

Frequency Mixer WIDE BAND

MCA1-60+

Level 7 (LO Power+7 dBm) 1600 to 6000 MHz

Maximum Ratings

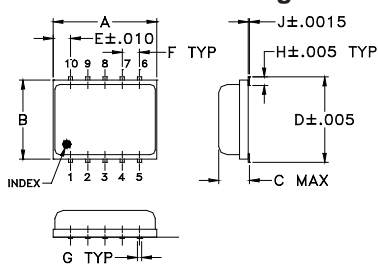
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power	50 mW
IF Current	40 mA

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

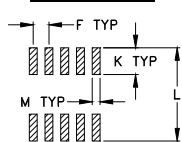
Pin Connections

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

Outline Drawing



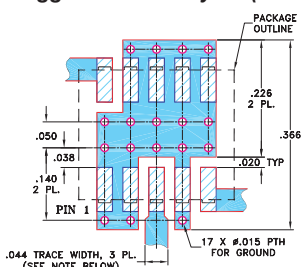
PCB Land Pattern



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	K	L	M	wt
.30	.250	.085	.266	.050	.050	.012	.029	.004	.085	.296	.030	grams
7.62	6.35	2.16	6.76	1.27	1.27	0.30	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
- 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



CASE STYLE: DZ885
PRICE: \$7.95 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.

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.	
1600-4400	DC-2000		6.3 0.2 8.3*	32	20	17	—	9
4400-6000	DC-2000		6.2 0.3 8.5*	23	17	18	—	8

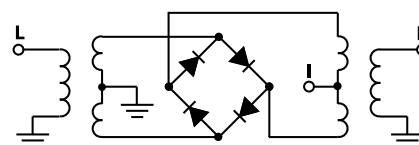
1 dB COMPR. +1 dBm typ.

*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)	
	RF	LO	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm	LO +7dBm		
1600.00	1630.00	5.85	33.44	18.92	3.21	2.77				
1800.00	1830.00	5.57	43.23	20.13	2.72	3.06				
2000.00	2030.00	5.67	35.50	19.59	1.52	3.18				
2300.00	2330.00	5.57	30.85	17.13	2.55	2.32				
2500.00	2530.00	5.67	31.53	16.64	3.70	1.12				
3000.00	3030.00	6.65	33.86	17.37	6.40	4.50				
3300.00	3330.00	6.51	33.27	17.79	2.35	4.42				
3500.00	3530.00	6.26	32.26	16.02	2.17	2.74				
3800.00	3830.00	5.85	33.61	14.80	2.21	4.29				
4000.00	4030.00	6.13	34.90	16.01	2.03	3.49				
4300.00	4330.00	6.05	33.36	17.95	1.97	3.60				
4500.00	4530.00	5.95	29.83	18.64	2.31	2.60				
4700.00	4730.00	6.02	28.69	19.14	1.78	2.51				
4900.00	4930.00	6.11	25.78	19.89	1.91	2.02				
5000.00	5030.00	5.99	24.51	20.40	1.50	1.54				
5200.00	5230.00	5.88	23.40	21.37	1.53	1.71				
5300.00	5330.00	6.06	22.68	21.68	2.25	2.45				
5500.00	5530.00	6.00	22.63	19.20	3.70	3.96				
5700.00	5730.00	6.14	23.13	15.10	5.34	6.43				
6000.00	6030.00	6.61	24.37	13.33	1.73	2.81				

Electrical Schematic



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

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