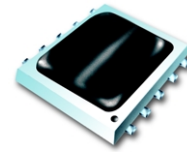


Ceramic

Frequency Mixer WIDE BAND

MCA1-12GL+

Level 4 (LO Power +4 dBm) 3800 to 12000 MHz



Features

- wide bandwidth, 3800 to 12000 MHz
- high L-R isolation, 32 dB typ.
- IF, DC to 1500 MHz
- LTCC double balanced mixer
- low cost
- low profile, 0.08"

Applications

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

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

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

The +suffix has been added in order to identify RoHS Compliance. There has been no change to the model's material, form, fit, or function. See our web site for RoHS Compliance methodologies and qualifications.

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

MODEL NO.	FREQUENCY (MHz)		CONVERSION LOSS (dB)			LO-RF ISOLATION (dB)		LO-IF ISOLATION (dB)		IP3@ center band Typ. (dBm)	E FACTOR
	LO/RF f _L -f _U	IF	\bar{x}	σ	Max.	Typ.	Min.	Typ.	Min.		
MCA1-12GL(+)	3800-12000	DC-1500	6.8	0.2	8.5*	32	17	13	8	9	0.5
	3800-6500	DC-1500									
	6500-9500	DC-1500	6.5	0.3	9.2*	38	24	40	20	7	0.3
	9500-12000	DC-1500	7.0	0.3	—	25	17	26	15	6	0.2

1dB Compr.: +1 dBm typ.
 E= (IP3(dBm)-LO Power(dBm))/10
 * Conversion loss at 30 MHz IF, increases with IF frequency

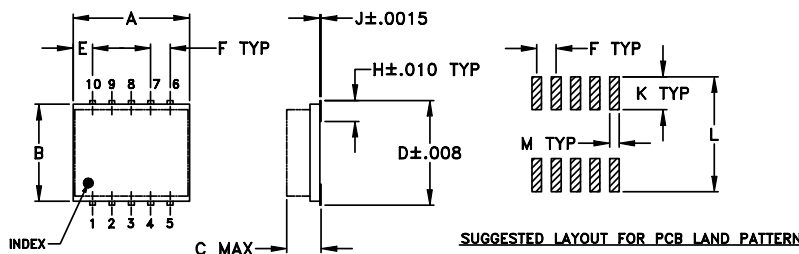
Pin Connections

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

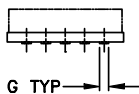
Maximum Ratings

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

Outline Drawing



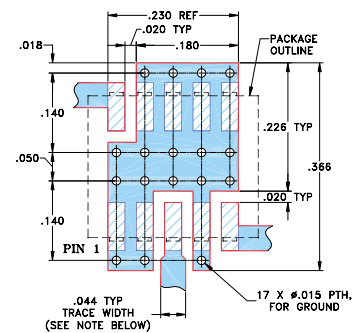
TOLERANCES
 2 PL DECIMALS ±.01
 3 PL DECIMALS ±.005
 UNLESS OTHERWISE SPECIFIED



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.30	.250	.085	.274	.050	.050	.012
7.62	6.35	2.16	6.96	1.27	1.27	0.30
H	J	K	L	M	wt	
.057	.004	.085	.296	.030	grams	
1.45	0.10	2.16	7.52	0.76	0.25	

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



NOTE: TRACE WIDTH IS SHOWN FOR ROGERS R04350 WITH DIELECTRIC THICKNESS 0.020" ± 0.0015", COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

- DENOTES PCB COPPER LAYOUT
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK



INTERNET <http://www.minicircuits.com>

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661

Distribution Centers NORTH AMERICA 800-654-7949 • 417-335-5935 • Fax 417-335-5945 • EUROPE 44-1252-832600 • Fax 44-1252-837010

Mini-Circuits ISO 9001 & ISO 14001 Certified



REV. B
 M98898
 ED-11119/1
 MCA1-12GL+
 DJ/RS/CP
 050914
 page 1 of 2

Typical Performance Data at 25°C

Frequency		Conversion Loss (dB)	Isolation L-R (dB)	Isolation L-I (dB)	VSWR LO port (:1)	VSWR RF port (:1)
RF MHz	LO MHz					
		LO +4 dBm	LO +4 dBm	LO +4 dBm	LO +4 dBm	LO +4 dBm
3800.10	3770.10	5.83	31.67	11.75	2.41	2.08
4200.10	4170.10	5.28	33.16	12.89	2.08	2.07
4600.10	4570.10	5.07	30.20	14.54	2.33	1.67
5000.10	4970.10	5.98	30.01	13.24	1.89	2.24
5400.10	5370.10	6.53	21.42	11.36	2.38	1.78
5800.10	5770.10	7.07	22.02	15.36	2.37	1.95
6200.10	6170.10	6.21	28.40	23.67	3.46	1.97
6600.10	6570.10	5.94	39.11	32.57	3.60	1.87
7000.10	6970.10	6.69	48.57	37.06	3.48	2.66
7400.10	7370.10	6.28	39.19	39.61	3.09	2.08
7800.10	7770.10	6.75	35.85	42.58	3.22	2.15
8200.10	8170.10	6.17	36.80	46.61	3.44	1.98
8600.10	8570.10	5.98	35.42	43.55	2.72	2.14
9000.10	8970.10	5.99	33.01	35.36	2.63	2.33
9400.10	9370.10	6.26	32.37	28.27	2.50	2.46
9800.10	9770.10	6.84	32.40	23.97	4.18	2.36
10200.10	10170.10	6.70	31.25	23.95	3.87	2.01
10800.10	10770.10	6.07	26.53	31.09	3.19	1.74
11200.10	11170.10	6.61	24.29	27.16	2.99	2.14
12000.10	11970.10	7.41	21.24	25.82	2.04	1.76

Performance Charts

