Terahertz Bandpass Filter

Product Description

The Terahertz Bandpass Filter is a high-performance device specifically designed for the terahertz frequency range, capable of effectively addressing the filtering challenges in this band. The product adopts a specially designed perforated metal film structure, achieving precise filtering performance in the terahertz region. Featuring a narrow bandwidth, high transmission, and excellent out-of-band suppression, the filter also offers significant advantages such as a large optical aperture, compact structure, and lightweight design. It provides reliable technical support for terahertz imaging, spectroscopy, and communication systems. The filter

consists of a series of specially designed metal films with perforations, whose structural dimensions are determined by the required frequency point. Customization is available to meet specific application requirements, with selectable center frequencies covering a range from 0.3 THz to 7 THz. These metal films are mounted on metal rings inside a cylindrical metal housing. The housing is made of aluminum alloy with a black anodized finish. To prevent contamination and physical damage, white or transparent polymer membranes are applied to both sides, ensuring a sufficiently large effective optical aperture while enhancing device signal-to-noise ratio. Two types of effective optical apertures are available: Round: standard clear aperture/outer diameter Φ54 mm / Φ64 mm Square: standard clear aperture 60 mm × 60 mm / outer diameter Φ100 mm (All dimensions can be customized.) Additionally, the product supports customization of the optical aperture to meet demanding requirements for special optical paths or higher energy throughput. A clear product label is attached to the housing surface, indicating key information such as product model and center frequency.

- ## Product features

Narrow bandwidth; High transmittance; High out of band inhibition; Large aperture; compact structure

- ## Part Number

MP-IP-WTF-THZ-64

- ## Application area

Terahertz imaging | Spectral analysis | Communication systems

- ## Core parameters

Center Frequency
0.3 THz ~ 7 THz

- ## General Parameters

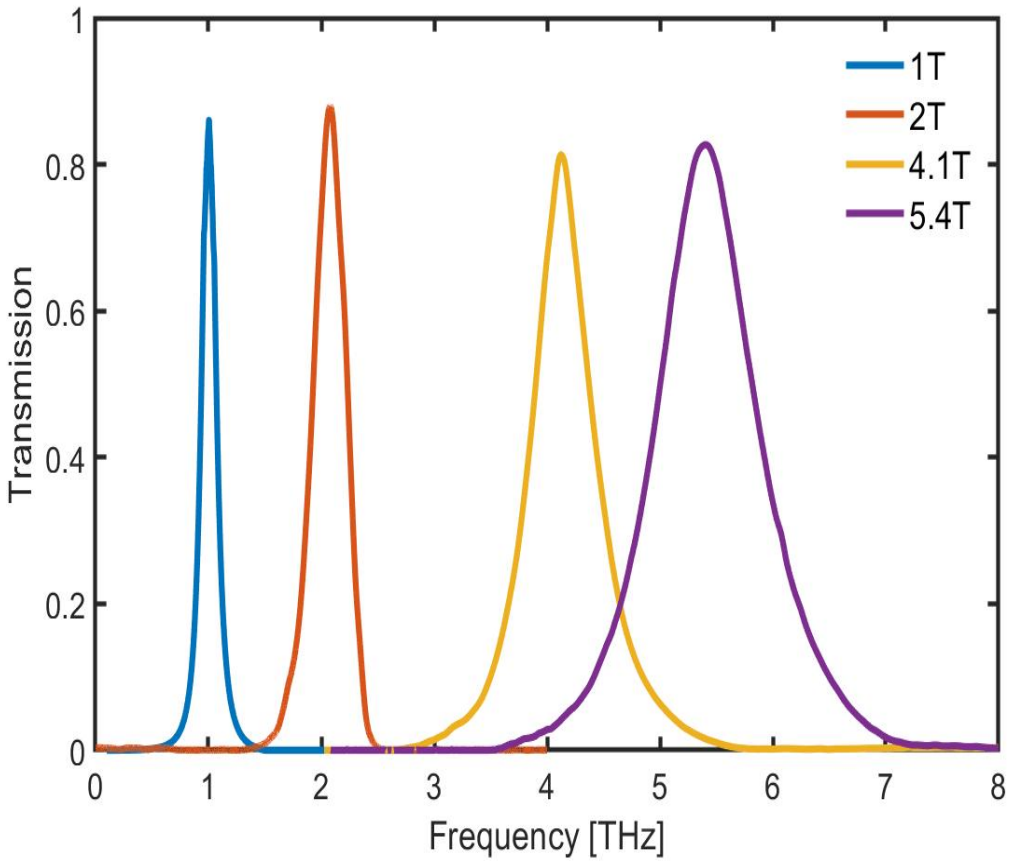
Technical Specifications and Test Data

l Center Frequency (Max): 0.3 THz ~ 7 THz

l Peak Transmittance: > 80%

l Relative Bandwidth (Max): BW10 ~ BW20

l Out-of-band Rejection: < 5E-4



Measured Spectral Transmittance of the Terahertz Bandpass Filter

Maximum Customizable Round Clear Aperture: Φ64 mm

Maximum Customizable Square Clear Aperture: 64 mm × 64 mm

Center Frequency Customization: selectable from 0.3 THz to 7 THz.

We generally keep stock for the following frequency points:

1 THz, 2 THz, 2.6 THz, 4.1 THz, 5.4 THz, 6.2 THz. Other specifications can be customized upon request.

Storage Conditions

Temperature: 15°C ~ 25°C

Humidity: ⩽ 50% RH