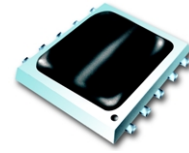


Ceramic

Frequency Mixer WIDE BAND

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

MCA1-85L+



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_{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 | -x | σ | Max. | Typ. | Min. | Typ. | Min. | | |
| MCA1-85L+ | 2800-8500 | DC-1200 | | | | | | | | | |
| | 2800-5000 | DC-1200 | 5.7 | 0.2 | 8.4* | 35 | 20 | 13 | 7 | 11 | 0.7 |
| | 5000-7500 | DC-1200 | 6.0 | 0.3 | 8.4* | 35 | 20 | 38 | 20 | 7 | 0.3 |
| | 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

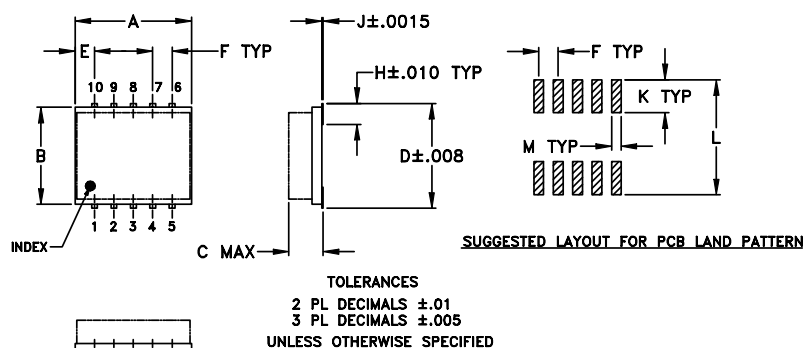
Pin Connections

| | |
|--------|---------------|
| 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 |

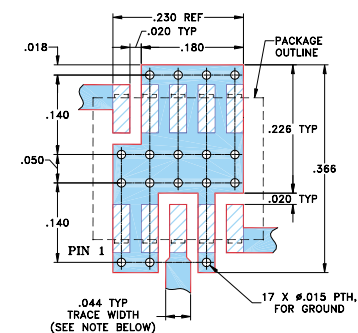
Outline Drawing



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)



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

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REV. B
 M98898
 ED-11119/2
 MCA1-85L+
 DJ/RS/CP
 050901
 Page 1 of 2

Typical Performance Data at 25°C

| Frequency | | Conversion Loss | Isolation L-R | Isolation L-I | VSWR LO port | VSWR RF port |
|-----------|---------|-----------------|---------------|---------------|--------------|--------------|
| RF | LO | (dB) | (dB) | (dB) | (:1) | (:1) |
| MHz | MHz | LO | LO | LO | LO | LO |
| | | +4 dBm | +4 dBm | +4 dBm | +4 dBm | +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

