

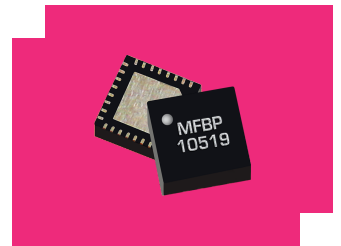
MFBP-00133PSM

Passive GaAs MMIC 19.8 - 21.7 GHz Bandpass Filter

DEVICE OVERVIEW

General Description

The MFBP-00133PSM passive MMIC surface mount bandpass filter is an ideal solution for small form factor, high rejection filtering. The MFBP-00133PSM features a 19.8-21.7GHz 1dBc passband and 3.0dB 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-00133PSM 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

- 21 dB Return Loss
- 3.0 dB Insertion Loss @ Fc
- 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-00133PSM	Passive GaAs MMIC 19.8 - 21.7 GHz Bandpass Filter	PSM	RoHS REACH	Released	EAR99
EVB-MFBP-00133P	Evaluation Board, Passive GaAs 19.8-21.7 GHz MMIC Bandpass Filter	EVB	RoHS REACH	Released	EAR99

Table Of Contents

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

Revision History

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

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	-	5 x 5 mm
Moisture Sensitivity Level	-	MSL 1

MFBP-00133PSM

Passive GaAs MMIC 19.8 - 21.7 GHz Bandpass Filter

Electrical Specifications

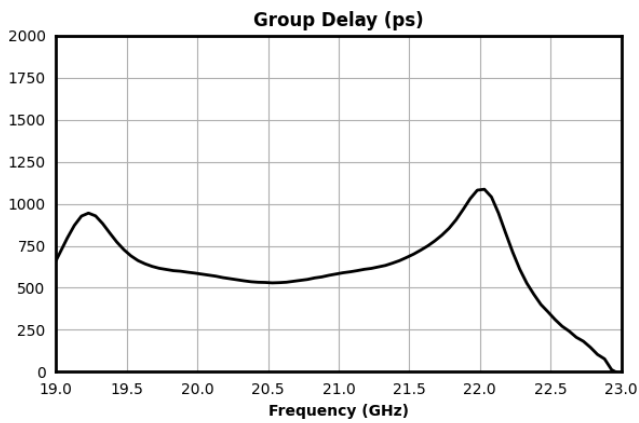
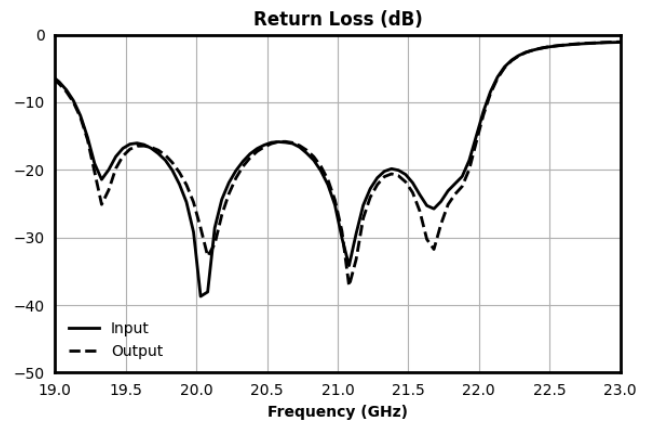
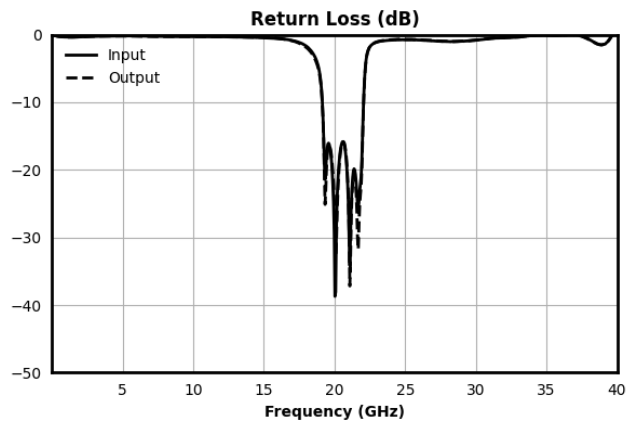
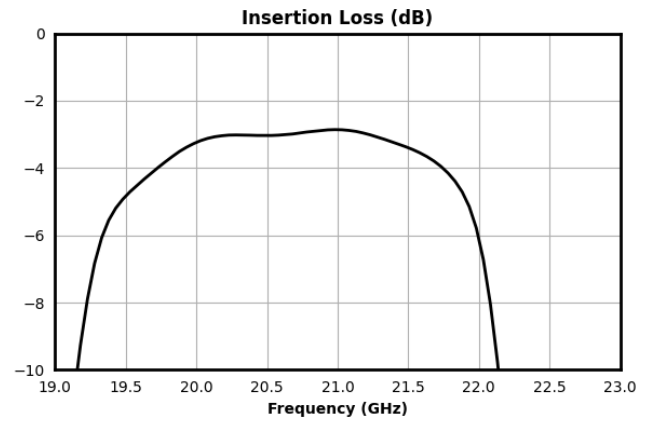
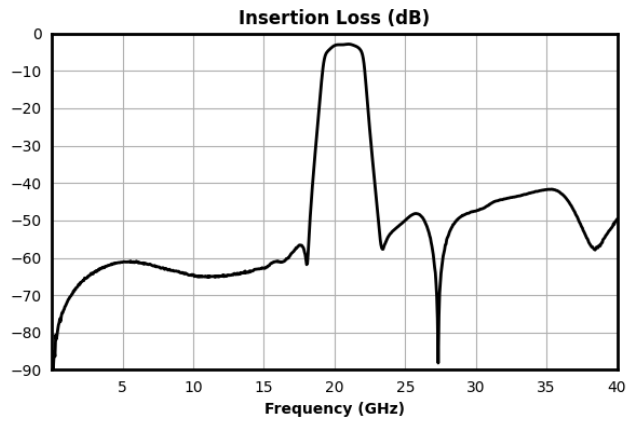
The electrical specifications apply at TA=+25°C in a 50Ω system. Typical data shown is for the filter in a PSM package with a sine wave input applied to Pin 5. Min and Max limits are guaranteed at TA=+25°C.

Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
1 dBc Passband	Configuration A, 25°C	19.78	21.68	-	-	-	GHz
30 dBc Rejection Point	Configuration A, 25°C	18.63	22.63	-	-	-	GHz
3 dBc Passband	Configuration A, 25°C	19.38	21.98	-	-	-	GHz
Center Freq	Configuration A, 25°C	-	-	-	20.71	-	GHz
Group Delay	Configuration A, 25°C	-	-	-	582	-	ps
Impedance	Configuration A, 25°C	-	-	-	50	-	Ω
Insertion Loss @ fc	Configuration A, 25°C	-	-	-	3.0	-	dB
Passband Return Loss	Configuration A, 25°C	-	-	-	21	-	dB

MFBP-00133PSM

Passive GaAs MMIC 19.8 - 21.7 GHz Bandpass Filter

Typical Performance Plot



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

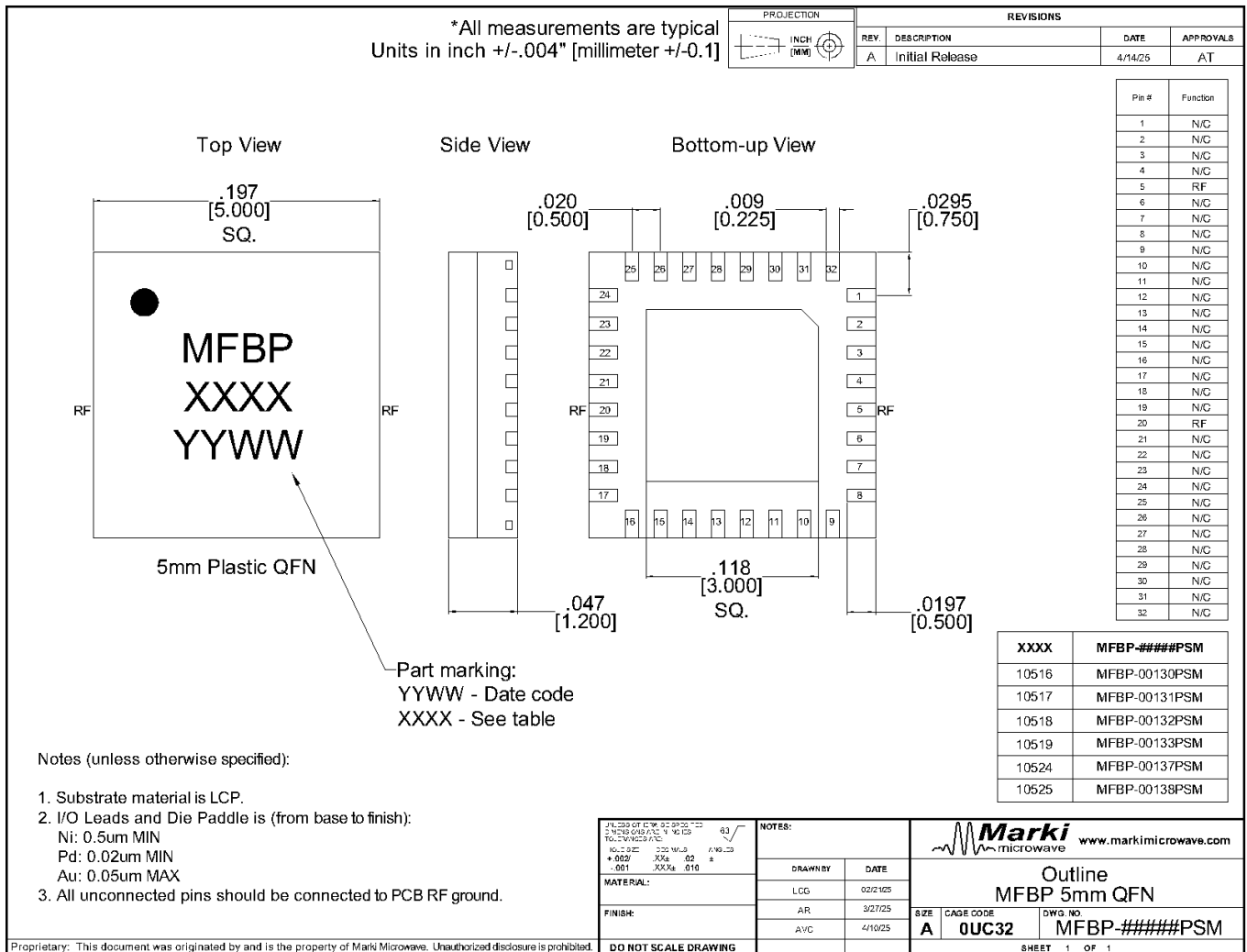
MFBP-00133PSM

Passive GaAs MMIC 19.8 - 21.7 GHz Bandpass Filter

Mechanical Data

Outline Drawing

Download : [Outline 2D Drawing](#)



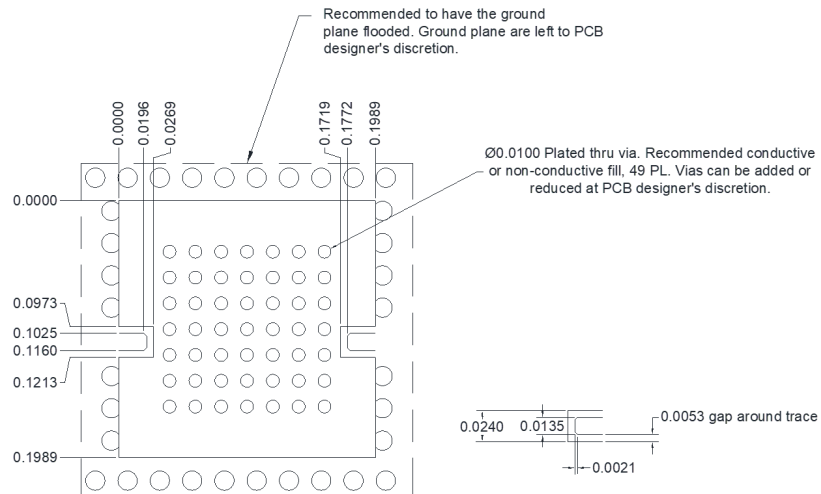
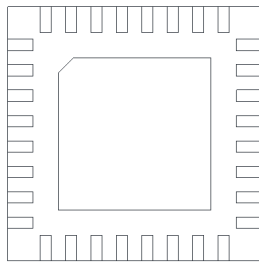
MFBP-00133PSM

Passive GaAs MMIC 19.8 - 21.7 GHz Bandpass Filter

Footprint Image

Download : [Footprint Drawing](#)

QFN 5mm Sample Drawing
X-Ray view

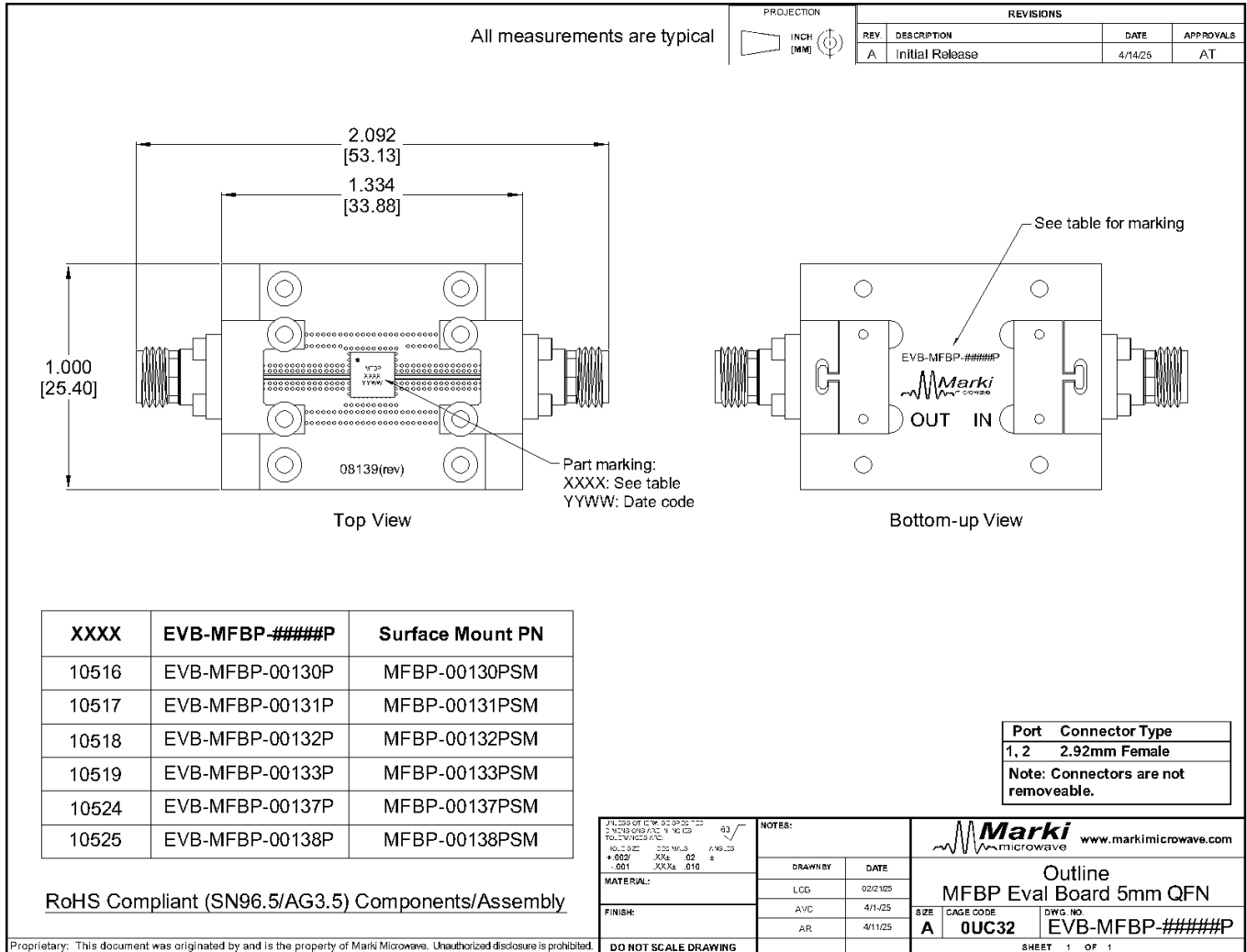


Material Rogers 4003 008" $\frac{1}{2}$ Oz Cu both sides.

MFBP-00133PSM

Passive GaAs MMIC 19.8 - 21.7 GHz Bandpass Filter

Evaluation Board - Outline Drawing



DISCLAIMER

MARKI MICROWAVE, INC., ("MARKI") PROVIDES TECHNICAL SPECIFICATIONS AND DATA (INCLUDING DATASHEETS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, AND OTHER INFORMATION AND RESOURCES "AS IS" AND WITH ALL FAULTS. MARKI DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. These resources are intended for developers skilled in the art designing with Marki products. You are solely responsible for (1) selecting the appropriate products for your application, (2) designing, validating, and testing your application, and (3) ensuring your application meets applicable standards and other requirements. Marki makes no guarantee regarding the suitability of its products for any particular purpose, nor does Marki assume any liability whatsoever arising out of your use or application of any Marki product.

Marki grants you permission to use these resources only for development of an application that uses Marki products. Other reproduction or use of these resources is strictly prohibited. No license is granted to any other Marki intellectual property or to any third-party intellectual property. Marki reserves the right to make changes to the product(s) or information contained herein without notice.

MARKI MICROWAVE and T3 MIXER are trademarks or registered trademarks of Marki Microwave, Inc. All other trademarks used are the property of their respective owners.

© 2025, Marki Microwave, Inc