

Ceramic

# Frequency Mixer WIDE BAND

**NEW!** MCA1-85L

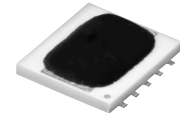
Level 4 (LO Power +4 dBm) 2800 to 8500 MHz

**Features**

- wide bandwidth, 2800 to 8500 MHz
- high L-R isolation, 35 dB typ.
- IF, DC to 1200 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



**BLUE CELL™**

CASE STYLE: DZ885  
 PRICE: \$9.45 ea. QTY (10-49)  
 (Patent pending)

**Mixer Electrical Specifications (T<sub>AMB</sub> = -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 <sub>L</sub> -f <sub>U</sub>	IF	$\bar{x}$	$\sigma$	Max.	Typ.	Min.	Typ.	Min.		
MCA1-85L	2800-8500	DC-1200	5.7	0.2	8.4	35	20	13	7	11	0.7
	2800-5000	DC-1200									
	5000-7500	DC-1200									
	7500-8500	DC-1200									
			7.0	0.3	—	31	—	32	—	8	0.4

1dB Compr.: 0 dBm typ.  
 E= [(IP3(dBm)-LO Power(dBm))/10]  
 \* Conversion loss at 30 MHz IF, increases with IF frequency

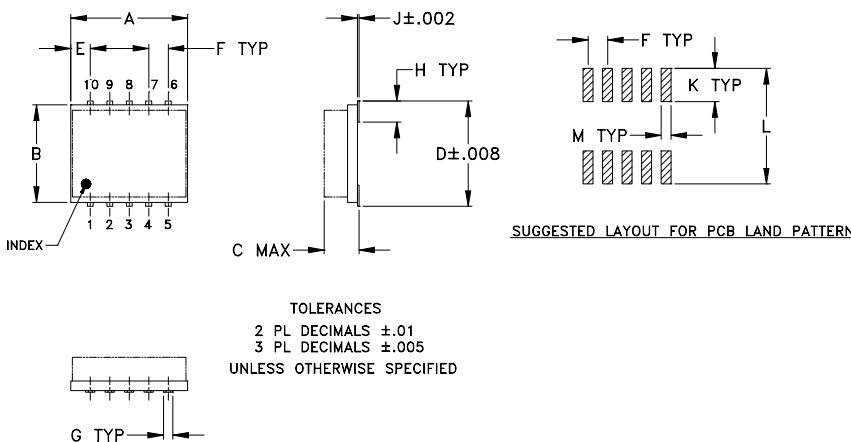
**Pin Connections**

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

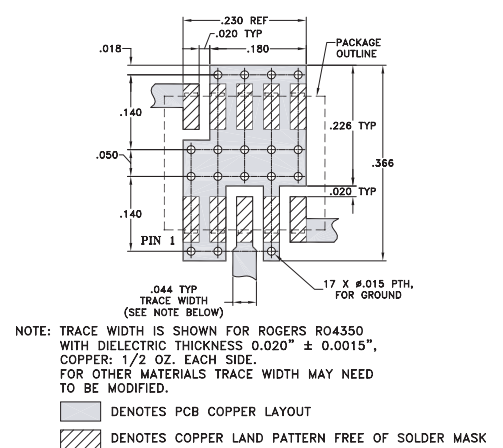
**Maximum Ratings**

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

**Outline Drawing**



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



**Outline Dimensions (inch/mm)**

A	B	C	D	E	F	G	H	J	K	L	M	wt.
.30	.250	.080	.274	.050	.050	.024	.05	.004	.085	.296	.030	grams
7.62	6.35	2.03	6.96	1.27	1.27	0.61	1.27	0.10	2.16	7.52	0.76	0.3



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

ISO 9001 CERTIFIED

REV. A  
 M88165  
 ED-11119/2  
 MCA1-85L  
 DJ/RS/CP  
 030728  
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## 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
2800.10	2770.10	6.06	39.50	11.58	1.91	2.48
3000.10	2970.10	5.85	44.16	13.00	1.84	2.48
3500.10	3470.10	5.47	39.32	13.49	1.86	2.00
4000.10	3970.10	6.67	35.79	12.28	2.08	2.46
4500.10	4470.10	6.70	28.08	16.04	2.43	2.01
5000.10	4970.10	6.55	35.79	27.00	2.28	2.60
5500.10	5470.10	6.27	42.78	33.73	3.31	2.22
6000.10	5970.10	6.26	36.23	37.80	4.41	2.15
6500.10	6470.10	5.90	36.41	47.06	3.13	2.10
6700.10	6670.10	5.84	33.42	50.18	3.06	2.18
6800.10	6770.10	5.84	33.65	46.65	3.62	2.00
6900.10	6870.10	5.88	33.84	43.73	3.35	2.07
7000.10	6970.10	5.98	33.85	41.08	3.19	2.07
7500.10	7470.10	6.80	39.32	33.99	3.16	1.83
7600.10	7570.10	7.17	39.67	33.16	3.99	1.68
7700.10	7670.10	7.41	40.86	32.27	4.00	1.63
7800.10	7770.10	7.48	40.67	31.25	3.52	1.68
7900.10	7870.10	7.28	37.86	30.76	3.52	1.70
8000.10	7970.10	7.02	35.05	30.85	3.68	1.77
8500.10	8470.10	6.93	32.51	33.93	4.99	2.22

## Performance Charts

