*Coaxial*

# Frequency Mixer

## Level 7 (LO Power +7 dBm) 1 to 1000 MHz

# ZFM-2+
# ZFM-2



*SMA version shown*

CASE STYLE: K18

| Connectors | Model |
|---|---|
| **BNC** | ZFM-2(+) |
| **SMA** | ZFM-2-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 |

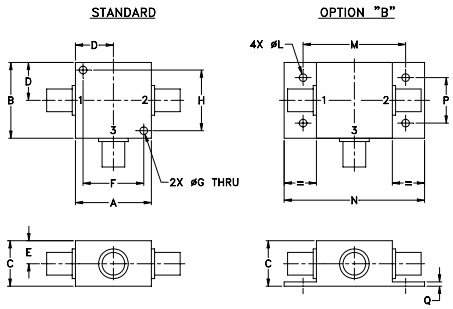
### Features

- low conversion loss, 5.72 dB typ.
- good L-R isolation, 40 dB typ, L-I, 35 dB typ.
- wideband, 1 to 1000
- rugged shielded case

### Applications

- VHF/UHF
- cellular
- 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. |
| 1-1000 | DC-1000 | 5.72 | 0.06 | 7.5 | 8.5 | 50 | 45 | 40 | 25 | 30 | 25 | 45 | 40 | 35 | 25 | 25 | 20 |

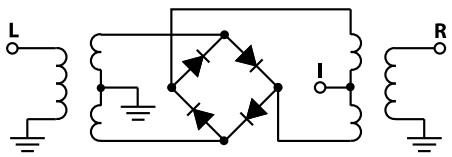
1 dB COMP.: +1 dBm typ.

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 | 7.23 | >67.00 | >67.00 | 1.30 | 2.70 |
| 2.00 | 32.00 | 6.50 | >67.00 | >67.00 | 1.15 | 2.63 |
| 5.00 | 35.00 | 5.80 | >67.00 | >67.00 | 1.07 | 2.77 |
| 10.00 | 40.00 | 5.62 | >67.00 | >67.00 | 1.06 | 2.55 |
| 20.00 | 50.00 | 5.68 | >67.00 | >67.00 | 1.07 | 2.41 |
| 50.00 | 80.00 | 5.58 | 61.94 | 63.74 | 1.09 | 2.37 |
| 100.00 | 70.00 | 5.53 | 54.33 | 54.76 | 1.11 | 2.29 |
| 167.34 | 137.34 | 5.57 | 48.65 | 47.61 | 1.16 | 2.20 |
| 233.87 | 203.87 | 5.72 | 45.10 | 43.03 | 1.18 | 2.16 |
| 300.40 | 270.40 | 5.45 | 42.56 | 40.00 | 1.20 | 2.13 |
| 366.94 | 336.94 | 5.73 | 40.45 | 37.57 | 1.22 | 2.06 |
| 466.74 | 436.74 | 5.82 | 38.33 | 34.32 | 1.23 | 2.13 |
| 500.00 | 470.00 | 5.72 | 38.80 | 34.10 | 1.26 | 2.09 |
| 599.81 | 569.81 | 6.02 | 37.43 | 32.81 | 1.29 | 2.09 |
| 666.34 | 636.34 | 6.11 | 37.94 | 31.57 | 1.34 | 2.04 |
| 799.41 | 769.41 | 6.27 | 36.06 | 29.67 | 1.40 | 2.13 |
| 832.68 | 802.68 | 6.46 | 35.22 | 28.79 | 1.47 | 2.19 |
| 899.21 | 869.21 | 7.00 | 33.77 | 26.14 | 1.55 | 2.24 |
| 932.48 | 902.48 | 7.37 | 33.17 | 25.03 | 1.66 | 2.28 |
| 1000.00 | 969.00 | 7.63 | 32.49 | 23.59 | 1.72 | 2.30 |

### Electrical Schematic




**Notes**

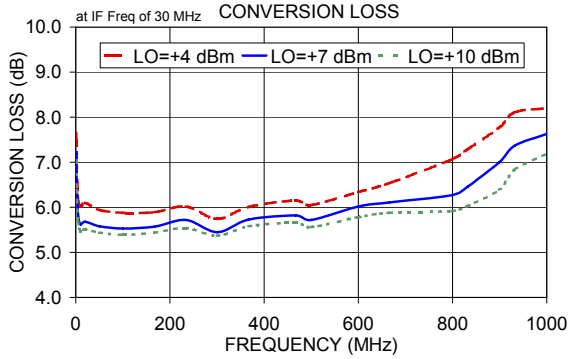
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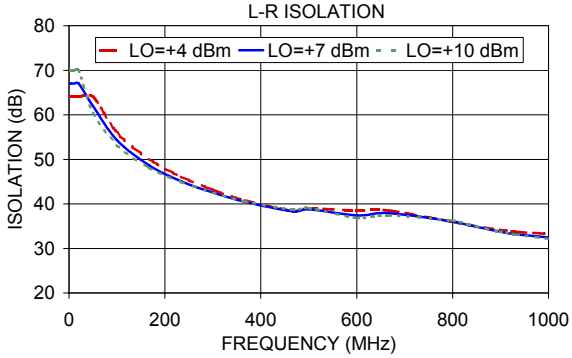

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# Performance Charts

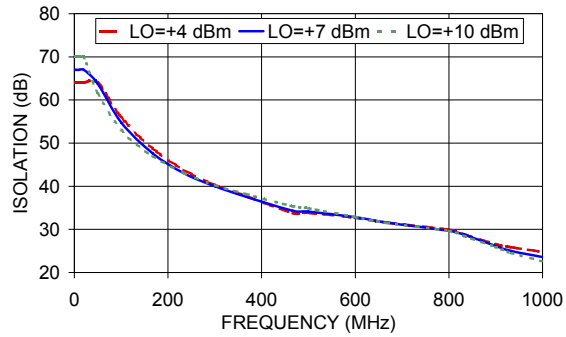
ZFM-2
CONVERSION LOSS
at IF Freq of 30 MHz



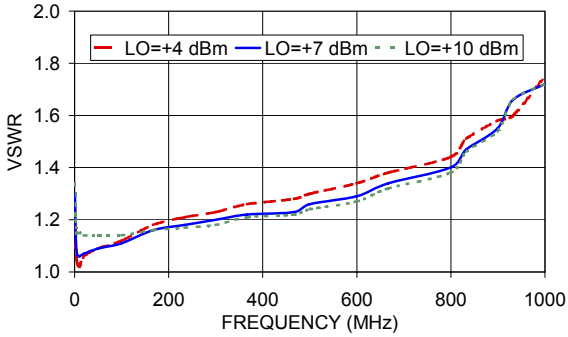

ZFM-2
L-R ISOLATION



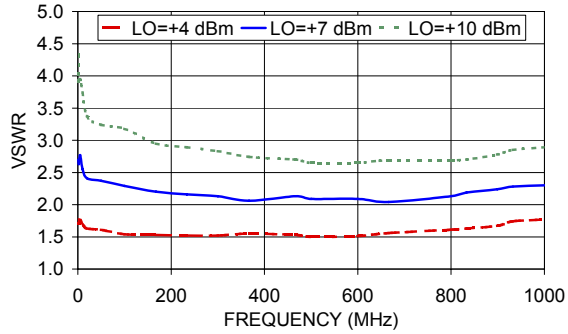

ZFM-2
L-I ISOLATION



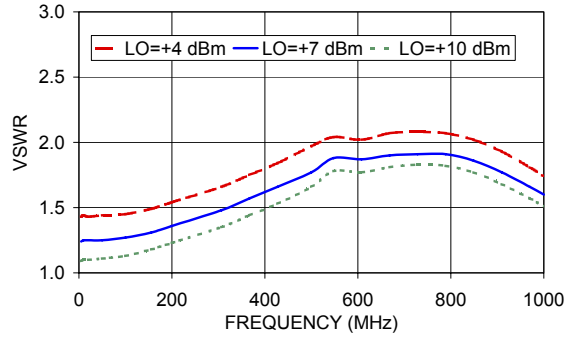

ZFM-2
RF VSWR




ZFM-2
LO VSWR




ZFM-2
IF VSWR




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