

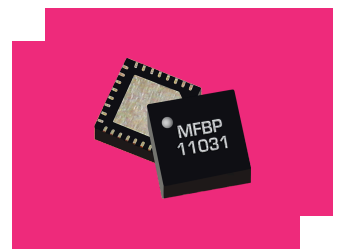
## MFBP-00173PSM

### Passive GaAs MMIC 16.8 - 18.2 GHz Bandpass Filter

## DEVICE OVERVIEW

### General Description

The MFBP-00173PSM passive MMIC surface mount bandpass filter is an ideal solution for small form factor, high rejection filtering. The MFBP-00173PSM features a 16.8-18.2 GHz 1 dBc passband and 3.3 dB center frequency insertion loss. Passive GaAs MMIC technology allows production of smaller filter constructions that replace larger form factor circuit board constructions. Tight fabrication tolerances allow for less unit-to-unit variation than traditional filter technologies. The MFBP-00173PSM is available as a 5 mm plastic QFN. Low unit to unit variation allows for accurate simulations using the provided S2P file taken from measured production units.



[Download s-parameters here](#)

### Features

- Return Loss, 22 dB Typical
- Insertion Loss @ Fc, 3.3 dB Typical
- High Stop Band Suppression
- Wide Stop Band with Fast Roll-Off

### Applications

N/A

### Functional Block Diagram



### Part Ordering Options

| Part Number     | Description                                                         | Package | Green Status | Product Lifecycle | Export Classification |
|-----------------|---------------------------------------------------------------------|---------|--------------|-------------------|-----------------------|
| MFBP-00173PSM   | Passive GaAs MMIC 16.8 - 18.2 GHz Bandpass Filter                   | PSM     | RoHS REACH   | Released          | EAR99                 |
| EVB-MFBP-00173P | Evaluation Board, Passive GaAs 16.8 - 18.2 GHz MMIC Bandpass Filter | EVB     | RoHS REACH   | Released          | EAR99                 |

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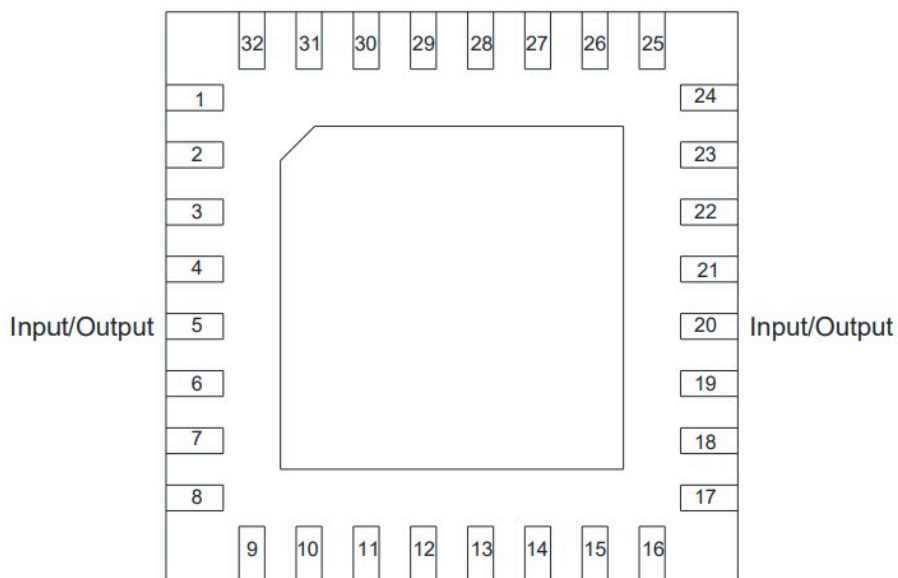
|                                           |                                  |
|-------------------------------------------|----------------------------------|
| ■ <b>Device Overview</b>                  | ■ <b>Specifications</b>          |
| General Description                       | Absolute Maximum Ratings         |
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### Revision History

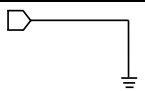
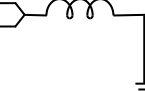
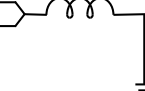
| Revision Code | Revision Date | Comment         |
|---------------|---------------|-----------------|
| -             | 2025-11-18    | Initial Release |

### Port Configuration and Functions

#### Port Diagram



#### Port Functions

| Port          | Function     | Description                                                                                         | DC Equivalent Circuit                                                                 |
|---------------|--------------|-----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Ground Paddle | Ground       | PSM package ground path is provided through the ground paddle and should be connected to RF ground. |  |
| Pin 20        | Input/Output | Pin 20 is DC short to ground for the PSM package.                                                   |  |
| Pin 5         | Input/Output | Pin 5 is DC short to ground for the PSM package.                                                    |  |

### Specifications

#### Absolute Maximum Ratings

The Absolute Maximum Ratings indicate limits beyond which damage may occur to the device. If these limits are exceeded, the device may be inoperable or have a reduced lifetime.

| Parameter                     | Maximum Rating | Unit |
|-------------------------------|----------------|------|
| Maximum Operating Temperature | 100            | °C   |
| Maximum Storage Temperature   | 125            | °C   |
| Minimum Operating Temperature | -55            | °C   |
| Minimum Storage Temperature   | -65            | °C   |
| Port 1 DC Current             | 120            | mA   |
| Port 2 DC Current             | 120            | mA   |

#### Package Information

| Parameter                  | Details            | Rating       |
|----------------------------|--------------------|--------------|
| ESD                        | 250 to < 500 Volts | HBM Class 1A |
| Dimensions                 | -                  | 5 x 5 mm     |
| Moisture Sensitivity Level | -                  | MSL 1        |

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#### Electrical Specifications

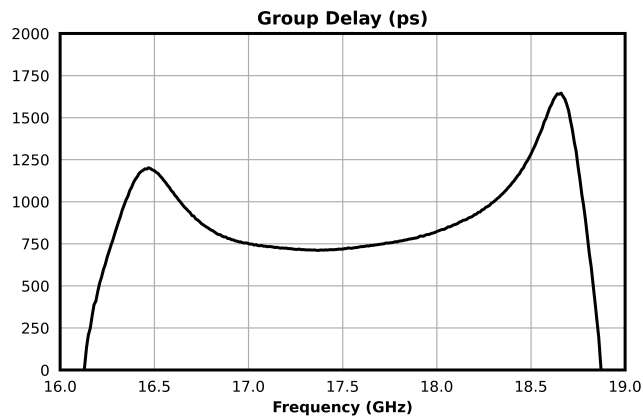
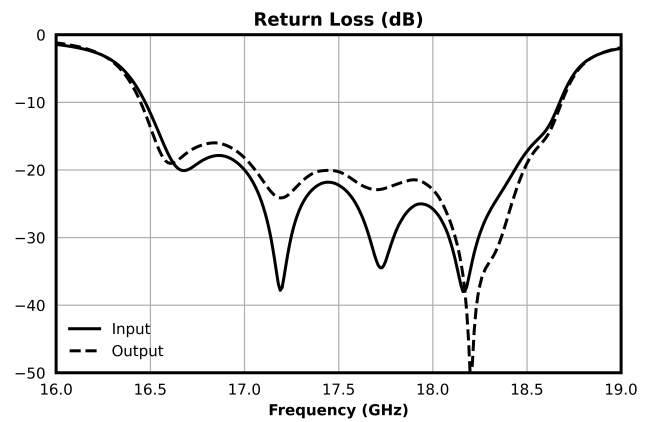
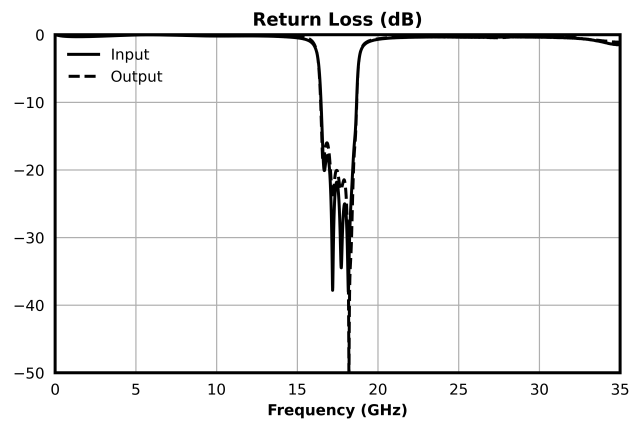
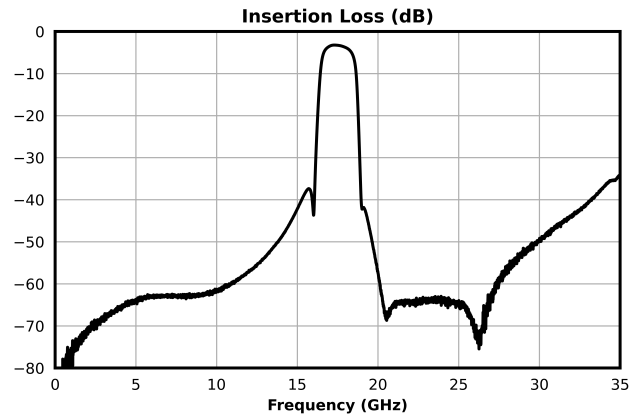
The electrical specifications apply at TA=+25°C in a 50Ω system. Typical data shown is for the filter in a PSM package with a sine wave input applied to Pin 5. Min and Max limits are guaranteed at TA=+25°C.

| Parameter              | Test Conditions              | Minimum Frequency (GHz) | Maximum Frequency (GHz) | Min | Typ   | Max | Unit |
|------------------------|------------------------------|-------------------------|-------------------------|-----|-------|-----|------|
| 1 dBc Passband         | Configuration A, Temp = 25°C | 16.77                   | 18.18                   | -   | -     | -   | GHz  |
| 3 dBc Passband         | Configuration A, Temp = 25°C | 16.56                   | 18.49                   | -   | -     | -   | GHz  |
| 30 dBc Rejection Point | Configuration A, Temp = 25°C | 16.12                   | 18.89                   | -   | -     | -   | GHz  |
| Center Freq            | Configuration A, Temp = 25°C | -                       | -                       | -   | 17.46 | -   | GHz  |
| Insertion Loss @ fc    | Configuration A, Temp = 25°C | -                       | -                       | -   | 3.3   | -   | dB   |
| Passband Return Loss   | Configuration A, Temp = 25°C | -                       | -                       | -   | 22    | -   | dB   |
| Group Delay            | Configuration A, Temp = 25°C | -                       | -                       | -   | 749   | -   | ps   |

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### Passive GaAs MMIC 16.8 - 18.2 GHz Bandpass Filter

#### Typical Performance Plot



All measurements are de-embedded from the fixture with Automatic Fixture Removal (AFR).

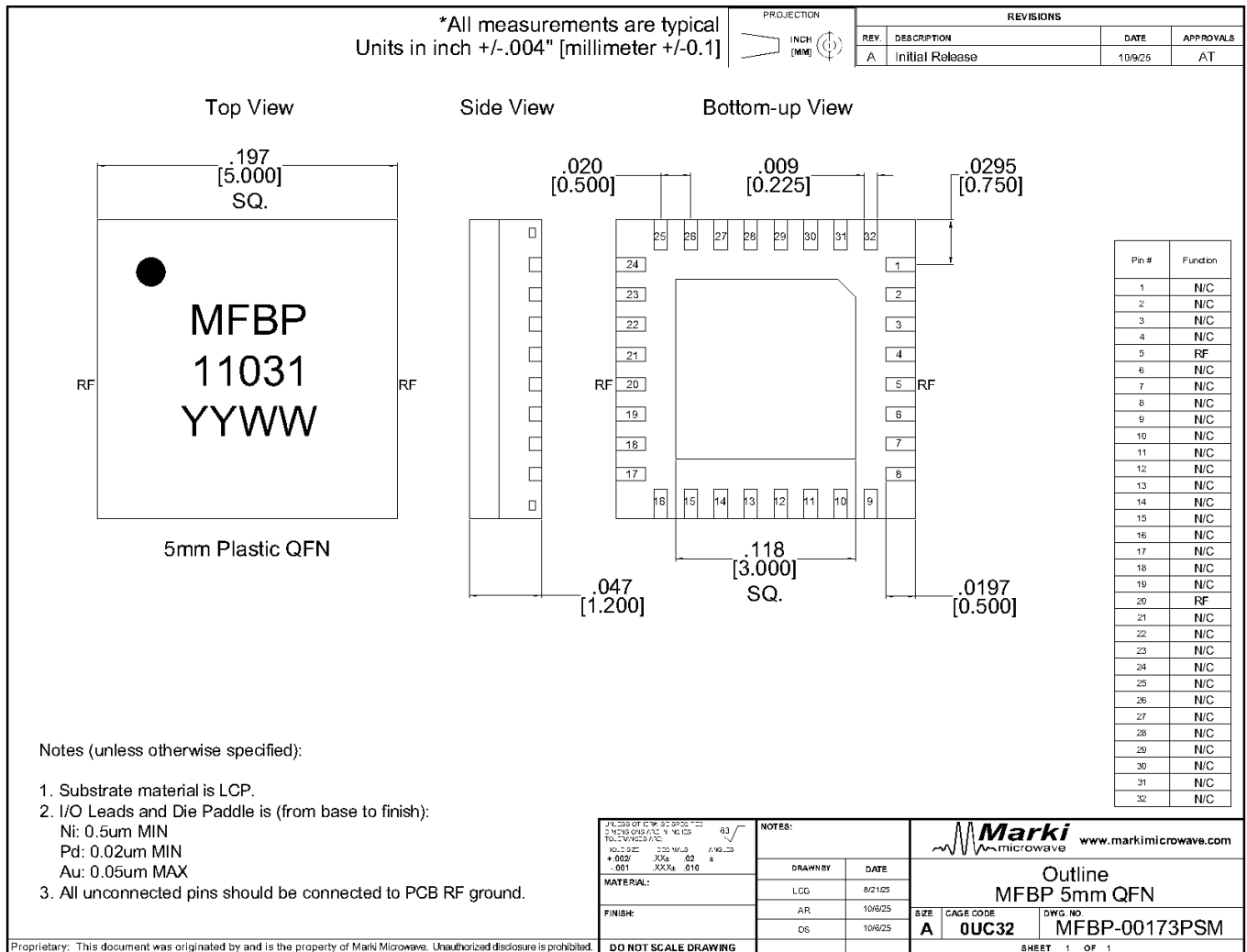
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### Mechanical Data

### Outline Drawing

Download : [Outline 2D Drawing](#)

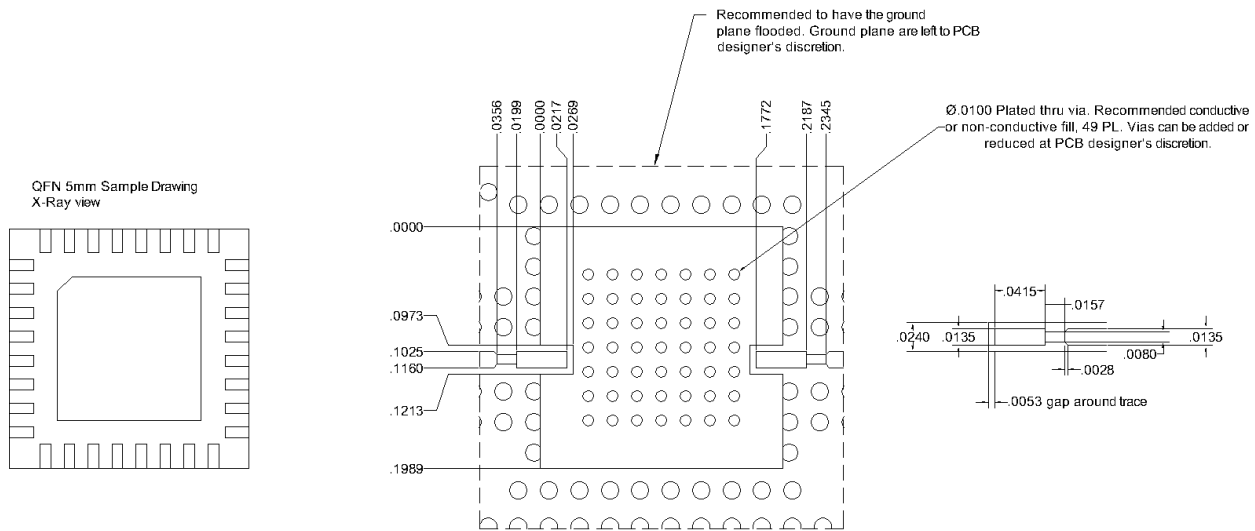


## MFBP-00173PSM

### Passive GaAs MMIC 16.8 - 18.2 GHz Bandpass Filter

#### Footprint Image

Download : [Footprint Drawing](#)



Material Rogers 4003 .008"  $\frac{1}{2}$  Oz Cu both sides.





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