

# MFBP-00127CSP3

## Passive GaAs MMIC 17.8 - 20.2 GHz Bandpass Filter

### DEVICE OVERVIEW

#### General Description

The MFBP-00127CSP3 passive MMIC surface mount bandpass filter is an ideal solution for small form factor, high rejection filtering. 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-00127CSP3 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. For a lower loss option, please see MFBP-00061CSP3, or for wider bandwidth, MFBP-00126CSP3.



[Download s-parameters here](#)

#### Features

- Excellent Return Loss
- 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-00127CSP3	Passive GaAs MMIC 17.8 - 20.2 GHz Bandpass Filter	CSP3	RoHS REACH	Released	EAR99
<u>EVB-MFBP-00127</u>	Evaluation Board, Passive GaAs 17.8-20.2 GHz MMIC Bandpass Filter	EVB	RoHS REACH	Released	EAR99

## MFBP-00127CSP3

### Passive GaAs MMIC 17.8 - 20.2 GHz Bandpass Filter

#### Table Of Contents

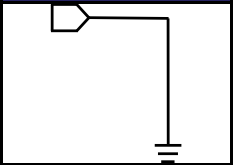
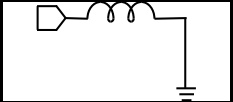
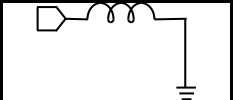
- **Device Overview**
  - General Description
  - Features
  - Applications
  - Functional Block Diagram
- **Port Configuration and Functions**
  - Port Functions
- **Revision History**
- **Specifications**
  - Absolute Maximum Ratings
  - Package Information
  - Electrical Specifications
  - Typical Performance Plot
- **Mechanical Data**
  - Outline Drawing
- **Footprint Image**
- **Evaluation Board**
  - Evaluation Board Outline Drawing

#### Revision History

Revision Code	Revision Date	Comment
-	2025-05-28	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
Dimensions	-	3.50 x 3.50 mm
Moisture Sensitivity Level	-	MSL 1

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### Passive GaAs MMIC 17.8 - 20.2 GHz Bandpass Filter

#### Electrical Specifications

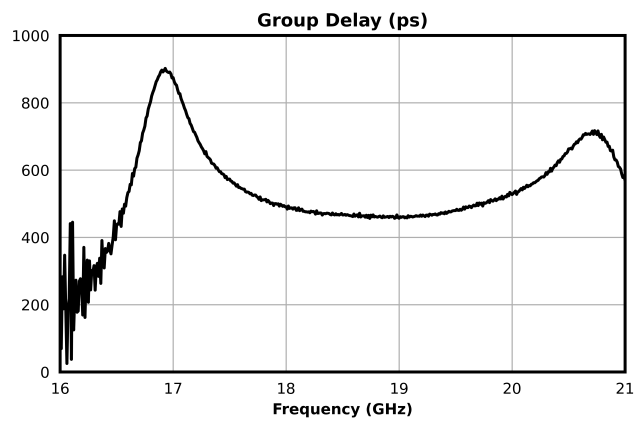
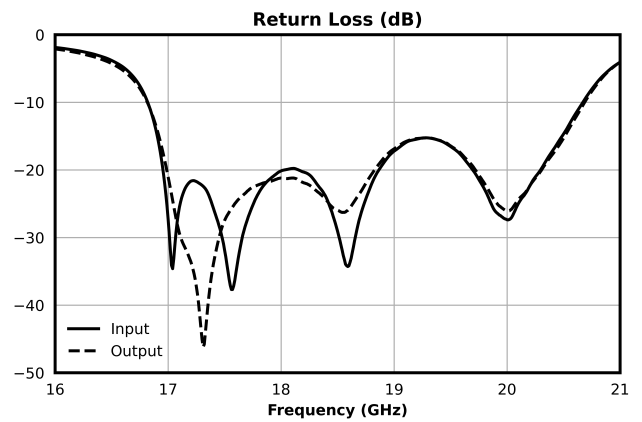
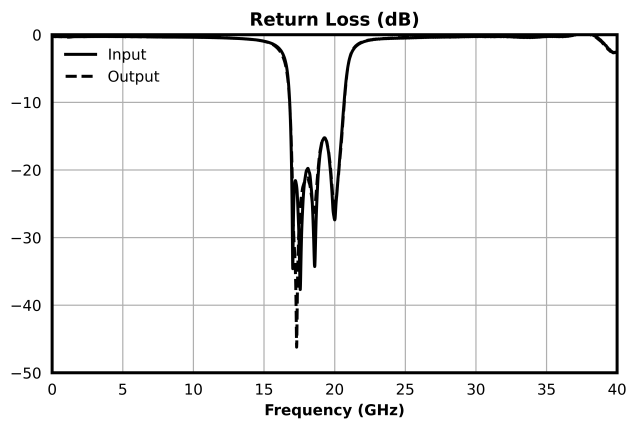
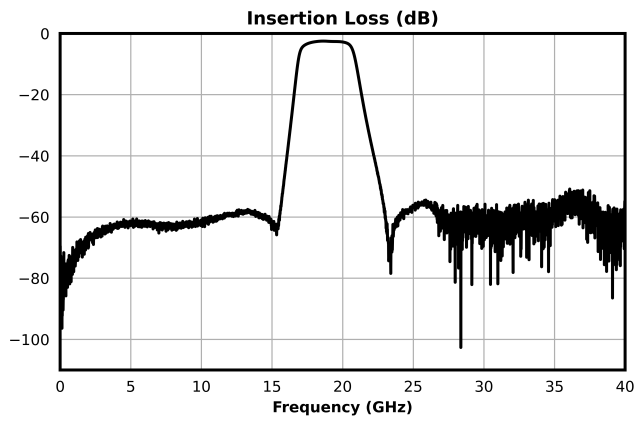
The electrical specifications apply at TA=+25°C in a 50Ω system. Typical data shown is for the filter in a CSP3 package with a sine wave input applied to Pin 1. Min and Max limits are guaranteed at TA=+25°C.

Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
1 dBc Passband	Configuration A, Temp = 25°C	17.45	20.43	-	-	-	GHz
30 dBc Rejection Point	Configuration A, Temp = 25°C	16.26	21.86	-	-	-	GHz
3 dBc Passband	Configuration A, Temp = 25°C	17.03	20.71	-	-	-	GHz
Center Freq	Configuration A, Temp = 25°C	-	-	-	18.88	-	GHz
Group Delay	Configuration A, Temp = 25°C	-	-	-	483.88	-	ps
Impedance	Configuration A, Temp = 25°C	-	-	-	50	-	Ω
Insertion Loss @ fc	Configuration A, Temp = 25°C	-	-	-	2.5	-	dB
Passband Return Loss	Configuration A, Temp = 25°C	-	-	-	22	-	dB

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### Passive GaAs MMIC 17.8 - 20.2 GHz Bandpass Filter

#### Typical Performance Plot



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

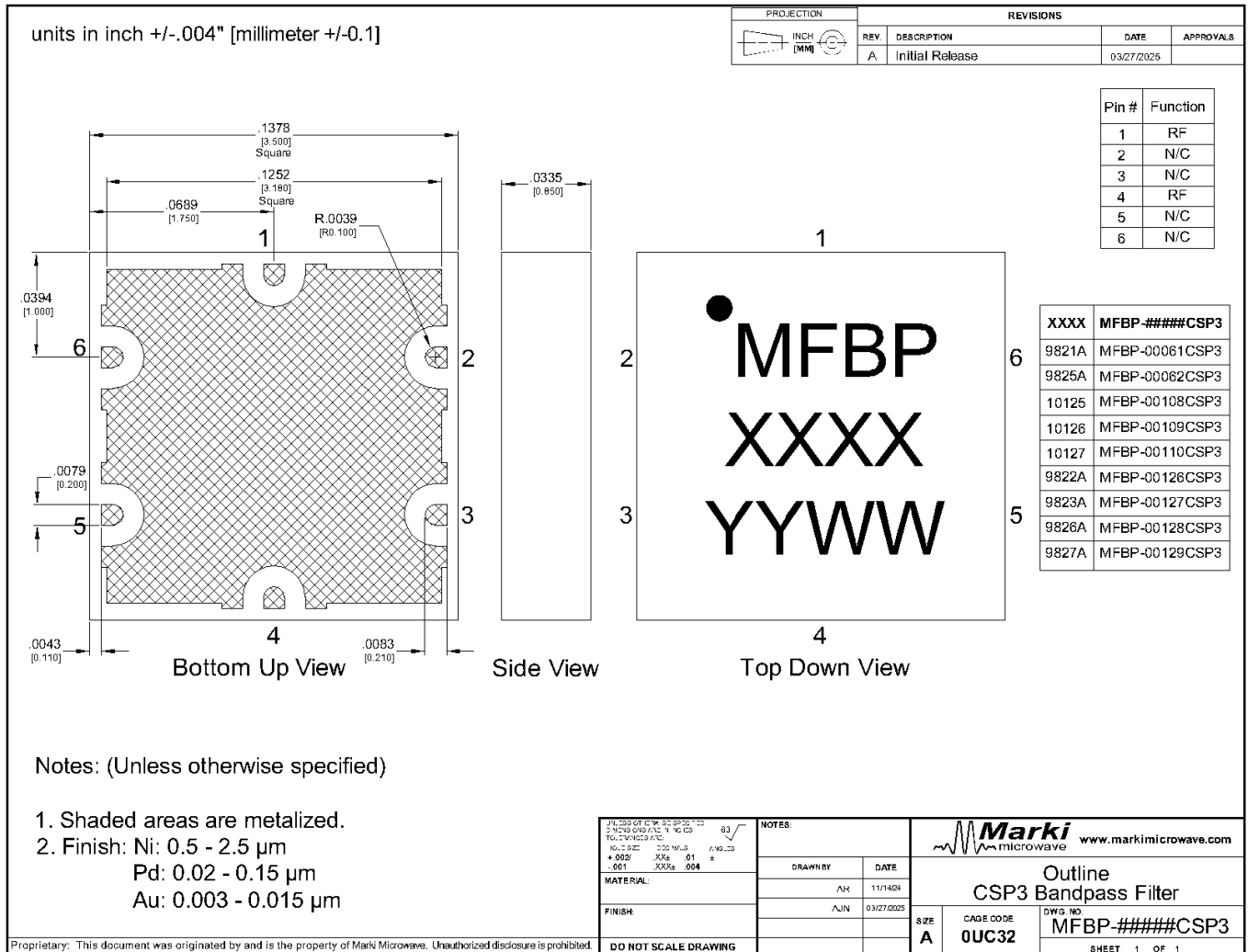
# MFBP-00127CSP3

Passive GaAs MMIC 17.8 - 20.2 GHz Bandpass Filter

## Mechanical Data

## Outline Drawing

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

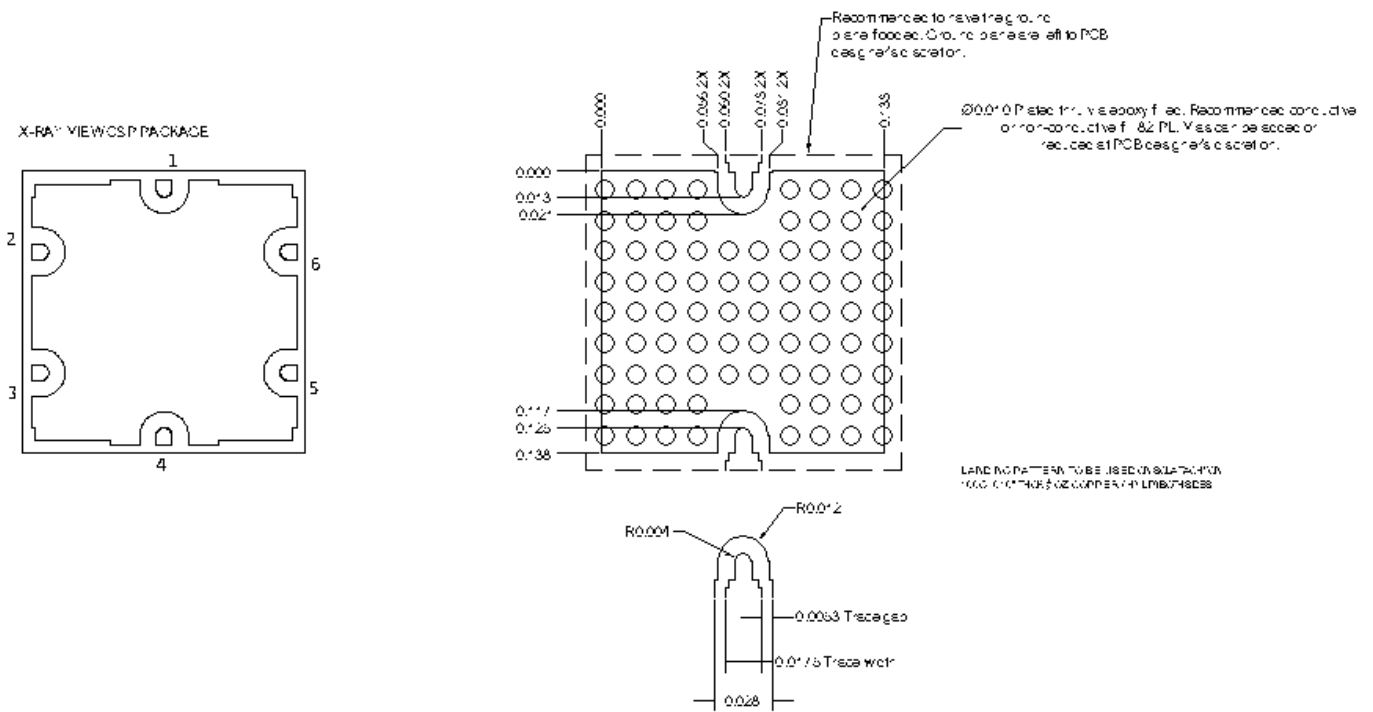


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### Passive GaAs MMIC 17.8 - 20.2 GHz Bandpass Filter

#### Footprint Image

Download : [Footprint Drawing](#)

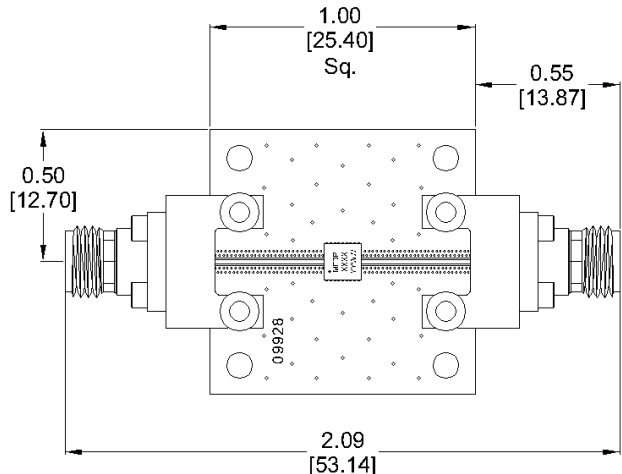


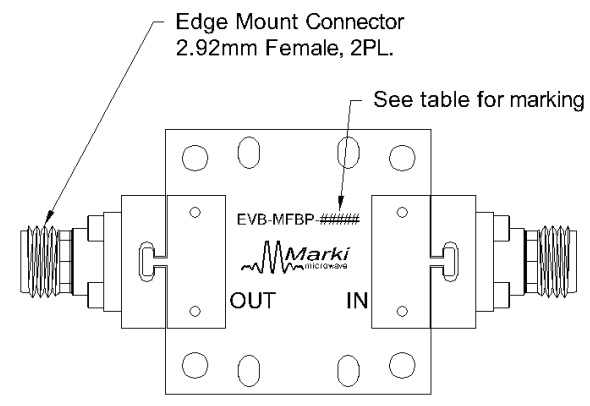
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## Passive GaAs MMIC 17.8 - 20.2 GHz Bandpass Filter

### Evaluation Board - Outline Drawing

All measurements are typical






Edge Mount Connector  
2.92mm Female, 2PL.

See table for marking

Backside Label

XXXX	EVB-MFBP-#####	Surface Mount PN
9821A	EVB-MFBP-00061	MFBP-00061CSP3
9825A	EVB-MFBP-00062	MFBP-00062CSP3
10125	EVB-MFBP-00108	MFBP-00108CSP3
10126	EVB-MFBP-00109	MFBP-00109CSP3
10127	EVB-MFBP-00110	MFBP-00110CSP3
9822A	EVB-MFBP-00126	MFBP-00126CSP3
9823A	EVB-MFBP-00127	MFBP-00127CSP3
9826A	EVB-MFBP-00128	MFBP-00128CSP3
9827A	EVB-MFBP-00129	MFBP-00129CSP3

RoHS Compliant (SN96.5/AG3.5) Components/Assembly

<p>J1,250 OF EW 97 8P 25 10 2 1025 0202 / 1 10 10 10 TO: EW 1025 / 10 10 10 10 10 10 10 10 10 10 + .002 / .XX 02 -.001 / .XX 05</p> <p>MATERIAL:</p> <p>FINISH:</p>	<p>NOTES:</p> <p>DRAWN BY: AR</p> <p>DATE: 11/13/24</p> <p>AJN</p> <p>03/27/2025</p>	 <p>www.markimicrowave.com</p> <p>Outline Eval Board MFBP</p> <p>SIZE: A    CAGE CODE: 0UC32    DWG. NO: EVB-MFBP-#####</p>
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