

# Coaxial Frequency Mixer

## ZX05-42MH+

Level 13 (LO Power +13 dBm) 5 to 4200 MHz

### Maximum Ratings

|                       |                |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°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

- rugged construction
- small size
- low conversion loss
- high L-R isolation
- protected by US Patents 6,133,525 & 6,790,049

### Applications

- cellular
- PCS
- instrumentation
- satellite communication



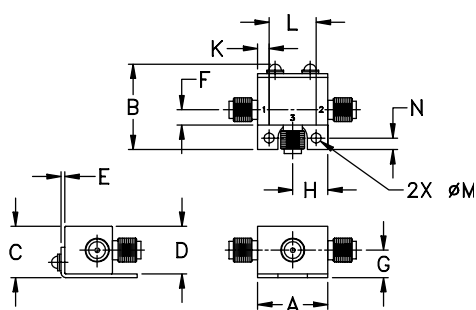
CASE STYLE: FL905

| Connectors | Model        | Price       | Qty.   |
|------------|--------------|-------------|--------|
| SMA        | ZX05-42MH-S+ | \$39.95 ea. | (1-24) |

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

The +Suffix has been added in order to identify 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    |
|-------|-------|-------|-------|------|------|------|
| .74   | .90   | .54   | .50   | .04  | .16  | .29  |
| 18.80 | 22.86 | 13.72 | 12.70 | 1.02 | 4.06 | 7.37 |

| H    | J  | K    | L     | M    | N    | wt    |
|------|----|------|-------|------|------|-------|
| .37  | -- | .122 | .496  | .106 | .122 | grams |
| 9.40 | -- | 3.10 | 12.60 | 2.69 | 3.10 | 20.0  |

### Electrical Specifications (T<sub>AMB</sub>=25°C)

| FREQUENCY (MHz) |        | CONVERSION LOSS (dB) |          |      |             | LO-RF ISOLATION (dB) |      |      |      |      |      | LO-IF ISOLATION (dB) |      |      |      |      |      | IP3 at center band (dBm) |
|-----------------|--------|----------------------|----------|------|-------------|----------------------|------|------|------|------|------|----------------------|------|------|------|------|------|--------------------------|
| LO/RF           | IF     | Mid-Band             |          |      | Total Range | L                    |      | M    |      | U    |      | L                    |      | M    |      | U    |      |                          |
|                 |        | $\overline{X}$       | $\sigma$ | Max. |             | Typ.                 | Min. | Typ. | Min. | Typ. | Min. | Typ.                 | Min. | Typ. | Min. | Typ. | Min. |                          |
|                 |        | $f_L$ - $f_U$        |          |      |             |                      |      |      |      |      |      |                      |      |      |      |      |      |                          |
| 5-4200          | 5-3500 | 7.5                  | 0.2      | 9.8  | 11.8        | 47                   | 28   | 29   | 20   | 30   | 15   | 34                   | 23   | 26   | 17   | 23   | 17   | 19                       |

1 dB COMP.: +9 dBm typ.

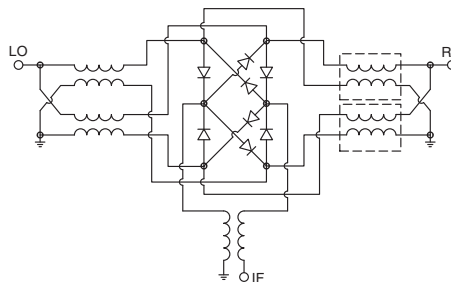
L = low range [ $f_L$  to  $10 f_L$ ]  
M = mid range [ $10 f_L$  to  $f_U/2$ ]  
U = upper range [ $f_U/2$  to  $f_U$ ]

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 +13dBm            | LO +13dBm          | LO +13dBm          | LO +13dBm         | LO +13dBm         |
| 5.10            | 35.10   | 7.31                 | 45.95              | 33.54              | 1.31              | 2.39              |
| 20.10           | 50.10   | 7.13                 | 55.97              | 35.83              | 1.21              | 2.33              |
| 100.10          | 70.10   | 7.16                 | 55.79              | 35.64              | 1.18              | 2.30              |
| 305.66          | 275.66  | 7.25                 | 42.66              | 33.81              | 1.09              | 2.24              |
| 516.77          | 486.77  | 7.39                 | 38.77              | 31.55              | 1.18              | 2.11              |
| 727.88          | 697.88  | 7.37                 | 37.99              | 28.97              | 1.43              | 1.91              |
| 938.99          | 908.99  | 7.48                 | 39.66              | 27.24              | 1.79              | 1.79              |
| 1150.10         | 1120.10 | 7.63                 | 46.71              | 25.76              | 2.01              | 1.65              |
| 1361.21         | 1331.21 | 7.98                 | 46.26              | 24.65              | 2.17              | 1.53              |
| 1572.32         | 1542.32 | 8.18                 | 40.21              | 24.25              | 2.31              | 1.45              |
| 1783.43         | 1753.43 | 8.20                 | 36.57              | 24.45              | 2.07              | 1.35              |
| 1994.54         | 1964.54 | 8.27                 | 34.51              | 24.79              | 1.97              | 1.34              |
| 2200.10         | 2170.10 | 8.25                 | 32.76              | 24.92              | 1.88              | 1.36              |
| 2485.81         | 2455.81 | 8.28                 | 31.48              | 24.30              | 1.95              | 1.35              |
| 2771.53         | 2741.53 | 8.66                 | 30.19              | 23.95              | 1.86              | 1.35              |
| 3057.24         | 3027.24 | 8.99                 | 28.98              | 24.12              | 1.96              | 1.27              |
| 3342.96         | 3312.96 | 9.21                 | 28.90              | 24.58              | 1.80              | 1.11              |
| 3628.67         | 3598.67 | 9.11                 | 29.94              | 25.59              | 1.81              | 1.14              |
| 3914.39         | 3884.39 | 9.25                 | 31.33              | 26.21              | 1.38              | 1.25              |
| 4200.10         | 4170.10 | 9.88                 | 31.78              | 27.67              | 1.21              | 1.39              |

### Electrical Schematic



**Mini-Circuits®**  
ISO 9001 ISO 14001 AS 9100 CERTIFIED

For detailed performance specs & shopping online see web site

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine Provides ACTUAL Data Instantly at [minicircuits.com](http://minicircuits.com)

**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-Circuits 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-Circuits' website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp).

REV. D  
M108294  
ZX05-42MH  
RVN/TD/CP/AM  
091007  
Page 1 of 2

