

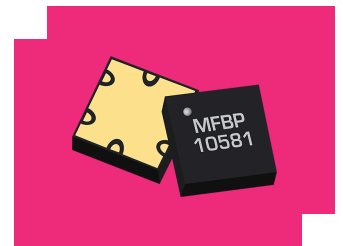
# MFBP-00070CSP3

## Passive GaAs MMIC 17.7 - 25.5 GHz Bandpass Filter

### DEVICE OVERVIEW

#### General Description

The MFBP-00070CSP3 passive MMIC surface mount bandpass filter is an ideal solution for small form factor, high rejection filtering. The MFBP-00070CSP3 features a 17.7-25.5GHz 1dBc passband and 1.7dB 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-00070CSP3 is available in our 3.5 x 3.5mm CSP3 chip scale package. Low unit to unit variation allows for accurate simulations using the provided S2P file taken from measured production units.



[Download s-parameters here](#)

#### Features

- 20 dB Return Loss
- 1.7 dB Insertion Loss @ Fc
- High Stop Band Suppression
- Wide Stop Band with Fast Roll-Off
- This product embodies Marki Microwave's U.S. Pat. 11,869,858.

#### Applications

N/A

#### Functional Block Diagram



#### Part Ordering Options

| Part Number           | Description                                                         | Package | Green Status | Product Lifecycle | Export Classification |
|-----------------------|---------------------------------------------------------------------|---------|--------------|-------------------|-----------------------|
| MFBP-00070CSP3        | Passive GaAs MMIC 17.7 - 25.5 GHz Bandpass Filter                   | CSP3    | RoHS REACH   | Released          | EAR99                 |
| <u>EVB-MFBP-00070</u> | Evaluation Board, Passive GaAs 17.7 - 25.5 GHz MMIC Bandpass Filter | EVB     | RoHS REACH   | Released          | EAR99                 |

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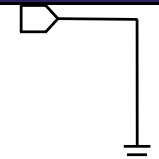
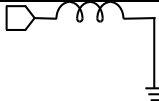
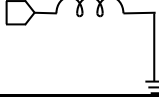
|                                           |                                  |
|-------------------------------------------|----------------------------------|
| ■ <b>Device Overview</b>                  | ■ <b>Specifications</b>          |
| General Description                       | Absolute Maximum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

| Revision Code | Revision Date | Comment         |
|---------------|---------------|-----------------|
| -             | 2025-05-29    | Initial Release |

Port Configuration and Functions

Port Functions

| Port          | Function     | Description                                                                                          | Equivalent Circuit for Package                                                      |
|---------------|--------------|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Ground Paddle | Ground       | CSP3 package ground path is provided through the ground paddle and should be connected to RF ground. |  |
| Pin 1         | Input/Output | Pin 1 is DC short to ground for the CSP3 package.                                                    |  |
| Pin 4         | Input/Output | Pin 4 is DC short to ground for the CSP3 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   |

### Package Information

| Parameter                  | Details     | Rating         |
|----------------------------|-------------|----------------|
| ESD                        | < 250 Volts | HBM Class 0    |
| Dimensions                 | -           | 3.50 x 3.50 mm |
| Moisture Sensitivity Level | -           | MSL 1          |

## MFBP-00070CSP3

### Passive GaAs MMIC 17.7 - 25.5 GHz Bandpass Filter

#### Electrical Specifications

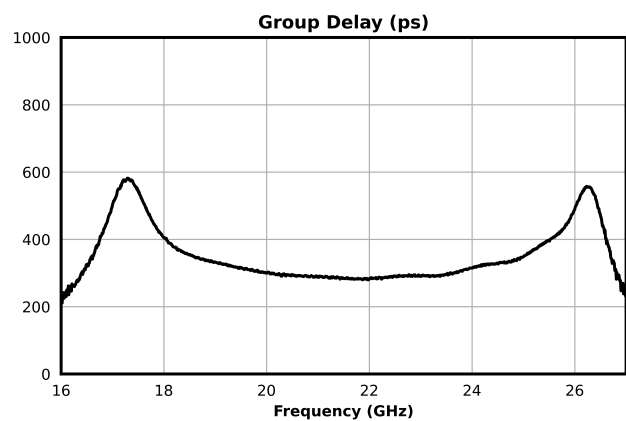
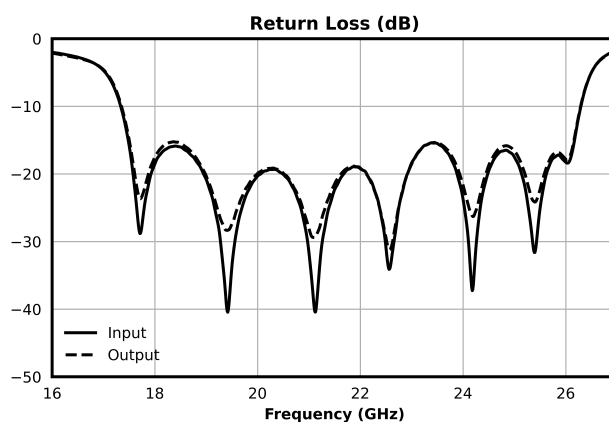
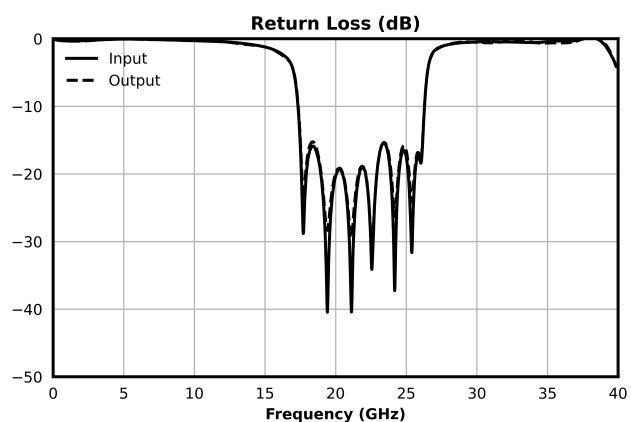
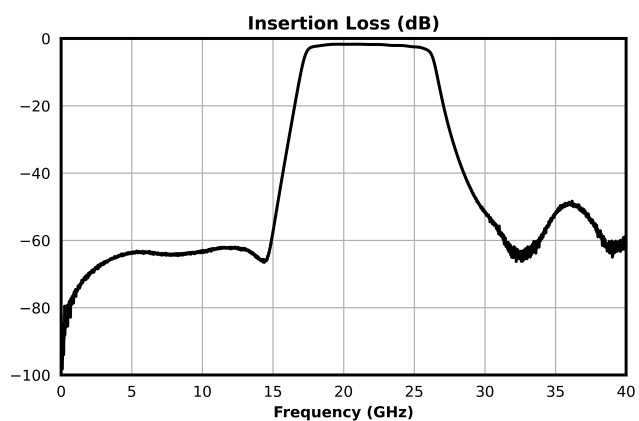
The electrical specifications apply at TA=+25°C in a 50Ω system. Typical data shown is for the filter in a CSP3 package with a sine wave input applied to Pin 1. Min and Max limits are guaranteed at TA=+25°C.

| Parameter              | Test Conditions              | Minimum Frequency (GHz) | Maximum Frequency (GHz) | Min | Typ   | Max | Unit |
|------------------------|------------------------------|-------------------------|-------------------------|-----|-------|-----|------|
| 1 dBc Passband         | Configuration A, Temp = 25°C | 17.67                   | 25.46                   | -   | -     | -   | GHz  |
| 30 dBc Rejection Point | Configuration A, Temp = 25°C | 16.05                   | 27.81                   | -   | -     | -   | GHz  |
| 3 dBc Passband         | Configuration A, Temp = 25°C | 17.31                   | 26.21                   | -   | -     | -   | GHz  |
| Center Freq            | Configuration A, Temp = 25°C | -                       | -                       | -   | 21.21 | -   | GHz  |
| Group Delay            | Configuration A, Temp = 25°C | -                       | -                       | -   | 304   | -   | ps   |
| Impedance              | Configuration A, Temp = 25°C | -                       | -                       | -   | 50    | -   | Ω    |
| Insertion Loss @ fc    | Configuration A, Temp = 25°C | -                       | -                       | -   | 1.7   | -   | dB   |
| Passband Return Loss   | Configuration A, Temp = 25°C | -                       | -                       | -   | 20    | -   | dB   |

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Passive GaAs MMIC 17.7 - 25.5 GHz Bandpass Filter

### Typical Performance Plot



Measured data is de-embedded from fixture using automatic fixture removal (AFR).

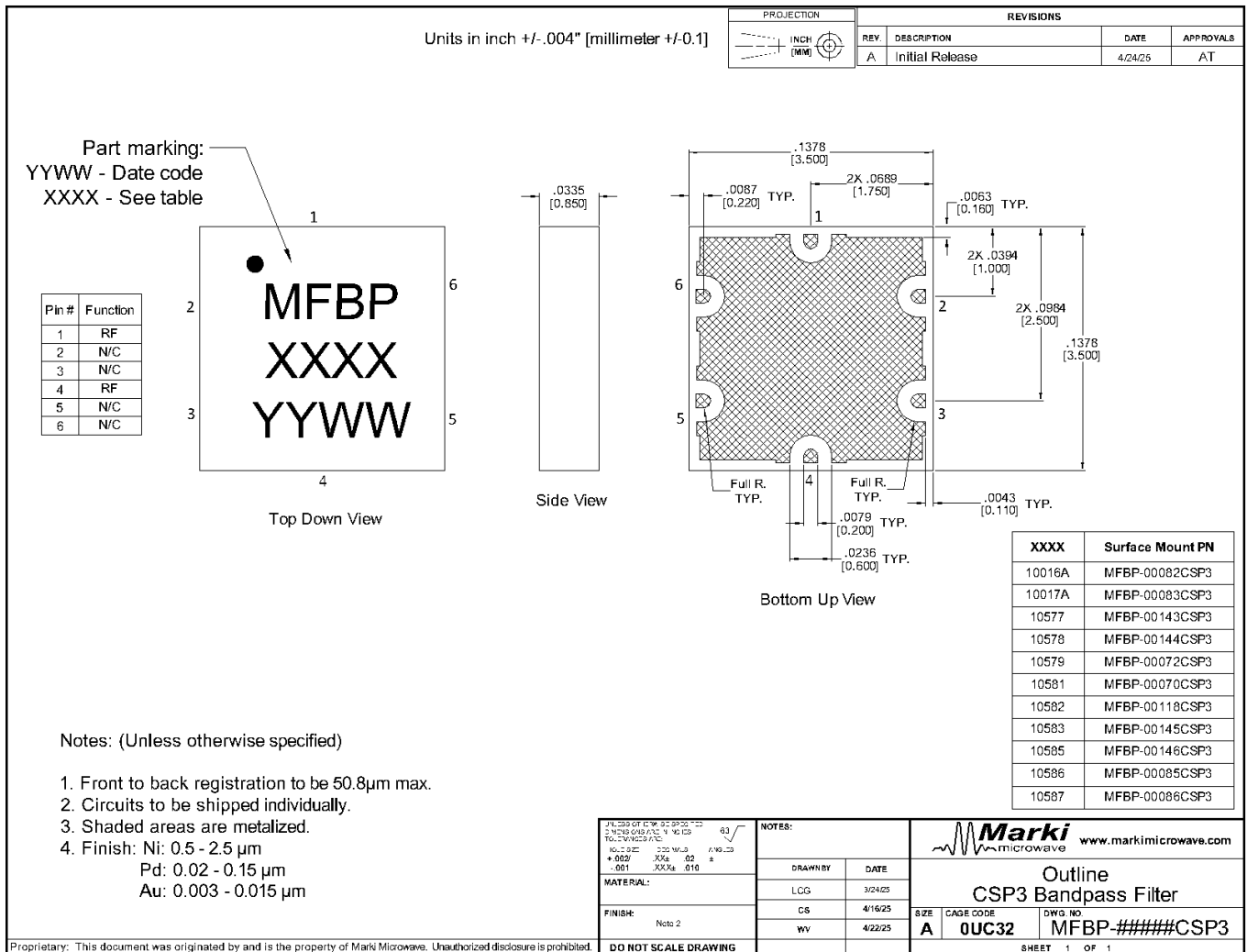
## MFBP-00070CSP3

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### Mechanical Data

### Outline Drawing

Download : [Outline 2D Drawing](#) | [Outline 3D Drawing](#) | [Outline 3D STP](#)

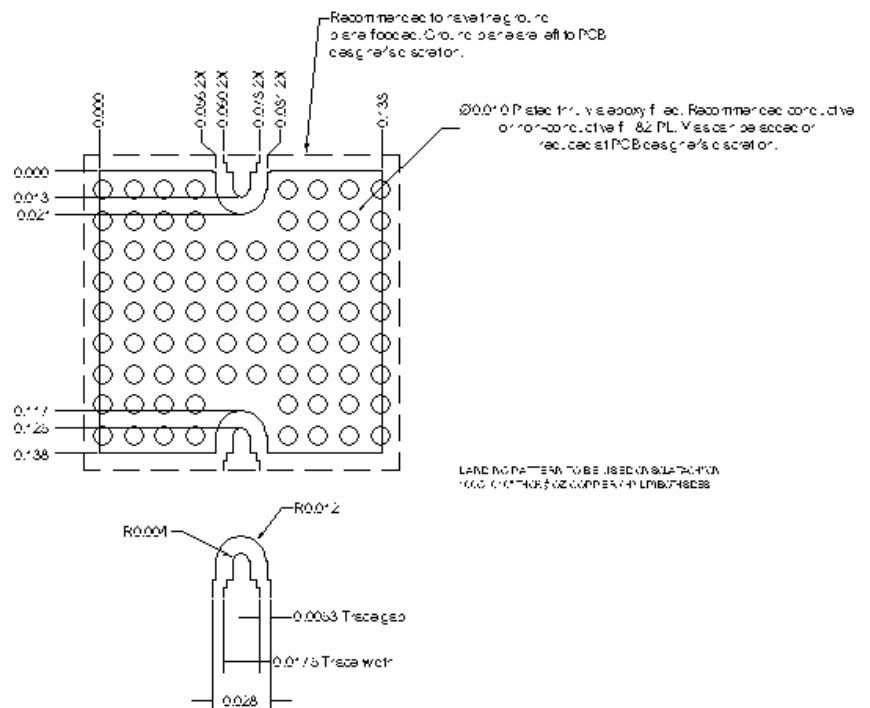
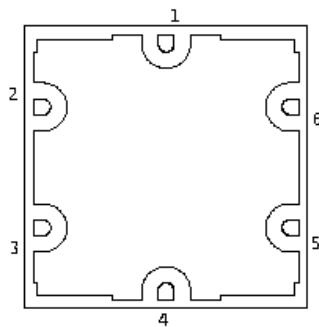


## Passive GaAs MMIC 17.7 - 25.5 GHz Bandpass Filter

## Footprint Image

Download : Footprint Drawing

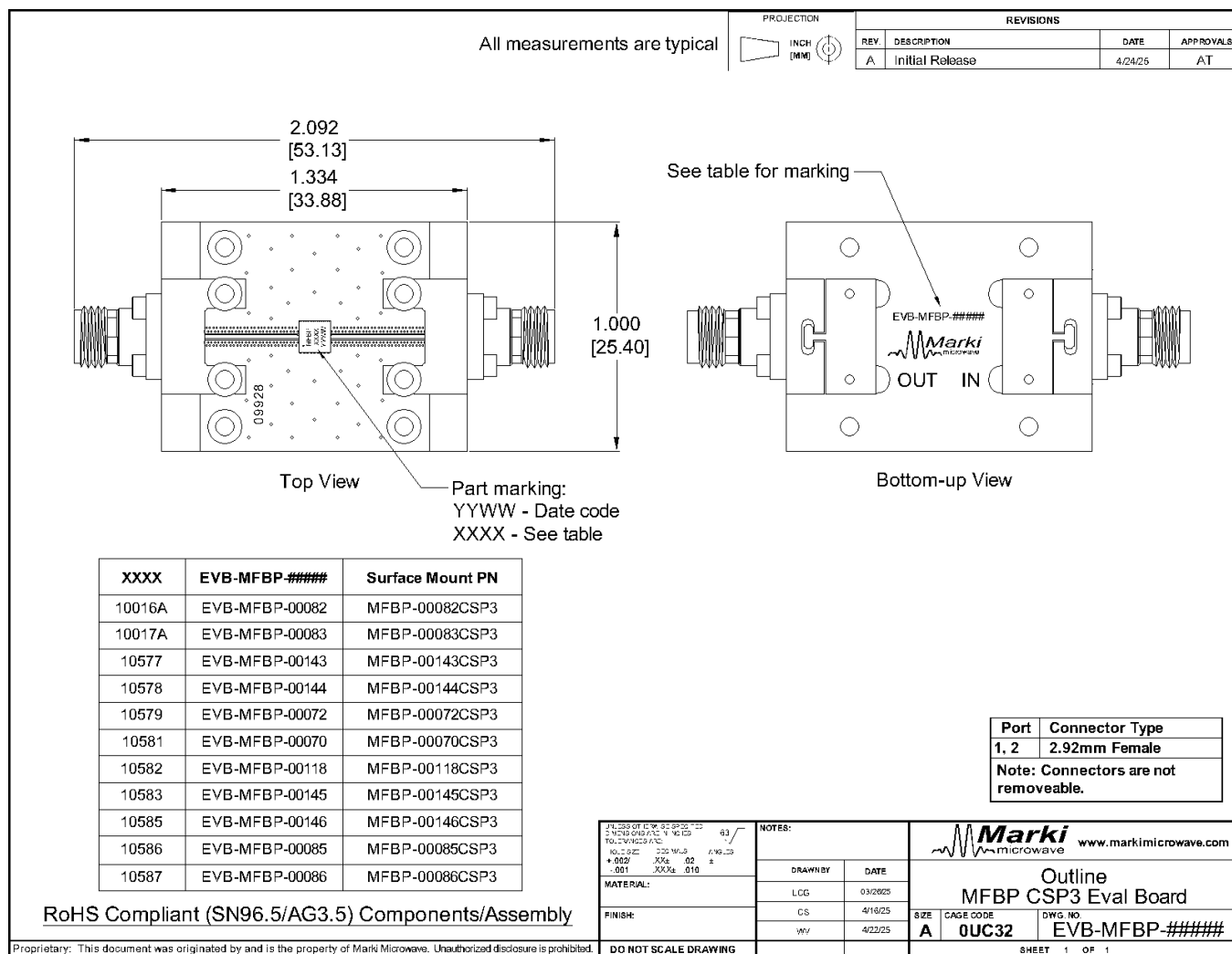
X-RAY VIEW/CSP PACKAGE



## MFBP-00070CSP3

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### Evaluation Board - Outline Drawing



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