

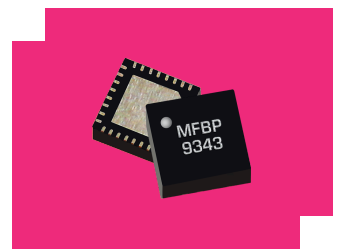
MFBP-00034PSM

Passive GaAs MMIC 18.05-21.3 GHz Bandpass Filter

DEVICE OVERVIEW

General Description

The MFBP-00034PSM 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-00034PSM is available as a 5x5mm 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

- Excellent Return Loss
- 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-00034PSM	Passive GaAs MMIC 18.05-21.3 GHz Bandpass Filter	QFN	RoHS REACH	Released	EAR99
EVB-MFBP-00034P	Evaluation Board, Passive GaAs 18.05-21.3 MMIC Bandpass Filter	EVB	RoHS REACH	Released	EAR99

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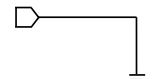
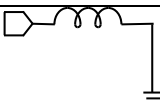
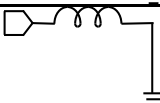
■ Footprint Image

Revision History

Revision Code	Revision Date	Comment
-	2024-05-02	Initial Release

Port Configuration and Functions

Port Functions

Port	Function	Description	Equivalent Circuit for Package
Pad	Ground	PSM package ground path is provided through the substrate and ground bond pads.	
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
DC Current	760	mA
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	-	5 x 5 mm
Moisture Sensitivity Level	-	MSL 1

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.

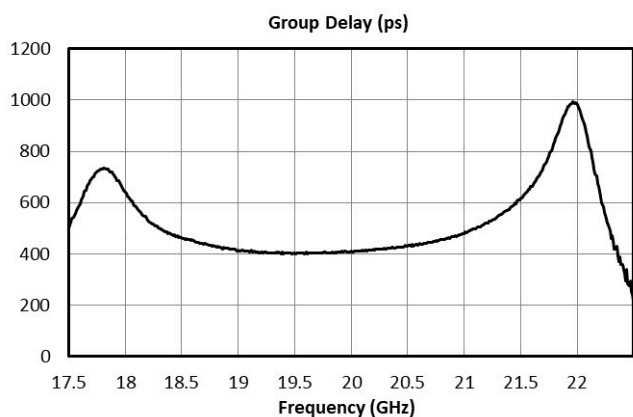
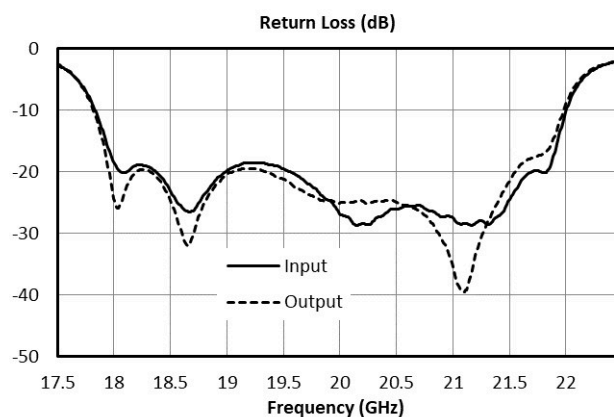
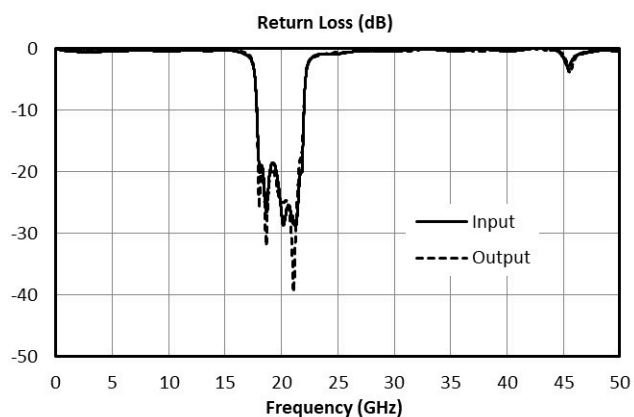
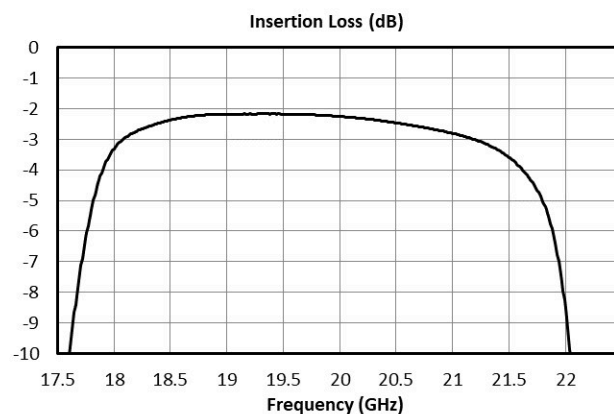
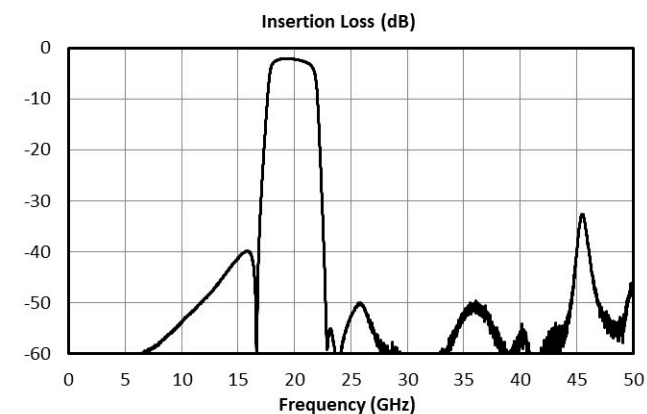
Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
Center Freq ¹	Configuration A, 25°C	-	-	-	19.61	-	GHz
1 dBc Passband ²	Configuration A, 25°C	18.05	21.3	-	-	-	GHz
3 dBc Passband ³	Configuration A, 25°C	17.82	21.8	-	-	-	GHz
30 dBc Rejection Point ⁴	Configuration A, 25°C	17	22.47	-	-	-	GHz
Passband Return Loss ⁵	Configuration A, 25°C	-	-	-	22	-	dB
Group Delay ⁶	Configuration A, 25°C	-	-	-	430.56	-	ps
Impedance ⁷	Configuration A, 25°C	-	-	-	50	-	Ω
Insertion Loss @ fc ⁸	Configuration A, 25°C	-	-	-	2.25	-	dB

[1][2][3][4][5][6][7][8] Eval Board with AFR

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Bandpass Filter

Typical Performance Plots



All measurements are de-embedded from the fixture with AFR.

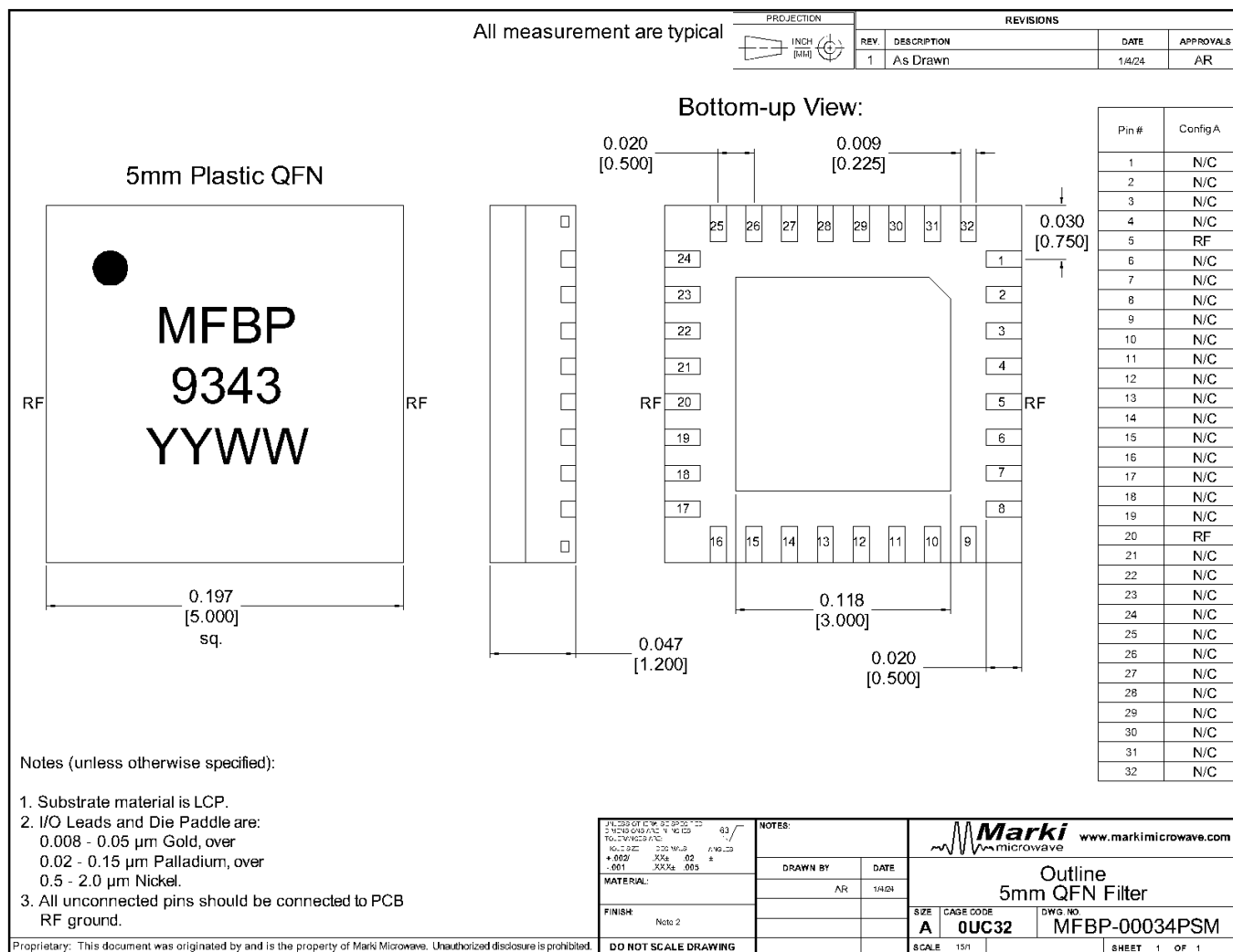
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Passive GaAs MMIC 18.05-21.3 GHz
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Mechanical Data

Outline Drawing

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



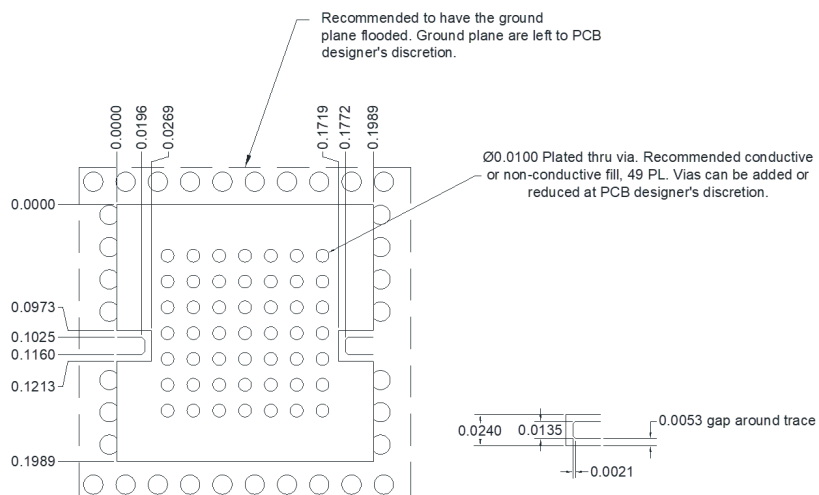
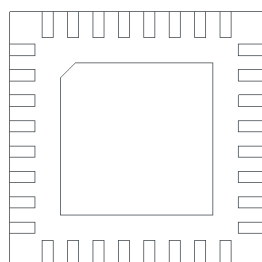
MFBP-00034PSM

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Bandpass Filter

Footprint Image

Download : [Footprint Drawing](#)

QFN 5mm Sample Drawing
X-Ray view



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

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