

# Frequency Mixer

Level 17 (LO Power +17 dBm) 100 to 1700 MHz

## ZX05-17H-S+

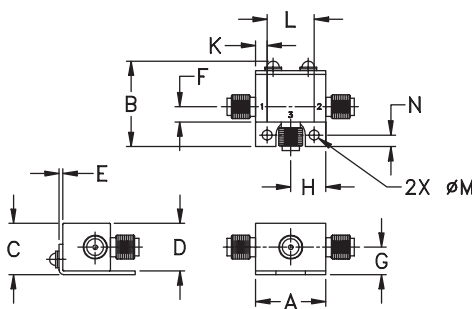
### Maximum Ratings

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

### 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  |

### 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



Generic photo used for illustration purposes only

CASE STYLE: FL905

| Connectors | Model       |
|------------|-------------|
| SMA        | ZX05-17H-S+ |

**+RoHS Compliant**

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

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

| FREQUENCY<br>(MHz)     |         | CONVERSION LOSS<br>(dB) |          |                        |      | LO-RF ISOLATION<br>(dB) |      |   |      | LO-IF ISOLATION<br>(dB) |      |    |      | IP3<br>at<br>center<br>band<br>(dBm) |      |      |    |    |
|------------------------|---------|-------------------------|----------|------------------------|------|-------------------------|------|---|------|-------------------------|------|----|------|--------------------------------------|------|------|----|----|
| LO/RF<br>$f_L$ - $f_U$ | IF      | Mid-Band<br>$\sigma$    |          | Total<br>Range<br>Max. | Max. | L                       |      | U | Typ. | L                       |      | U  | Typ. |                                      |      |      |    |    |
|                        |         | $\overline{X}$          | $\sigma$ |                        |      | Typ.                    | Min. |   |      | Typ.                    | Min. |    |      |                                      | Typ. | Min. |    |    |
| 100-1700               | 50-1500 | 7.2                     | 0.1      | 8.5                    | 9.5  | 32                      | 20   |   |      | 36                      | 22   | 32 | 20   |                                      |      | 37   | 22 | 25 |

1 dB COMP.: +14 dBm typ.

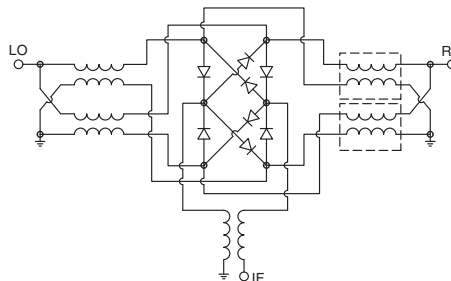
L = 100 - 850 MHz  
m= mid band [ $f_L/2$  to  $f_U/2$ ]

U = upper range [ $f_U/2$  to  $f_U$ ]

### 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         |
| 100.10          | 130.11  | 7.96                 | 29.37              | 29.75              | 1.48              | 1.71              |
| 179.05          | 209.06  | 7.83                 | 30.72              | 31.15              | 1.37              | 1.64              |
| 258.00          | 288.01  | 7.74                 | 31.94              | 32.85              | 1.30              | 1.64              |
| 336.94          | 366.95  | 7.65                 | 33.24              | 34.50              | 1.30              | 1.65              |
| 455.36          | 485.37  | 7.57                 | 33.98              | 36.15              | 1.33              | 1.61              |
| 573.78          | 603.79  | 7.72                 | 34.72              | 38.47              | 1.41              | 1.64              |
| 652.73          | 682.74  | 7.66                 | 34.93              | 39.68              | 1.44              | 1.60              |
| 731.68          | 761.69  | 7.68                 | 34.37              | 40.44              | 1.46              | 1.62              |
| 810.63          | 840.64  | 7.79                 | 34.47              | 41.10              | 1.48              | 1.70              |
| 900.10          | 930.11  | 7.77                 | 34.41              | 42.20              | 1.47              | 1.72              |
| 984.31          | 1014.32 | 7.68                 | 34.35              | 43.77              | 1.45              | 1.82              |
| 1068.52         | 1098.53 | 7.75                 | 32.18              | 39.71              | 1.46              | 1.91              |
| 1152.73         | 1182.74 | 7.90                 | 30.24              | 38.47              | 1.46              | 2.06              |
| 1236.94         | 1266.95 | 7.89                 | 30.45              | 39.51              | 1.46              | 2.11              |
| 1321.15         | 1351.16 | 7.82                 | 30.76              | 41.10              | 1.49              | 2.13              |
| 1405.36         | 1435.37 | 7.78                 | 31.39              | 43.13              | 1.52              | 2.16              |
| 1489.57         | 1519.58 | 7.78                 | 30.65              | 46.17              | 1.53              | 2.12              |
| 1573.78         | 1603.79 | 7.95                 | 29.38              | 54.03              | 1.55              | 2.08              |
| 1658.00         | 1688.01 | 8.00                 | 29.37              | 53.22              | 1.55              | 2.09              |
| 1700.10         | 1670.09 | 8.08                 | 29.74              | 47.47              | 1.37              | 2.21              |

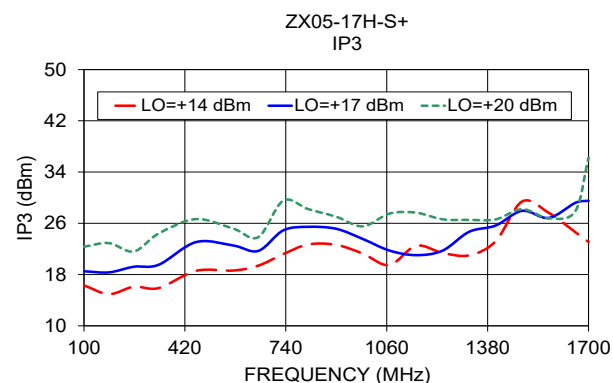
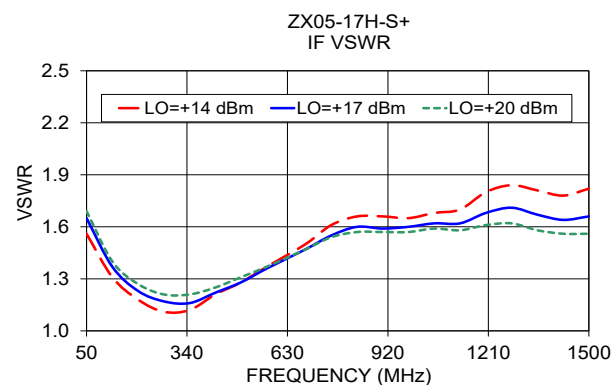
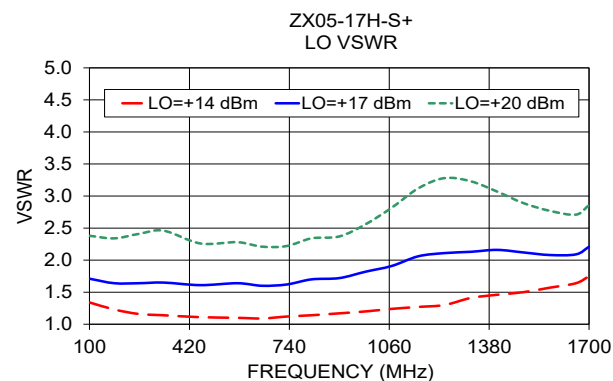
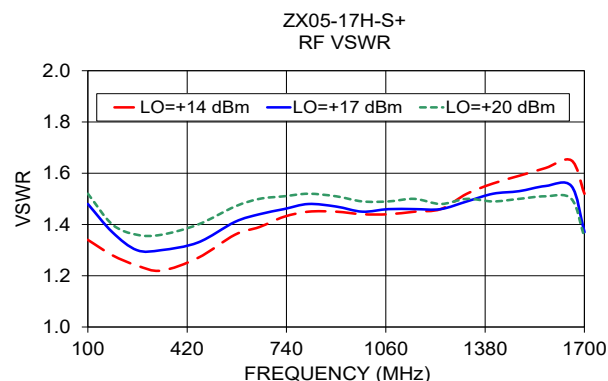
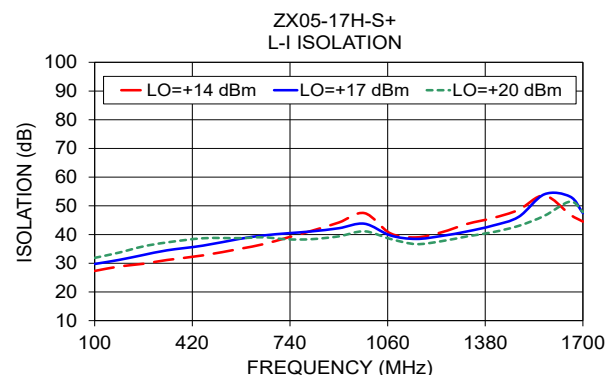
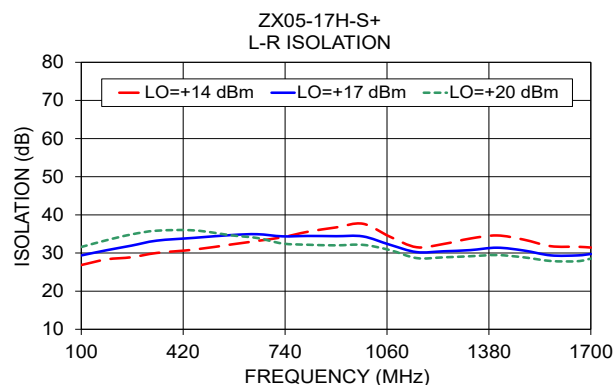
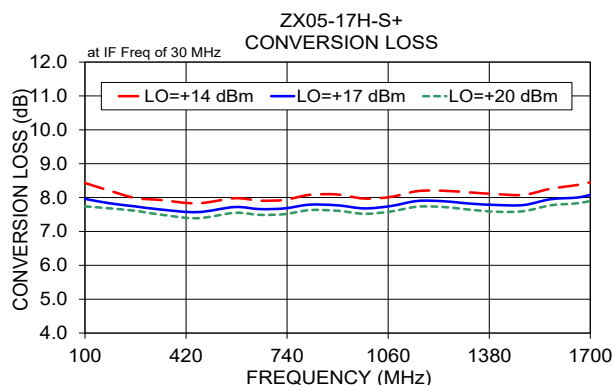
### Electrical Schematic



### Notes

- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.  
 B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.  
 C. The parts covered by this specification document 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)





## Notes

- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- The parts covered by this specification document 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)

