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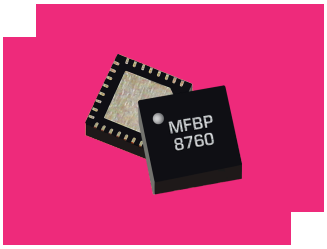
MFBP-00005PSM

Passive GaAs MMIC 6.25-18.05 GHz Bandpass Filter

DEVICE OVERVIEW

General Description

The MFBP-00005PSM family of passive MMIC surface mount bandpass filters are 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-00005PSM 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-00005PSM	Passive GaAs MMIC 6.25-18.05 GHz Bandpass Filter	QFN	RoHS REACH	Released	EAR99
EVB-MFBP-00005P	Evaluation Board, Passive GaAs 6.25-18.05 GHz MMIC Bandpass Filter	EVB	RoHS REACH	Released	EAR99

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Table Of Contents

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

Revision History

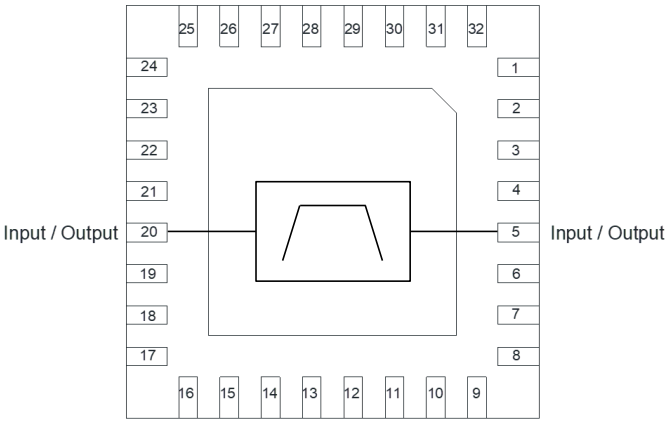
Revision Code	Revision Date	Comment
-	2023-07-01	Datasheet Initial Release
A	2024-07-02	Updated Port Diagram description

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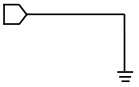
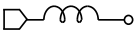
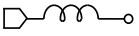
Port Configuration and Functions

Port Diagram

A bottom-up view of the MFBP-00005PSM package outline drawing is shown below. The MMIC bandpass filters are symmetrical allowing Pin 5 or Port 20 to be used as the input.



Port Functions

Port	Function	Description	Equivalent Circuit for Package
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 open to ground for the PSM package.	
Pin 5	Input/Output	Pin 5 is DC open to ground for the PSM package.	

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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	125 to < 250 Volts	HBM Class 0B
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, 25°C	6.26	18.07	-	-	-	GHz
30 dBc Rejection Point	Configuration A, 25°C	4.8	21.32	-	-	-	GHz
3 dBc Passband	Configuration A, 25°C	5.72	19.04	-	-	-	GHz
Center Freq	Configuration A, 25°C	-	-	-	10.64	-	GHz
Group Delay	Configuration A, 25°C	-	-	-	174.58	-	ps
Impedance	Configuration A, 25°C	-	-	-	50	-	Ω
Insertion Loss @ fc	Configuration A, 25°C	-	-	-	1.1	-	dB
Passband Return Loss	Configuration A, 25°C	-	-	-	22	-	dB

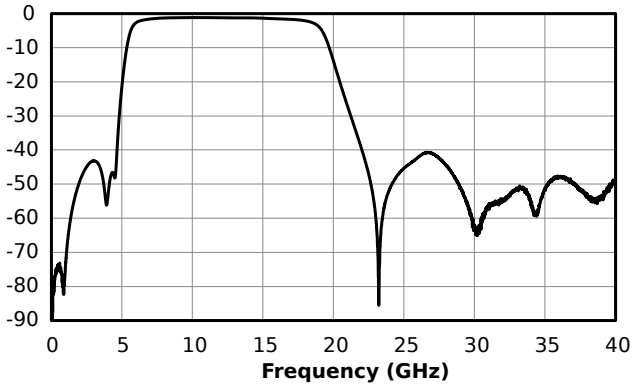
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MFBP-00005PSM

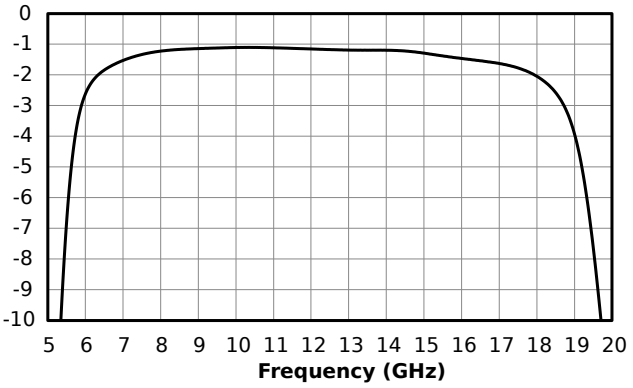
Passive GaAs MMIC 6.25-18.05 GHz Bandpass Filter

Typical Performance Plots

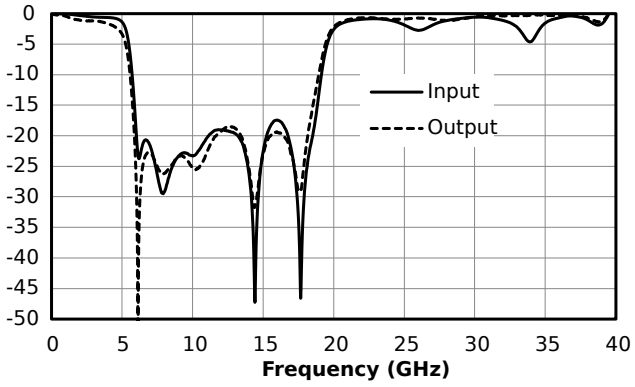
MFBP-00005PSM Insertion Loss (dB)



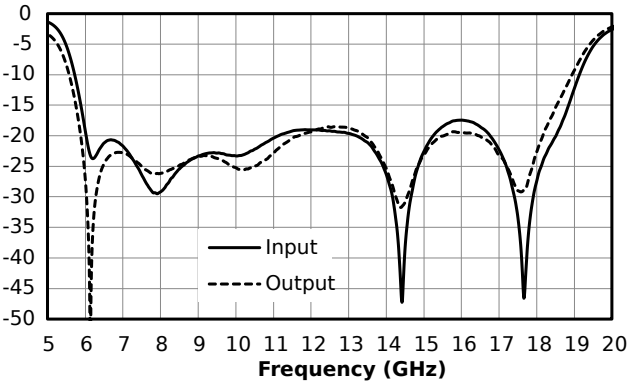
MFBP-00005PSM Insertion Loss (dB)



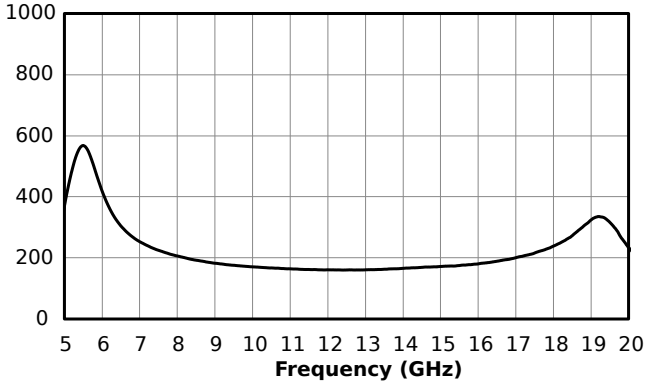
MFBP-00005PSM Return Loss (dB)



MFBP-00005PSM Return Loss (dB)



MFBP-00005PSM Group Delay (ps)



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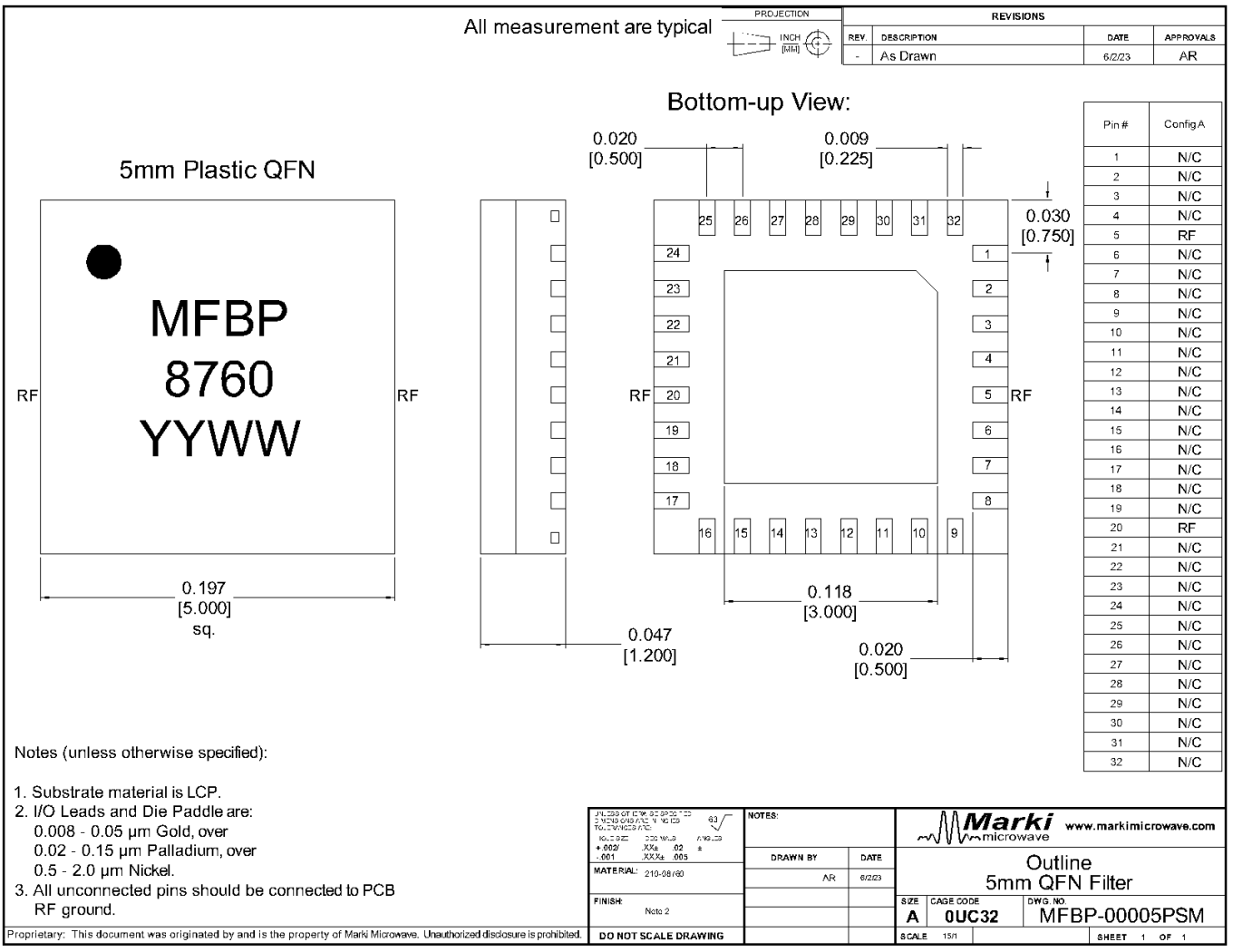
MFBP-00005PSM

Passive GaAs MMIC 6.25-18.05 GHz Bandpass Filter

Mechanical Data

Outline Drawing

Download : Outline 2D Drawing | Outline 3D Drawing | Outline 3D STP



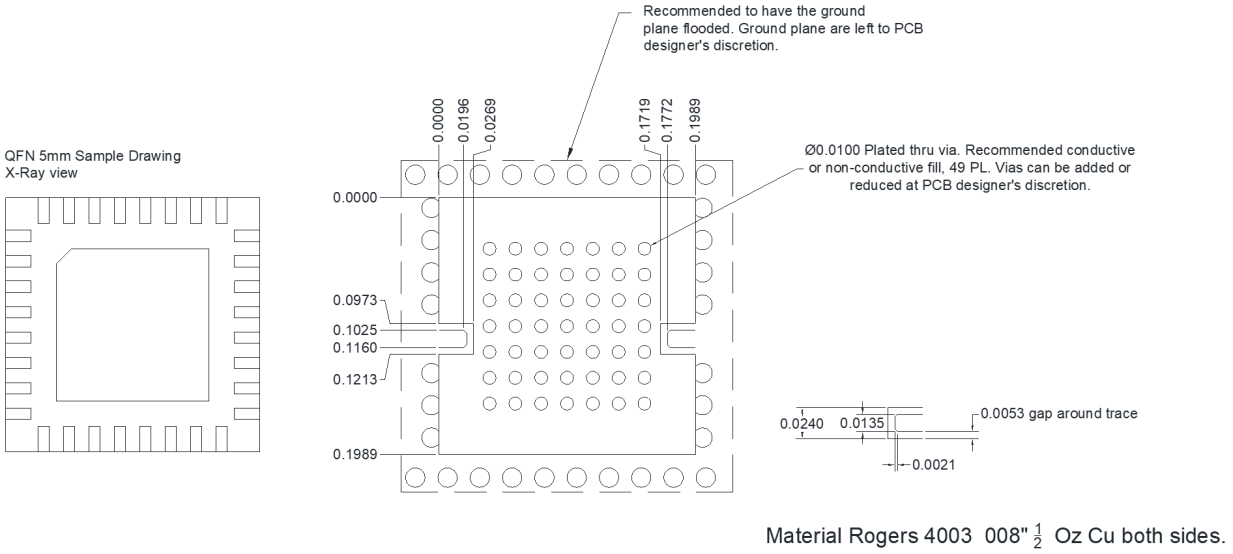
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MFBP-00005PSM

Passive GaAs MMIC 6.25-18.05 GHz Bandpass Filter

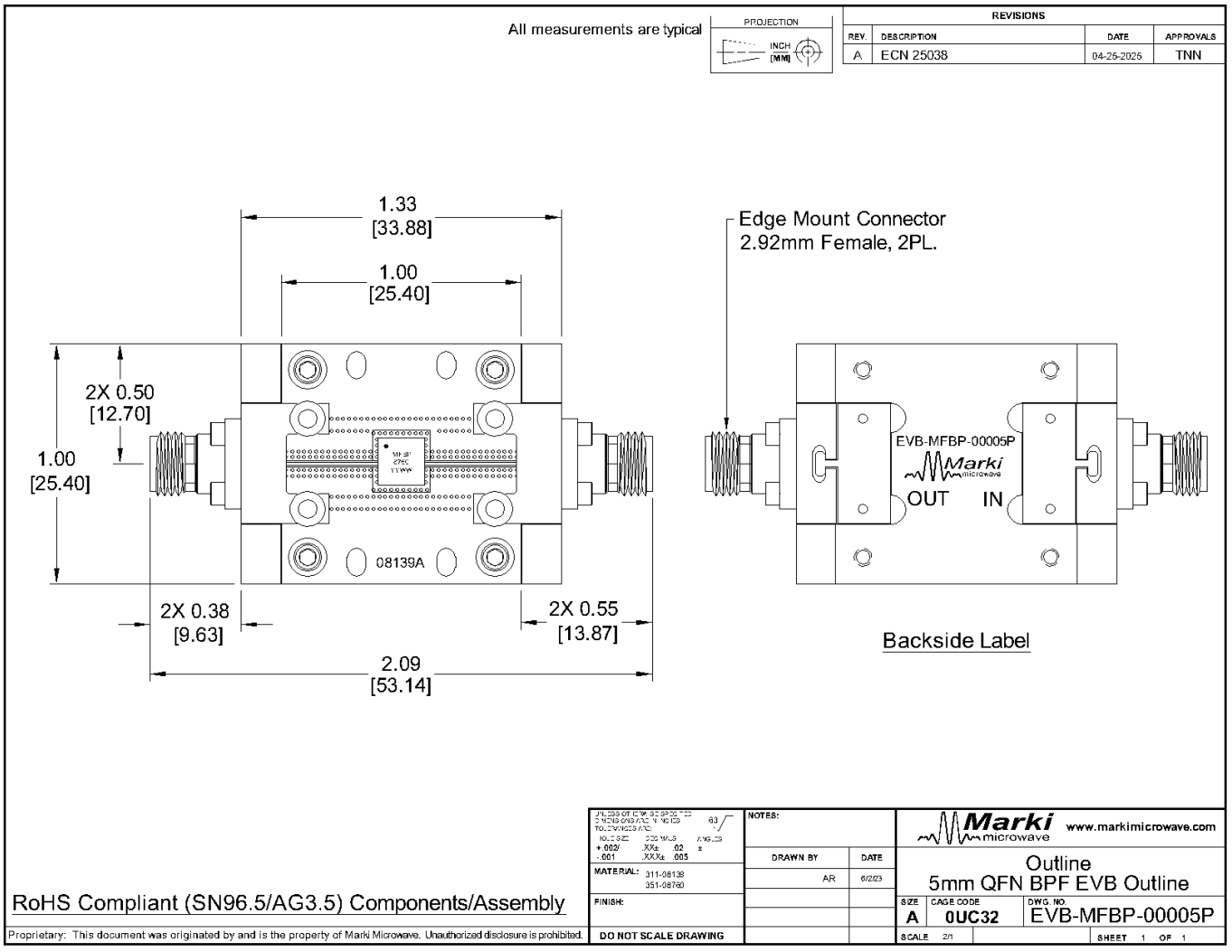
Footprint Image

Download : Footprint Drawing



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Evaluation Board - Outline Drawing



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