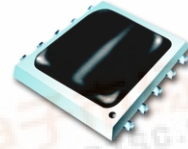


Ceramic

# Frequency Mixer WIDE BAND

## MCA1-85L+

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



**BLUE CELL™**

CASE STYLE: DZ885  
PRICE: \$9.45 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.

### 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

### 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	6.0	0.3	8.4*	35	20	38	20	7	0.3
	5000-7500	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

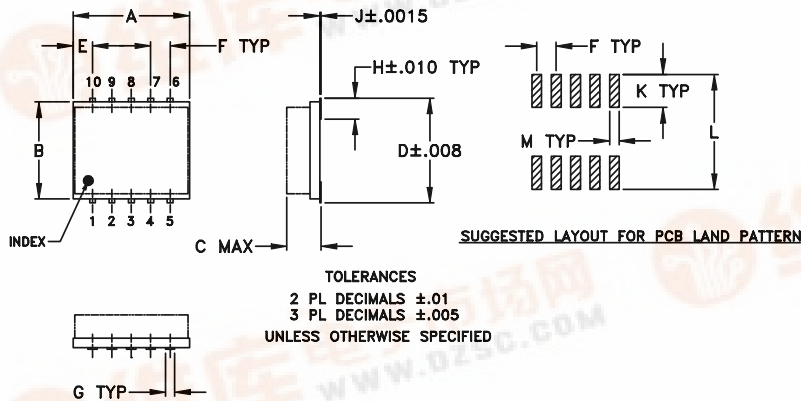
### Pin Connections

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

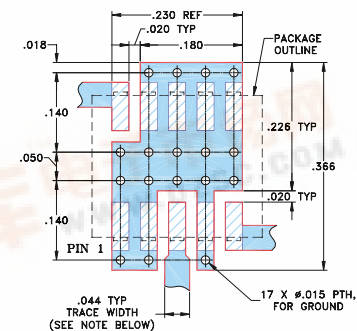
### Maximum Ratings

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
.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	
1.5	0.10	2.16	7.52	0.76	0.25	



## 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

