

Ceramic

Frequency Mixer WIDE BAND

MCA1-85+

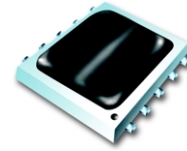
Level 7 (LO Power +7 dBm) 2800 to 8500 MHz

Features

- wide bandwidth, 2800 to 8500 MHz
- low conversion loss, 5.6 dB typ.
- high L-R isolation, 35 dB typ.
- IF, DC to 1250 MHz
- LTCC double balanced mixer
- low cost
- low profile, 0.08"

Applications

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



CASE STYLE: DZ885
 PRICE: \$8.95 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.		
MCA1-85+	2800-8500	DC-1250									
	2800-5000	DC-1250	5.5	0.2	8.1*	40	20	13	9	13	0.6
	5000-8500	DC-1250	5.7	0.2	8.2*	35	20	40	20	8	0.1

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

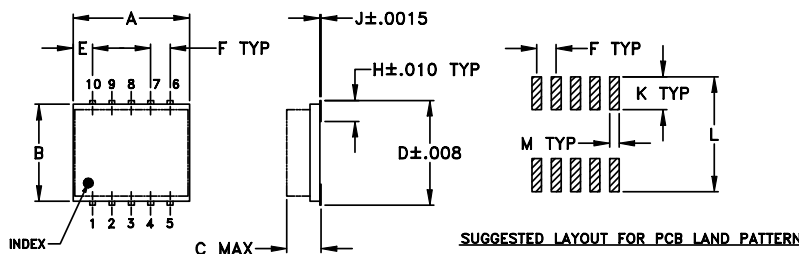
Pin Connections

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

Maximum Ratings

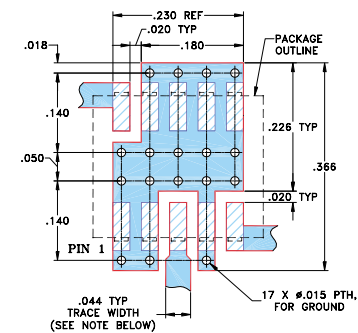
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power	50mW
IF Current	40mA

Outline Drawing



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

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

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	



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-11119/2
 MCA1-85+
 DJ/RS/CP
 050901
 page 1 of 2

Typical Performance Data at 25°C

Frequency		Conversion Loss (dB) LO +7 dBm	Isolation L-R (dB) LO +7 dBm	Isolation L-I (dB) LO +7 dBm	VSWR (:1)	
RF MHz	LO MHz				LO +7 dBm	LO +7 dBm
2800.10	2770.10	5.89	36.81	10.35	2.37	2.20
3000.10	2970.10	5.74	39.38	11.75	2.36	2.17
3500.10	3470.10	5.29	38.41	13.58	2.57	1.75
4000.10	3970.10	6.48	40.21	13.89	2.71	2.33
4500.10	4470.10	6.38	31.07	17.67	2.62	1.86
5000.10	4970.10	6.17	37.03	26.23	2.21	2.34
5500.10	5470.10	5.85	40.91	31.19	2.81	1.88
6000.10	5970.10	5.74	37.20	35.68	3.00	1.94
6500.10	6470.10	5.38	39.09	43.95	2.16	1.83
6700.10	6670.10	5.40	36.15	48.35	2.20	1.90
6800.10	6770.10	5.46	36.09	46.81	2.38	1.78
6900.10	6870.10	5.51	36.10	44.52	2.32	1.81
7000.10	6970.10	5.59	36.07	42.59	2.29	1.80
7500.10	7470.10	6.30	38.79	35.25	2.25	1.65
7600.10	7570.10	6.60	38.05	34.31	2.67	1.53
7700.10	7670.10	6.86	37.33	33.25	2.70	1.48
7800.10	7770.10	6.86	36.19	31.74	2.50	1.50
7900.10	7870.10	6.63	34.32	30.19	2.44	1.51
8000.10	7970.10	6.31	32.74	29.14	2.47	1.56
8500.10	8470.10	6.24	30.84	33.04	3.03	1.87

Performance Charts

