

FEATURES

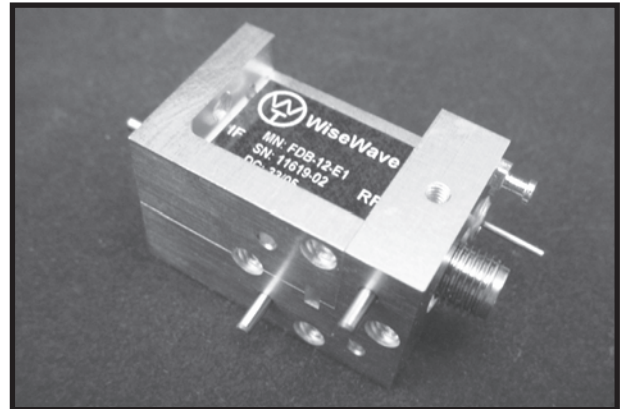
- ❖ Low conversion loss
- ❖ Low LO drive power
- ❖ Single external bias
- ❖ Full waveguide band operation
- ❖ Compact and rugged package

APPLICATIONS

- ❖ Test equipment
- ❖ Communication systems
- ❖ EW systems

DESCRIPTION

It is always a concern at high millimeterwave band that there is not enough power to drive the mixer, especially full waveguide band. Model **FDB-XX-E1** series externally biased, balanced mixers is especially developed for this purpose. The mixers are offered in 4 waveguide bands to cover frequency spectra from 50 to 140 GHz. These mixers employ high performance GaAs Schottky beamlead diodes and balanced configuration to produce superior performance with a very low LO pumping level. The mixers are designed for full RF waveguide band operation with extremely wide IF bandwidth. Better performance can be obtained by operating the mixers in narrower bandwidth. These mixers are ideal candidates for test equipment, communication systems and EW receivers where frequency down conversion is required.

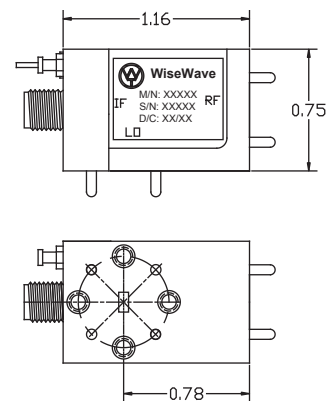


FDB-XX-E1 Series

SPECIFICATIONS

| Waveguide Band | V | E | W | F |
|-------------------------------|-----------|-----------|-----------|-----------|
| Waveguide Size | WR-15 | WR-12 | WR-10 | WR-8 |
| Model Number | FDB-15-E1 | FDB-12-E1 | FDB-10-E1 | FDB-08-E1 |
| RF & LO Frequency Range (GHz) | 50 to 75 | 60 to 90 | 75 to 110 | 90 to 140 |
| IF Frequency Range (GHz) | DC-18 | DC-18 | DC-18 | DC-18 |
| LO Pumping Level (dBm) | 0 to 3 | 0 to 3 | 0 to 3 | 0 to 3 |
| Conversion Loss (dB, Typ) | 11.0 | 12.0 | 13.0 | 15.0 |
| LO/RF Isolation (dB, Typ) | 20 | 20 | 20 | 20 |
| External Bias (V/mA, Typ) | +5.0/1.0 | +5.0/1.0 | +5.0/1.0 | +5.0/1.0 |
| RF & LO Flange | UG385/U | UG387/U | UG387/U-M | UG387/U-M |
| IF Connector | SMA(F) | SMA(F) | SMA(F) | SMA(F) |
| DC Connector | Pin | Pin | Pin | Pin |

Outline Drawing



Note: Consult factory for the frequencies and performance other than listed.

WT-F-1

| BAND | W | H |
|------|------|------|
| Ka | 0.75 | 1.25 |
| K | 0.88 | 1.33 |

Dimensions are in inches

WT-F-2

| BAND | Q & U | V,E & W |
|------|-------|---------|
| H | 0.72 | 0.65 |

Dimensions are in inches

WT-F-3

| BAND | W | L | LW |
|---------|------|------|------|
| K | 0.88 | 1.25 | 0.81 |
| Ka | 0.75 | 1.00 | 0.63 |
| Q & U | 1.13 | 1.50 | 0.94 |
| V,E & W | 0.75 | 1.16 | 0.78 |

Dimensions are in inches

WT-F-4

| BAND | Q & U | V,E & W |
|------|-------|---------|
| H | 1.25 | 0.88 |
| W | 1.40 | 1.25 |

Dimensions are in inches

WT-F-5

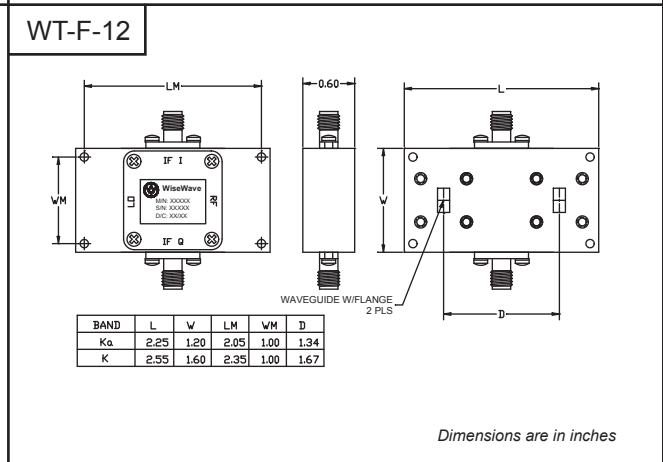
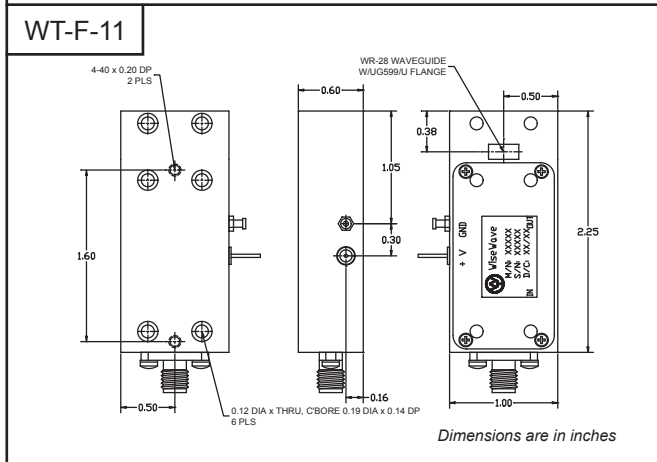
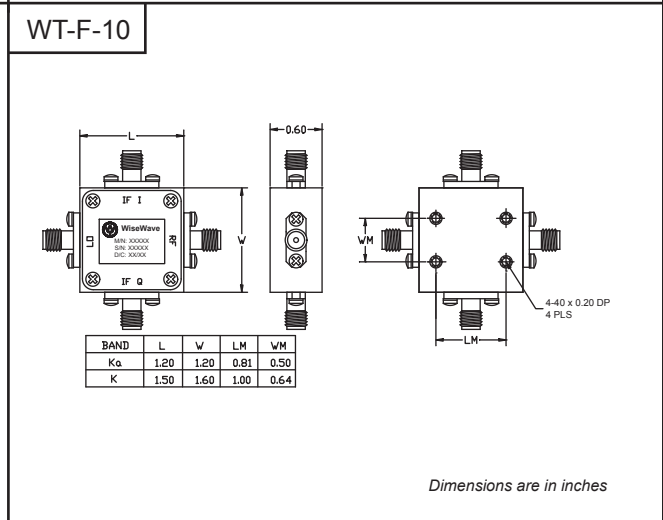
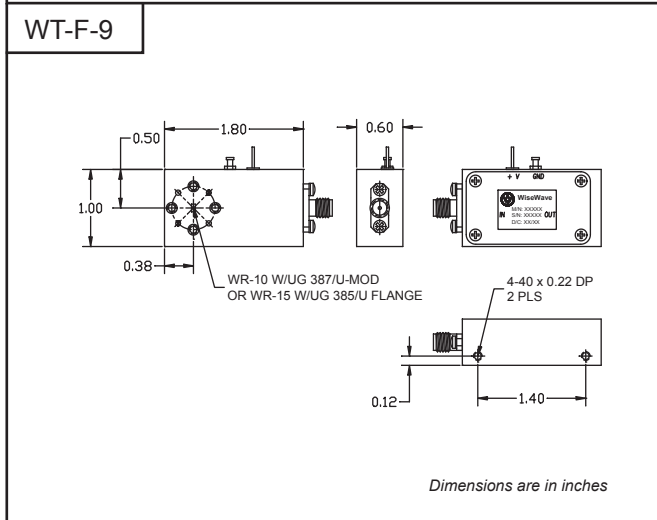
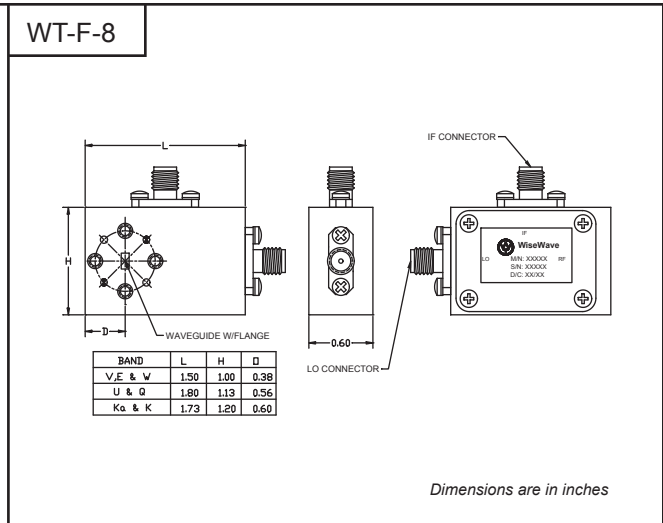
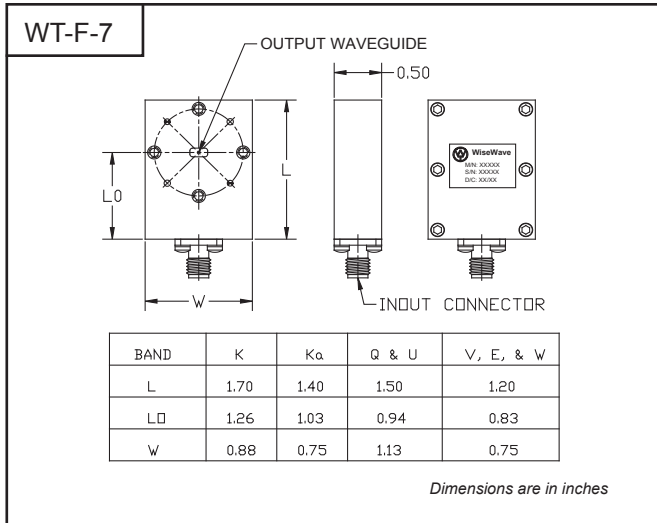
| BAND | L | H |
|---------|------|------|
| V,E & W | 1.50 | 1.00 |
| Ka & K | 1.73 | 1.20 |

Dimensions are in inches

WT-F-6

Dimensions are in inches

The flange pattern shown is for illustration purpose. Refer to Technical Reference Section for flange pattern details. The outline drawings shown are standard versions. Contact factory for your specific package requirements.



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