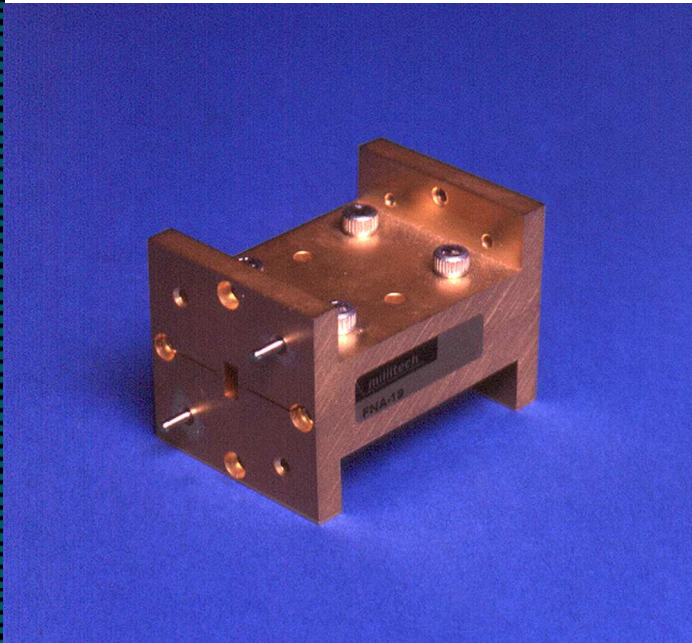


SERIES FNP

NARROW BANDPASS FILTERS



FEATURES:

- Low insertion loss
- High selectivity
- Custom designed to meet specific requirements

APPLICATIONS:

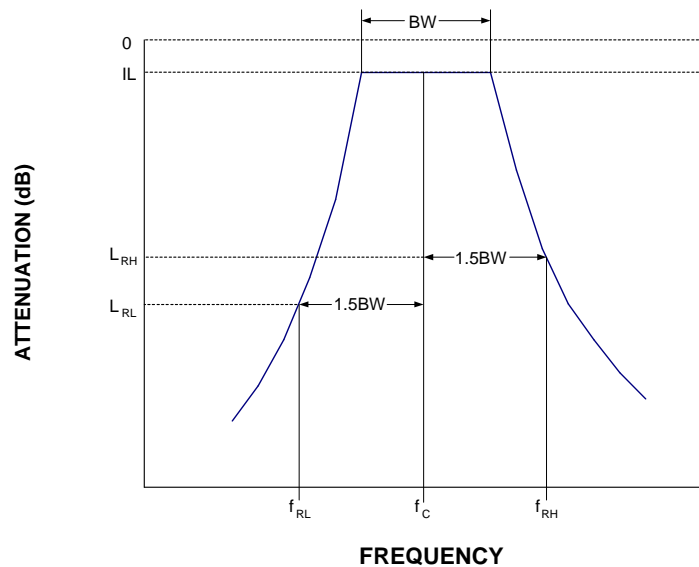
- Pre-selector filter
- Spurious mode suppression
- Instrumentation

DESCRIPTION

Millitech series FNP narrow bandpass filters are available with passbands in the range of 2% to 4% and operating at a center frequency ranging from 18 to 110 GHz. These filters offer low insertion loss in the passband, a high degree of skirt selectivity and are tailored to suit specific filtering requirements. They are constructed using rugged waveguide channel housings and etched or machined circuit filter elements. Because no tuning elements are necessary, these filters are amenable to highly reliable reproduction. FNP filters are ideal for transmitter, receiver, communication, radar, upconverter, and low-cost, large production applications.

Stopband rejection and skirt selectivity requirements determine the total number of sections needed for any particular bandpass filter which, in turn, sets filter insertion loss. Specific sideband rejection, harmonic reduction, and elimination of undesired frequency regions can typically be accomplished with minimal insertion loss.

For applications which require less than a 2% or greater than a 4% passband with low loss and extremely sharp rejection skirts or for multiplexed filtering solutions, Millitech offers the series FIB iris bandpass filter. Also offered are series FWP wide bandpass filters, series FLP low pass filters, and series FHP high pass filters.

Figure1 - General Characteristics of Narrow Bandpass Filters.


Legend	
BW	= bandwidth
F_C	= center frequency
F_{RL}	= ($f_C - 1.5 BW$); low side rejection frequency
F_{RH}	= ($f_C + 1.5 BW$); high side rejection frequency
L_{RL}	= rejection at f_{RL}
L_{RH}	= rejection at f_{RH}

ELECTRICAL SPECIFICATIONS

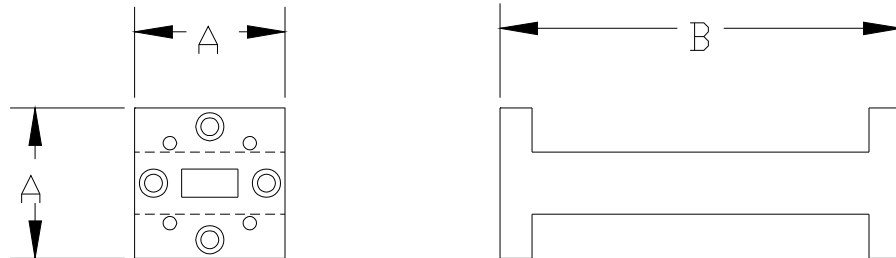
Model Number		FNP-42	FNP-28	FNP-22	FNP-19	FNP-15	FNP-12	FNP-10	FNP-08
Insertion Loss (dB) (max) ^{*1}	2%	1.8	1.8	1.8	1.8	2.0	2.0	2.2	CF
	4%	1.6	1.6	1.6	1.6	1.6	1.8	2.0	CF
Low side rejection level (dB) at F_{RL} (min) ^{*2}		40	40	40	40	40	40	40	CF
High side rejection level (dB) at F_{RH} (min) ^{*2}		30	30	30	30	30	30	30	CF
Passband VSWR (typ)		1.5:1	1.5:1	1.5:1	1.5:1	1.5:1	1.5:1	1.5:1	CF

*1 – Data is based upon a 5-section filter. Upper limit is ~6% bandwidth and 8 sections.

*2 – Standard rejection frequencies (F_{RL} and F_{RH}) are calculated at center frequency \pm (1.5 x bandwidth in GHz).

NOTE: Other bandwidth percentages are available upon request. See series FIB for other bandwidth requirements and options, or contact Millitech for more information.

OUTLINE DRAWINGS*



*The outlines shown may not reflect the latest information. Please contact Millitech for current outline drawings.

MECHANICAL SPECIFICATIONS

Model Number	FNP-42	FNP-28	FNP-22	FNP-19	FNP-15	FNP-12	FNP-10	FNP-08
A (in/mm)	0.88/22.4	0.75/19.1	1.13/28.7	1.13/28.7	0.75/19.1	0.75/19.1	0.75/19.1	0.75/19.1
B (in/mm)	*1	*1	*1	*1	*1	*1	*1	*1
Flange MIL-F-3922	/54-001*2	/54-003*2	/67B-006	/67B-007	/67B-008	/67B-009	/67B-010	/67B-M08

*1 - Dimensions vary depending upon filter requirements. Please contact Millitech for more information.

*2 - With #4-40 threaded holes.

HOW TO ORDER

Specify Model Number* ¹ FNP-XX-AABØC
XX = Waveguide Band WR – number
AA = Bandwidth* ² Example: 03 - 3% bandwidth
B = Flange Type R – round (WR-28 through WR-08 only) S – square (WR-42 through WR-22 only)
C = Other Options N – nonstandard (specify requirements) Ø – standard rejection levels

*1 – Please specify center frequency when ordering.

*2 – Bandwidth expressed as a percentage of center frequency - 12% maximum.