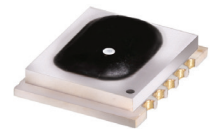


Frequency Mixer WIDE BAND

MCA1T-80LH+

Level 10 (LO Power+10 dBm) 2800 to 8000 MHz



CASE STYLE: DZ885-2

Maximum Ratings

| | |
|-----------------------|---------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -40°C to 85°C |
| RF Power | 50 mW |
| IF Current | 40 mA |

Permanent damage may occur if any of these limits are exceeded.

Pin Connections

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

Features

- wide bandwidth, 2800 to 8000 MHz
- low conversion loss, 5.9 dB typ.
- high L-R isolation, 35 dB typ.
- IF, DC to 1250 MHz
- LTCC double balanced mixer
- aqueous washable
- low cost
- low profile, 0.095"
- protected by US Patent 7,027,795 & 8,749,989

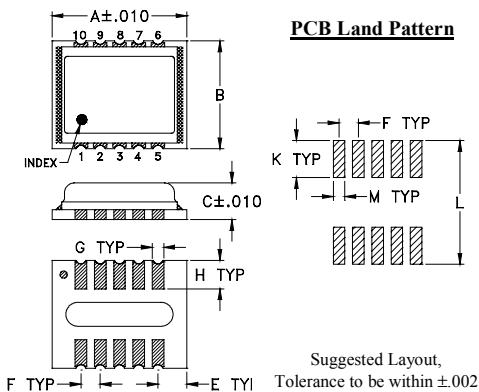
Applications

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

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

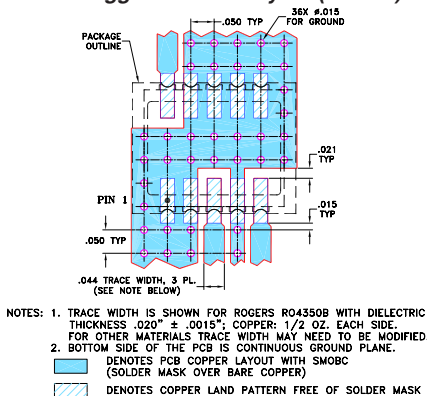
Outline Drawing



Outline Dimensions (inch/mm)

| A | B | C | E | F | G |
|------|------|------|------|-------|------|
| .350 | .280 | .095 | .075 | .050 | .030 |
| 8.89 | 7.11 | 2.41 | 1.91 | 1.27 | 0.76 |
| H | K | L | M | wt | |
| .074 | .096 | .321 | .030 | grams | |
| 1.88 | 2.44 | 8.15 | 0.76 | 0.21 | |

Demo Board MCL P/N: TB-493+ Suggested PCB Layout (PL-288)



Notes

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Electrical Specifications (T_{AMB} = -40°C to 85°C)

| FREQUENCY (MHz) | | CONVERSION LOSS (dB) | | | LO-RF ISOLATION (dB) | | LO-IF ISOLATION (dB) | | IP3 at center band (dBm) |
|--------------------------------------|---------|----------------------|----------|------|----------------------|------|----------------------|------|--------------------------|
| LO/RF f _c -f _u | IF | \bar{X} | σ | Max. | Typ. | Min. | Typ. | Min. | Typ. |
| 2800-8000 | DC-1250 | 6.0 | 0.2 | 8.4* | 35 | 25 | 13 | 8 | 15 |
| 2800-5000 | DC-1250 | | | | | | | | |
| 5000-8000 | DC-1250 | 5.7 | 0.2 | 8.2* | 35 | 20 | 40 | 19 | 12 |

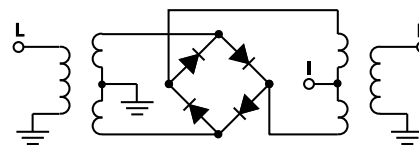
1 dB COMPR. +5 dBm typ.

* Conversion loss at 30 MHz IF, increases with IF frequency.

Typical Performance Data

| Frequency (MHz) | | Conversion Loss (dB) | Isolation L-R (dB) | Isolation L-I (dB) | VSWR RF Port (:1) | VSWR LO Port (:1) |
|-----------------|---------|----------------------|--------------------|--------------------|-------------------|-------------------|
| RF | LO | LO +10dBm | LO +10dBm | LO +10dBm | LO +10dBm | LO +10dBm |
| 2800.00 | 2830.10 | 6.01 | 38.69 | 10.54 | 2.56 | 2.86 |
| 3106.00 | 3136.10 | 5.29 | 41.71 | 12.00 | 2.28 | 2.83 |
| 3406.00 | 3436.10 | 4.98 | 40.03 | 13.45 | 1.68 | 2.69 |
| 3706.00 | 3736.10 | 4.91 | 29.58 | 13.53 | 1.45 | 2.58 |
| 4000.00 | 4030.10 | 5.72 | 31.08 | 13.04 | 1.96 | 2.56 |
| 4300.00 | 4330.10 | 6.77 | 28.29 | 15.90 | 1.99 | 2.60 |
| 4600.00 | 4630.10 | 6.42 | 29.67 | 20.20 | 1.70 | 2.57 |
| 4900.00 | 4930.10 | 6.53 | 41.70 | 23.73 | 2.24 | 2.35 |
| 5200.00 | 5230.10 | 5.64 | 41.08 | 26.38 | 2.00 | 2.36 |
| 5500.00 | 5530.10 | 5.70 | 42.50 | 28.95 | 1.84 | 2.20 |
| 5800.00 | 5830.10 | 5.77 | 50.71 | 32.43 | 2.05 | 2.18 |
| 6100.00 | 6130.10 | 6.17 | 40.53 | 35.90 | 2.78 | 2.43 |
| 6400.00 | 6430.10 | 5.77 | 37.72 | 39.36 | 2.50 | 2.32 |
| 6700.00 | 6730.10 | 5.66 | 33.56 | 43.31 | 2.41 | 2.48 |
| 7000.00 | 7030.10 | 5.55 | 31.26 | 41.62 | 2.28 | 2.56 |
| 7300.00 | 7330.10 | 5.66 | 31.10 | 37.52 | 2.24 | 2.48 |
| 7600.00 | 7630.10 | 5.85 | 28.60 | 30.61 | 2.18 | 2.54 |
| 7800.00 | 7830.10 | 5.79 | 28.27 | 23.94 | 1.96 | 2.43 |
| 7900.00 | 7930.10 | 5.83 | 27.62 | 20.54 | 1.79 | 2.41 |
| 8000.00 | 8030.10 | 5.80 | 25.80 | 19.33 | 1.60 | 2.52 |

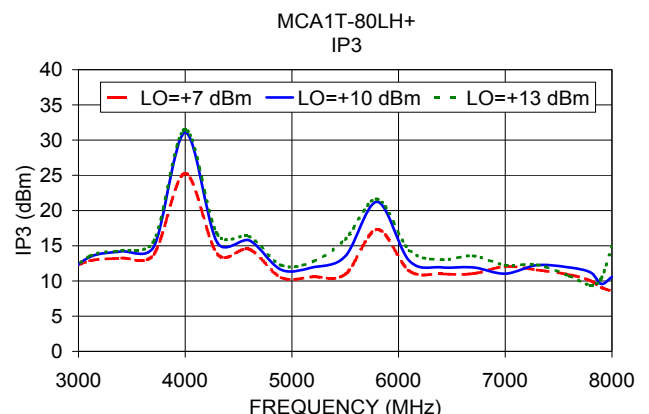
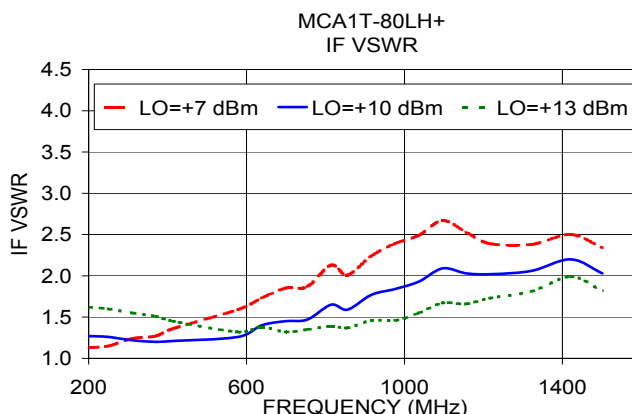
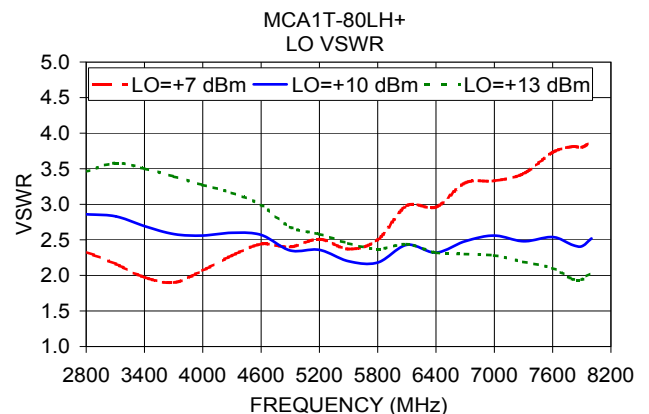
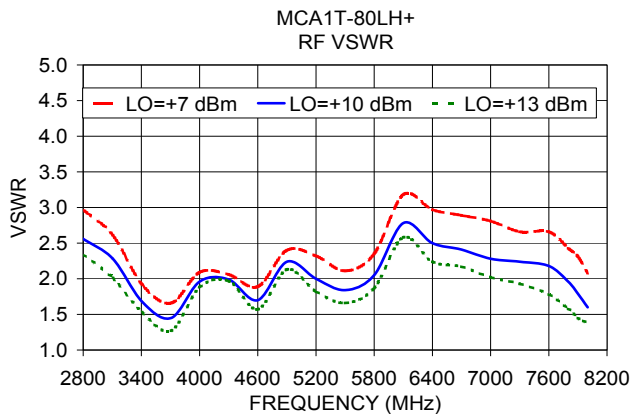
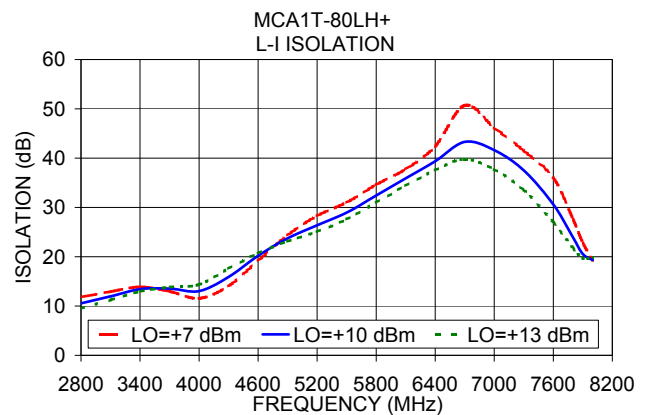
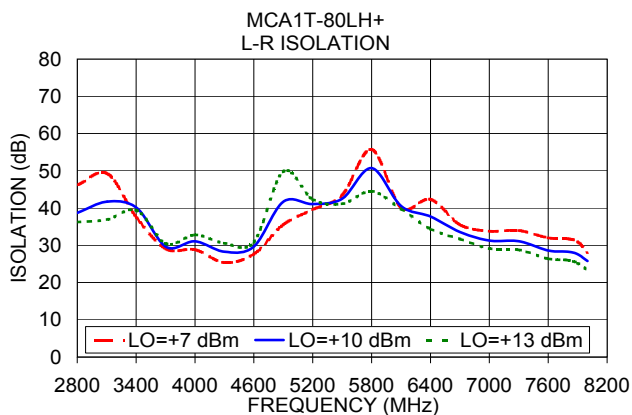
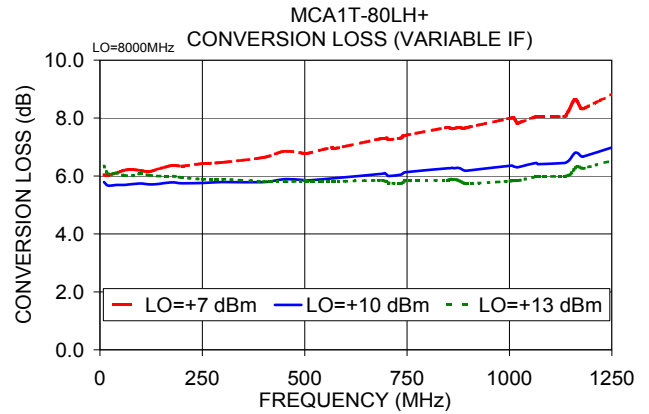
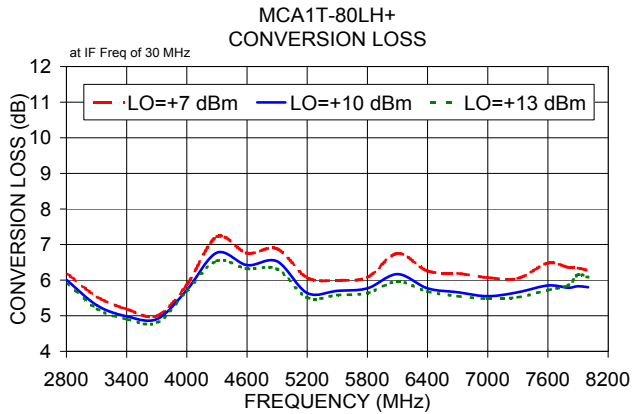
Electrical Schematic



NON-CATALOG

Performance Charts

MCA1T-80LH+



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