# **Harmonic Mixers**

#### **Bulletin No. FDH**

#### **FEATURES**

- Low conversion loss
- High Sensitivity
- Full waveguide band operation
- Compact and rugged package

#### **APPLICATIONS**

- Spectrum analyzer
- Frequency counter
- Phase lock loop

## DESCRIPTION

**FDH Series** 

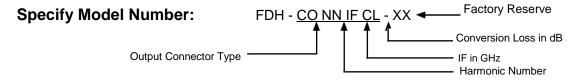
**FDH** series harmonic mixers are offered in seven waveguide bands to cover frequency spectra from 18 to 110 GHz. These mixers employ high performance GaAs Schottky beamlead diode to produce superior performance with a moderate LO pumping level. The mixers are designed for full RF waveguide band operation with wide IF bandwidth. The LO and IF frequency range for standard models are 2 to 15 GHz and DC to 4 GHz, respectively. These harmonic mixers are designed for use with spectrum analyzers and frequency counters with built-in frequency diplexer. When used with external diplexer, these mixers can be used to phase lock the high frequency sources. The standard model equipped with SMA(F) connector for LO/IF port connection.

## **SPECIFICATIONS**

Waveguide Band	к	Ka	Q	U	v	E	w
RF Waveguide Size	WR-42	WR-28	WR-22	WR-19	WR-15	WR-12	WR-10
RF Frequency Range (GHz)	18 to 26.5	26.5 to 40	33 to 50	40 to 60	50 to 75	60 to 90	75 to 110
LO Frequency Range (GHz)	2 to 4 GHz, 4 to 8 GHz and 8 to 15 GHz						
IF Frequency Range (GHz)	DC to 1 GHz, DC to 2.5 GHz and DC to 4.0 GHz						
LO Pumping Level (dBm)	15	15	15	15	15	15	15
Conversion Loss (dB, Typ)*	20	22	24	26	28	30	32
Maximum Input Signal Level	+ 20 dBm						
Temperature Range	0 to +50°C						

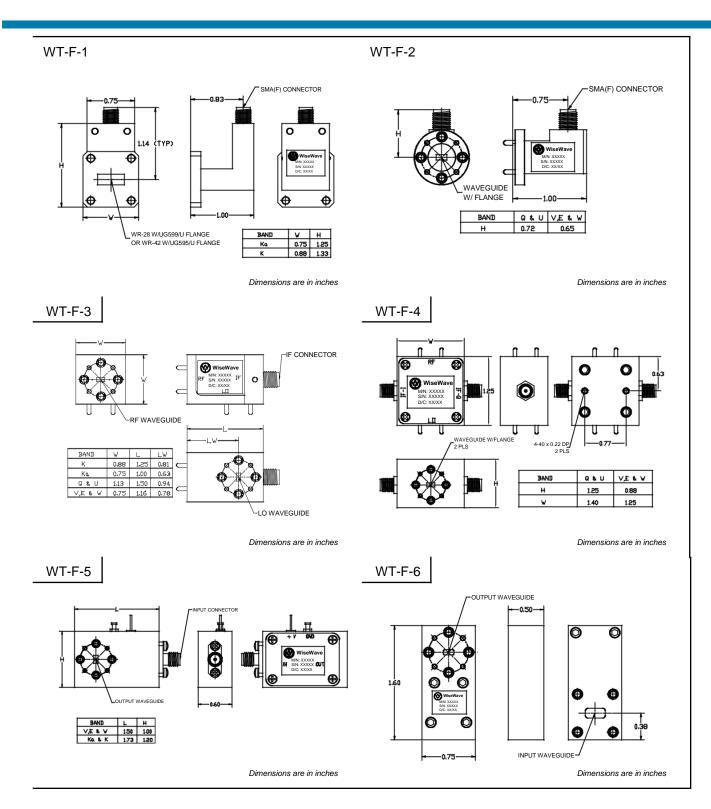
\* The conversion loss is a typical value with harmonic mixing number 8 or lower.

## HOW TO ORDER

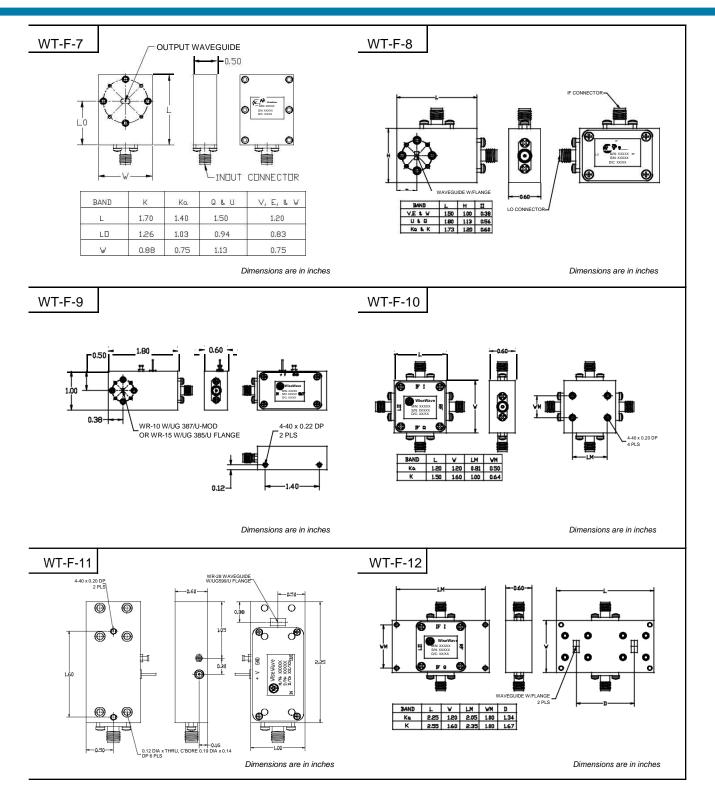


Example: To order a 6th harmonic mixer with 1 GHz 1F Bandwidth and 20 dB Conversion Loss and WR-22 waveguide RF port and SMA(F) LO/IF port, specify FDH-22060120-XX.

# Frequency Converter Outline Drawings #1



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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