Port (:1)	VSWR LO Port (:1)
1600.00	5.80	34.40	18.22	2.36	4.29
1800.00	5.69	40.40	20.40	2.50	3.06
2000.00	5.71	34.08	20.59	2.85	2.20
2400.00	5.71	29.81	17.48	2.56	1.48
2600.00	5.66	31.17	17.47	2.51	1.68
2800.00	6.40	33.79	17.35	3.54	2.07
3000.00	7.00	32.33	17.15	4.90	2.75
3200.00	6.83	31.52	17.08	3.71	3.90
3400.00	6.42	31.43	16.73	3.42	4.56
3600.00	6.01	31.58	15.66	3.10	4.51
3800.00	6.01	32.37	16.98	2.53	6.19
4000.00	6.35	32.97	18.41	2.23	4.62
4400.00	6.15	30.70	18.49	2.54	4.58
4600.00	5.89	28.56	18.16	2.31	4.46
4800.00	6.68	28.20	18.36	2.52	2.50
5000.00	5.94	25.23	18.75	2.46	1.19
5200.00	5.87	23.87	19.82	2.58	1.58
5600.00	6.30	24.95	15.42	2.72	3.97
5800.00	6.24	24.65	13.88	3.33	6.41
6000.00	7.10	23.11	12.81	4.37	13.10

Electrical Schematic



CASE STYLE: DZ885
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.

Mini-Circuits
ISO 9001 ISO 14001 AS 9100 CERTIFIED

For detailed performance specs & shopping online see web site

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IF/RF MICROWAVE COMPONENTS

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