

Coaxial Frequency Mixer

Level 17 (LO Power +17 dBm) 2 to 500 MHz

ZFM-1H+
ZFM-1H



SMA version shown
CASE STYLE: K18

| Connectors | Model | Price | Qty. |
|-----------------------------|-------------|-------------|-------|
| BNC | ZFM-1H(+) | \$64.95 ea. | (1-9) |
| SMA | ZFM-1H-S(+) | \$69.95 ea. | (1-9) |
| BRACKET (OPTION "B") | | \$2.50 | (1+) |

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

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

Maximum Ratings

| | |
|-----------------------|----------------|
| Operating Temperature | -55°C to 100°C |
| Storage Temperature | -55°C to 100°C |
| RF Power | 200mW |
| IF Current | 40mA |

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

Coaxial Connections

| | |
|----|---|
| LO | 1 |
| RF | 2 |
| IF | 3 |

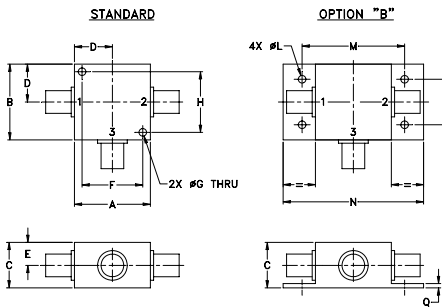
Features

- low conversion loss, 6.14 dB typ.
- good L-R isolation, 40 dB typ, L-I, 35 dB typ.
- rugged shielded case

Applications

- VHF/UHF
- defense & federal communications
- FM radio
- instrumentation

Outline Drawing



Outline Dimensions (inch/mm)

| A | B | C | D | E | F | G | H |
|-------|-------|-------|-------|-------|-------|------|-------|
| 1.25 | 1.25 | .75 | .63 | .38 | 1.00 | .125 | 1.000 |
| 31.75 | 31.75 | 19.05 | 16.00 | 9.65 | 25.40 | 3.18 | 25.40 |
| J | K | L | M | N | P | Q | wt |
| -- | -- | .125 | 1.688 | 2.18 | .75 | .07 | grams |
| -- | -- | 3.18 | 42.88 | 55.37 | 19.05 | 1.78 | 70.0 |

Electrical Specifications

| FREQUENCY (MHz) | | CONVERSION LOSS (dB) | | | | LO-RF ISOLATION (dB) | | | | | | LO-IF ISOLATION (dB) | | | | | |
|-----------------|--------|----------------------|----------|-------------|------|----------------------|------|------|------|------|------|----------------------|------|------|------|----|----|
| LO/RF | IF | Mid-Band | | Total Range | Max. | L | | M | | U | | L | | M | | U | |
| | | \bar{X} | σ | | | Typ. | Min. | Typ. | Min. | Typ. | Min. | Typ. | Min. | Typ. | Min. | | |
| 2-500 | DC-500 | 6.14 | 0.11 | 7.5 | 8.5 | 50 | 45 | 40 | 30 | 30 | 25 | 45 | 35 | 35 | 25 | 25 | 20 |

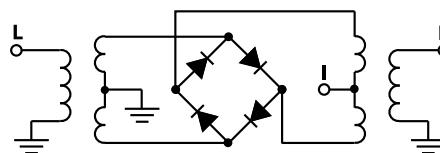
1 dB COMP.: +14 dBm typ.

L = low range [f_L to $10 f_L$] M = mid range [$10 f_L$ to $f_U/2$] U = upper range [$f_U/2$ to f_U]
m = mid band [$2f_L$ to $f_U/2$]

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 +17dBm | LO +17dBm | LO +17dBm | LO +17dBm | LO +17dBm |
| 2.00 | 32.00 | 6.30 | 62.98 | 52.28 | 1.22 | 1.67 |
| 5.00 | 35.00 | 5.95 | 62.06 | 52.79 | 1.10 | 1.60 |
| 10.00 | 40.00 | 5.92 | 60.47 | 52.35 | 1.03 | 1.63 |
| 20.00 | 50.00 | 5.91 | 57.14 | 51.13 | 1.02 | 1.61 |
| 34.13 | 64.13 | 5.81 | 53.27 | 49.30 | 1.04 | 1.58 |
| 50.00 | 80.00 | 5.72 | 50.24 | 47.27 | 1.06 | 1.57 |
| 66.26 | 96.26 | 5.66 | 48.03 | 45.61 | 1.07 | 1.55 |
| 82.33 | 122.33 | 5.71 | 46.33 | 44.27 | 1.08 | 1.54 |
| 100.00 | 140.00 | 5.63 | 44.99 | 43.26 | 1.09 | 1.57 |
| 130.52 | 180.52 | 5.61 | 43.18 | 41.91 | 1.10 | 1.55 |
| 162.65 | 222.65 | 5.61 | 41.46 | 40.45 | 1.10 | 1.55 |
| 200.00 | 280.00 | 5.60 | 40.12 | 39.22 | 1.08 | 1.60 |
| 259.04 | 358.04 | 5.42 | 38.10 | 37.51 | 1.07 | 1.67 |
| 307.24 | 429.24 | 5.62 | 37.54 | 36.13 | 1.06 | 1.70 |
| 355.43 | 506.43 | 5.86 | 37.41 | 36.94 | 1.05 | 1.76 |
| 387.56 | 551.56 | 5.92 | 36.35 | 35.99 | 1.04 | 1.82 |
| 435.76 | 613.76 | 5.81 | 35.35 | 35.91 | 1.05 | 1.84 |
| 467.89 | 659.89 | 5.90 | 36.34 | 33.81 | 1.06 | 1.85 |
| 483.95 | 689.95 | 6.08 | 36.44 | 33.54 | 1.08 | 1.87 |
| 500.00 | 700.00 | 6.27 | 36.27 | 33.21 | 1.09 | 1.90 |

Electrical Schematic



Mini-Circuits
ISO 9001 ISO 14001 AS 9100 CERTIFIED

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IF/RF MICROWAVE COMPONENTS

For detailed performance specs & shopping online see web site

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet are subject to Mini-Circuit's standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuit's website at www.minicircuits.com/MCLStore/terms.jsp.

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Performance Charts

ZFM-1H+ ZFM-1H

