*Coaxial*

# Frequency Mixer

## ZFM-11+

Level 7 (LO Power +7 dBm) 1 to 2000 MHz

*SMA version shown*

CASE STYLE: K18

| Connectors | Model |
|---|---|
| **BNC** | ZFM-11+ |
| **SMA** | ZFM-11-S+ |
| **BRACKET (OPTION "B")** | |

***+RoHS Compliant***

*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 | 50mW |
| IF Current | 40mA |

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

### Coaxial Connections

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

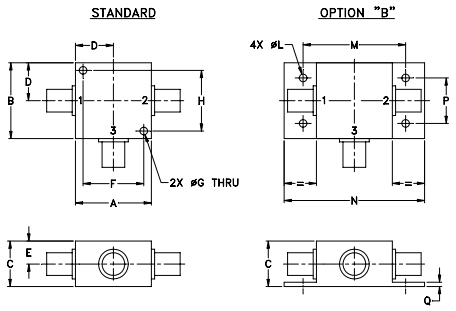
### Features

- low conversion loss, 7.03 dB typ.
- good L-R isolation, 35 dB typ, L-I, 27 dB typ.
- wideband, 1 to 2000 MHz
- rugged shielded case

### Applications

- VHF/UHF
- cellular
- GPS
- satellite distribution
- 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 m | | | Total Range | L | | M | | U | | L | | M | | U | |
| $f_L$-$f_U$ | | $\overline{X}$ | σ | Max. | Max. | Typ. | Min. | Typ. | Min. | Typ. | Min. | Typ. | Min. | Typ. | Min. | Typ. | Min. |
| 1-2000 | 5-600 | 7.03 | .017 | 8.5 | 9.0 | 50 | 45 | 35 | 25 | 25 | 20 | 45 | 40 | 27 | 20 | 25 | 20 |

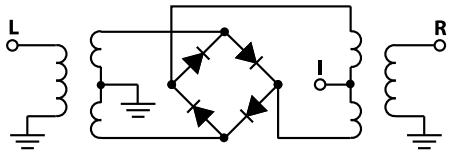
1 dB COMP.: +1 dBm typ.

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 [2$f_L$ 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 +7dBm | LO +7dBm | LO +7dBm | LO +7dBm | LO +7dBm |
| 1.00 | 31.00 | 6.05 | 60.95 | 56.30 | 2.34 | 2.51 |
| 5.00 | 35.00 | 5.78 | 61.86 | 55.70 | 2.49 | 2.42 |
| 20.00 | 50.00 | 5.81 | 61.93 | 55.12 | 2.44 | 2.46 |
| 50.00 | 80.00 | 5.94 | 60.22 | 54.24 | 2.54 | 2.19 |
| 100.00 | 70.00 | 5.92 | 56.59 | 50.92 | 2.88 | 2.23 |
| 200.00 | 170.00 | 6.50 | 48.94 | 44.33 | 3.21 | 2.18 |
| 267.53 | 237.53 | 6.52 | 45.81 | 41.60 | 3.60 | 1.98 |
| 400.80 | 370.80 | 6.74 | 42.38 | 38.67 | 3.74 | 1.88 |
| 500.00 | 470.00 | 6.83 | 41.61 | 36.88 | 3.84 | 1.82 |
| 600.70 | 570.70 | 7.03 | 40.10 | 36.28 | 3.52 | 1.69 |
| 733.96 | 704.29 | 7.24 | 39.39 | 34.20 | 3.24 | 1.51 |
| 867.23 | 837.52 | 7.09 | 39.07 | 31.66 | 3.00 | 1.37 |
| 1000.00 | 969.69 | 7.12 | 36.76 | 29.17 | 2.77 | 1.24 |
| 1067.10 | 1037.50 | 6.97 | 35.43 | 28.56 | 2.54 | 1.14 |
| 1200.40 | 1170.40 | 6.77 | 33.71 | 27.07 | 2.23 | 1.13 |
| 1333.70 | 1303.60 | 6.72 | 32.82 | 25.51 | 2.13 | 1.39 |
| 1466.90 | 1436.90 | 6.80 | 33.13 | 24.22 | 2.16 | 1.67 |
| 1600.20 | 1570.50 | 6.93 | 32.34 | 23.42 | 2.27 | 2.36 |
| 1733.50 | 1703.70 | 6.92 | 29.41 | 27.19 | 2.54 | 2.01 |
| 2000.00 | 1970.30 | 6.99 | 30.47 | 25.17 | 2.89 | 1.93 |

### Electrical Schematic




Notes

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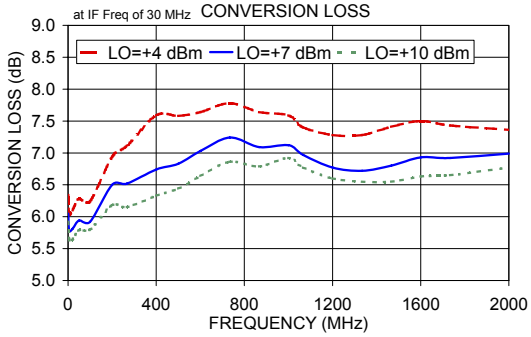
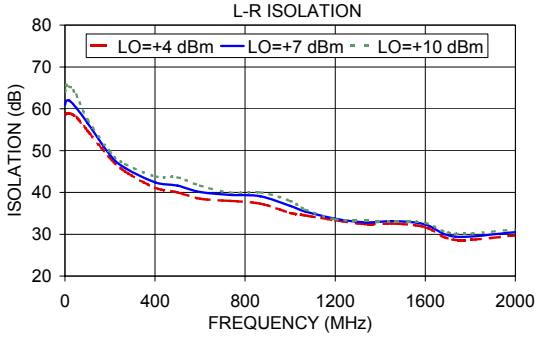
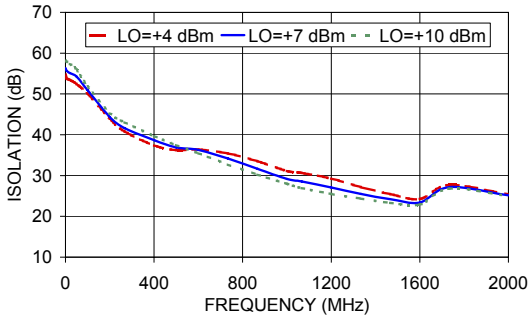
ZFM-11
at IF Freq of 30 MHz CONVERSION LOSS



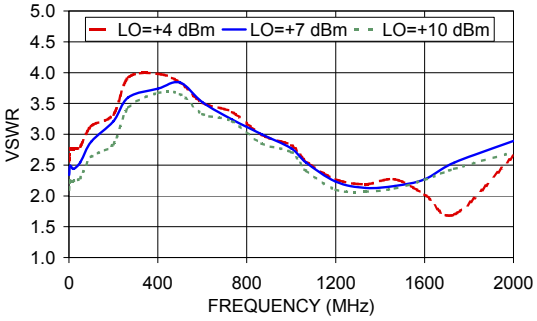

ZFM-11
L-R ISOLATION



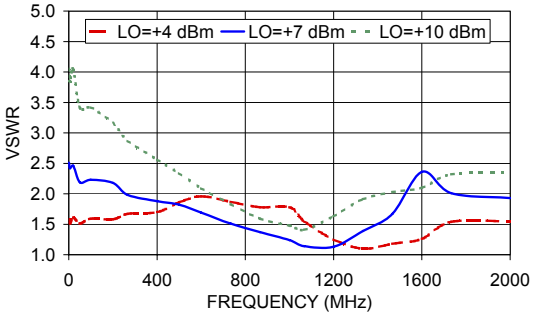

ZFM-11
L-I ISOLATION



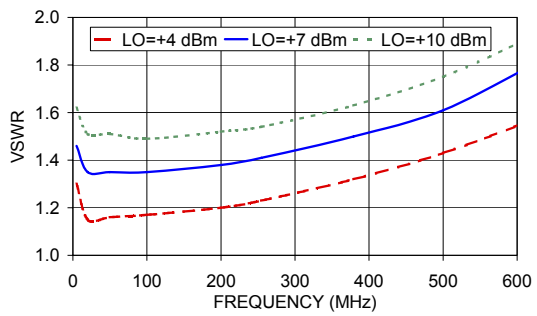

ZFM-11
RF VSWR




ZFM-11
LO VSWR




ZFM-11
IF VSWR

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