

# Coaxial Frequency Mixer

## ZP-3H+ ZP-3H

Level 17 (LO Power +17 dBm) 0.15 to 400 MHz



### 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 | L |
| RF | R |
| IF | X |

### Features

- low conversion loss, 5.0 dB typ.
- high L-R isolation, 50 dB typ., L-I, 45 dB typ.
- rugged shielded case

### Applications

- VHF/UHF
- defense & federal communications
- instrumentation

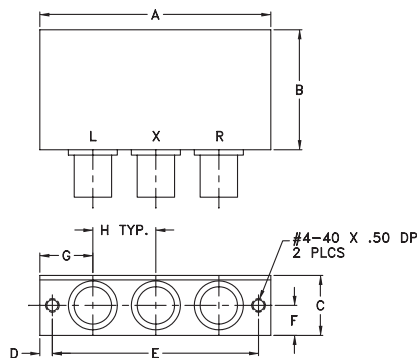
BNC version shown  
CASE STYLE: GG60

|            |            |
|------------|------------|
| Connectors | Model      |
| BNC        | ZP-3H+     |
| SMA        | ZP-3H-S(+) |

**+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     | D    | E     | F    | G     | H     | wt    |
|-------|-------|-------|------|-------|------|-------|-------|-------|
| 2.31  | 1.20  | .60   | .125 | 2.062 | .30  | .53   | .63   | grams |
| 58.67 | 30.48 | 15.24 | 3.18 | 52.37 | 7.62 | 13.46 | 16.00 | 75.0  |

### Electrical Specifications

| FREQUENCY (MHz)        | CONVERSION LOSS (dB)          | LO-RF ISOLATION (dB) |          |                  |     |      |      | LO-IF ISOLATION (dB) |      |      |      |      |      |      |      |      |      |
|------------------------|-------------------------------|----------------------|----------|------------------|-----|------|------|----------------------|------|------|------|------|------|------|------|------|------|
|                        |                               | Mid-Band m           |          | Total Range Max. |     | L    |      | M                    |      | U    |      | L    |      | M    |      | U    |      |
| LO/RF<br>$f_L$ - $f_U$ | IF<br>$\bar{X}$ $\sigma$ Max. | $\bar{X}$            | $\sigma$ | Max.             | 8.0 | Typ. | Min. | Typ.                 | Min. | Typ. | Min. | Typ. | Min. | Typ. | Min. | Typ. | Min. |
| 0.15-400               | DC-400                        | 5.0                  | 0.33     | 7.0              | 8.0 | 60   | 50   | 50                   | 35   | 40   | 30   | 60   | 40   | 45   | 25   | 35   | 20   |

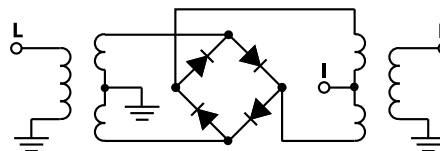
1 dB COMP.: +14 dBm typ.

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) | VSWR RF Port (:1) | Frequency (MHz) | Isolation L-R (dB) | Isolation L-I (dB) | VSWR LO Port (:1) |
|-----------------|--------|----------------------|-------------------|-----------------|--------------------|--------------------|-------------------|
| RF              | LO     | LO +17dBm            | LO +17dBm         | LO              | LO +17dBm          | LO +17dBm          | LO +17dBm         |
| 0.15            | 30.15  | 5.73                 | 1.50              | 10.00           | 82.56              | 73.10              | 1.50              |
| 0.30            | 30.30  | 5.50                 | 1.42              | 20.00           | 77.94              | 72.84              | 1.49              |
| 0.50            | 30.50  | 5.40                 | 1.41              | 40.00           | 73.33              | 71.28              | 1.46              |
| 0.75            | 30.75  | 5.32                 | 1.41              | 50.00           | 71.91              | 69.09              | 1.49              |
| 1.00            | 31.00  | 5.29                 | 1.41              | 68.00           | 70.74              | 64.21              | 1.48              |
| 2.80            | 32.80  | 5.15                 | 1.42              | 86.00           | 70.55              | 58.19              | 1.45              |
| 10.00           | 40.00  | 5.07                 | 1.36              | 104.00          | 68.91              | 54.46              | 1.47              |
| 20.00           | 50.00  | 5.01                 | 1.35              | 122.00          | 69.27              | 51.05              | 1.48              |
| 38.00           | 68.00  | 4.98                 | 1.35              | 140.00          | 65.14              | 48.62              | 1.50              |
| 56.00           | 86.00  | 4.96                 | 1.29              | 176.00          | 69.38              | 45.57              | 1.52              |
| 110.00          | 140.00 | 5.08                 | 1.26              | 212.00          | 58.50              | 42.60              | 1.55              |
| 128.00          | 158.00 | 5.07                 | 1.25              | 230.00          | 54.52              | 41.38              | 1.56              |
| 164.00          | 194.00 | 5.10                 | 1.19              | 255.00          | 55.28              | 41.47              | 1.61              |
| 200.00          | 230.00 | 5.24                 | 1.16              | 280.00          | 56.41              | 41.92              | 1.60              |
| 250.00          | 280.00 | 5.41                 | 1.11              | 305.00          | 51.98              | 40.69              | 1.64              |
| 300.00          | 330.00 | 5.43                 | 1.00              | 330.00          | 48.01              | 38.86              | 1.66              |
| 325.00          | 355.00 | 5.40                 | 1.05              | 355.00          | 49.07              | 36.77              | 1.65              |
| 350.00          | 380.00 | 5.46                 | 1.08              | 380.00          | 53.89              | 34.86              | 1.74              |
| 375.00          | 405.00 | 5.63                 | 1.15              | 405.00          | 51.11              | 33.11              | 1.90              |
| 400.00          | 430.00 | 6.10                 | 1.28              | 430.00          | 47.28              | 33.20              | 1.89              |

### Electrical Schematic

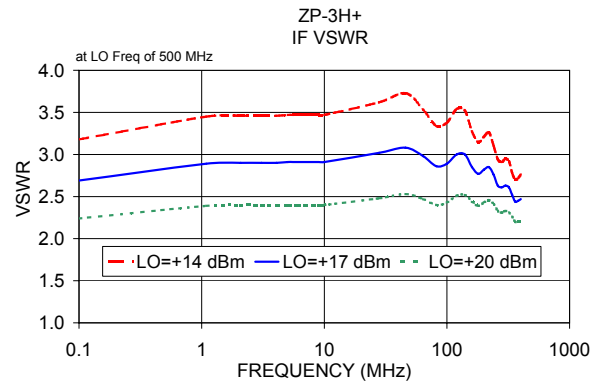
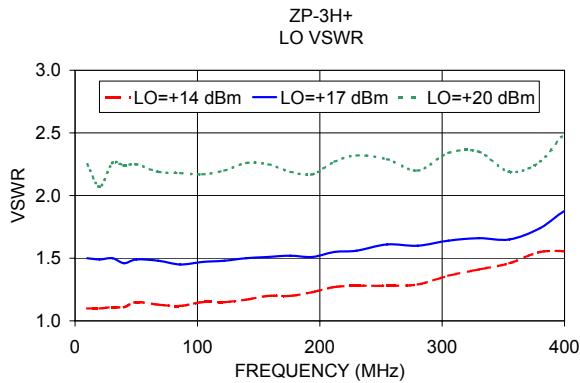
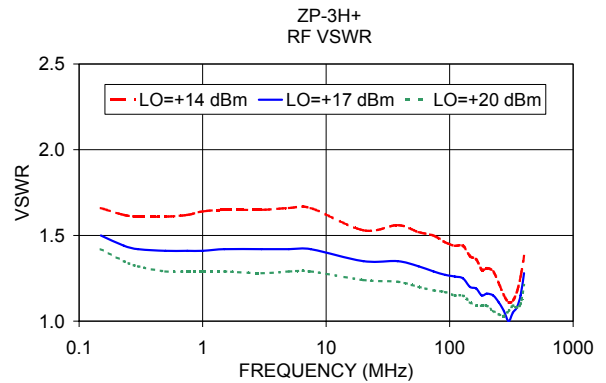
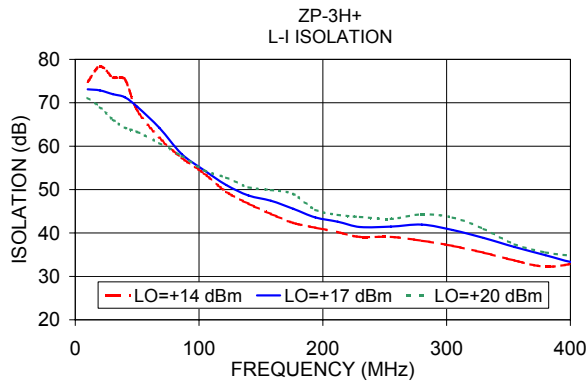
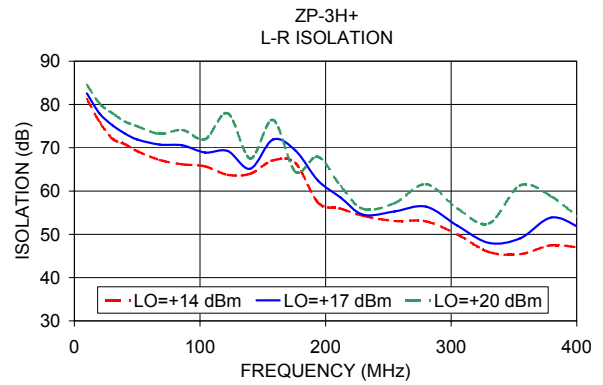
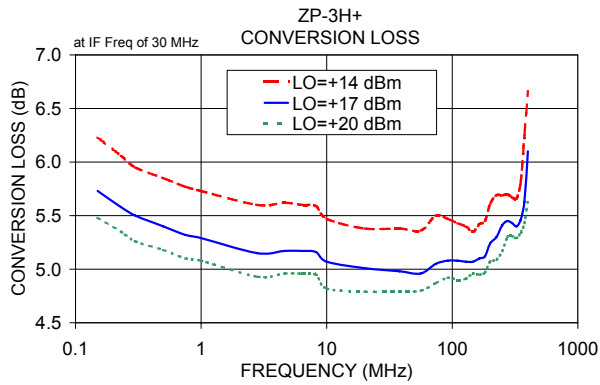


### Notes

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## Performance Charts



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