

FIBER BRAGG GRATING

IXC-FBG-PS-1550-1-ATH-PM-FA

Ultra-Narrow Band-Pass Filter

This filter type is based on a specific process using a phase-shifted (PS) technique. This phase-shifted is introduced to the refractive index modulation, leading to a narrow transmission peak within the stopband. The linewidth of such filters is optimized and tailored by changing the grating profile during the FBG-writing process.

Other parameters as rejection bandwidth or insertion loss, are controlled, which makes the component a good candidate to improve the filtering efficiency or the sensing sensitivity.



Thermally packaged, this filter is very stable against temperature variations.

Additionally, the band-pass wavelength can be easily and finely adjusted by rotating a tiny screw on the package.

Benefits & Features

- Ultra-narrow band-pass filter down to 1 GHz FWHM
- Tailored transmission
- Filtering over the full C or L band
- Low insertion loss
- High temperature stability within a 1 pm/°C
- ± 100 pm fine tuning with our specific athermal package

Applications

- Microwave photonics
- Quantum communication
- Space communication
- Lidar
- Lines filtering for lasers and sensors
- RF filtering
- Linewidth reduction
- Frequency discriminator

IXC-FBG-PS-1550-1-ATH-PM-FA

Ultra-Narrow Bandwidth Band-Pass Filter

TECHNICAL SPECIFICATIONS

Parameters

Band-pass center wavelength CW (nm) ¹	1550
Band-pass bandwidth (FWHM) (GHz) ²	1 ± 0.5
Rejection bandwidth ΔV_{-3dB} (GHz)	> 125
Insertion loss IL (dB) ²	< 1
Out-of-band attenuation ΔT at ± 10 GHz (dB) ³	> 25
Tuning range (pm)	± 100
Tuning resolution (GHz)	1
CW thermal drift [- 5 ; 70]°C (pm)	< 150
Packaging (mm)	55 x 5 x 5
Input power (max.) (mW) ⁴⁻⁵	300
Pigtail length (m)	1
Optical connectors	FC/APC (0.9 mm buffered fiber)

Comments:

¹ Referenced to vacuum at ± 0.05 nm, slow axis (PM fiber)

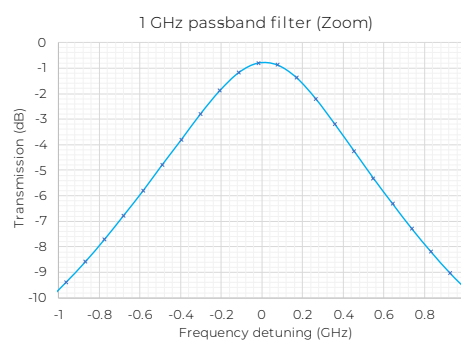
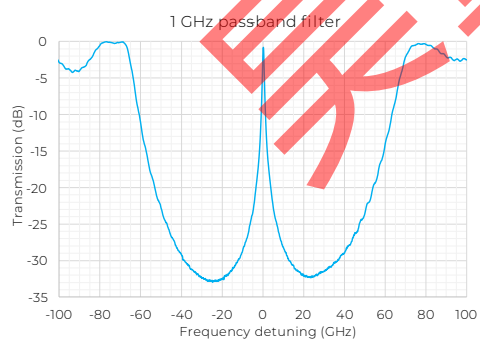
² By design

³ Typical > 20 dB, best effort > 25 dB

⁴ Maximum input power: damage power threshold

⁵ Recommended input power for stable filter operation is below 2 mW

Typical spectrum (measured in transmission)



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