

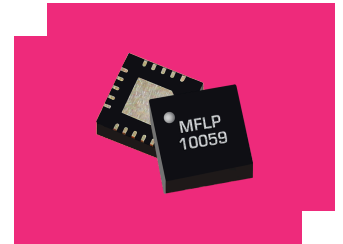
# MFLP-00010PSM

## Passive GaAs MMIC 4.5 GHz Lowpass Filter

### DEVICE OVERVIEW

#### General Description

The MFLP-00010PSM is a passive MMIC surface mount 4.5 GHz lowpass filter that 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 MFLP-00010PSM 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](#)

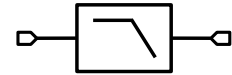
#### Features

- Low Passband Insertion Loss with Fast Roll-off
- Excellent Return Loss
- High Stop Band Suppression

#### Applications

- Test and Measurement Equipment
- SATCOM
- Radar
- RF Transceivers

#### Functional Block Diagram



#### Part Ordering Options

Part Number	Description	Package	Green Status	Product Lifecycle	Export Classification
MFLP-00010PSM	Passive GaAs MMIC 4.5 GHz Lowpass Filter	QFN	RoHS REACH	Released	EAR99
EVB-MFLP-00010P	Evaluation Board, Passive GaAs MMIC 4.5GHz Lowpass Filter	EVB	RoHS REACH	Released	EAR99

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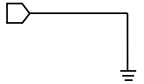


- **Device Overview**
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## Revision History

Revision Code	Revision Date	Comment
-	2024-12-13	Initial Release

## Port Configuration and Functions

### 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	Output	Pin 20 is DC short to Pin 5.	
Pin 5	Input	Pin 5 is DC short to Pin 20.	

## 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

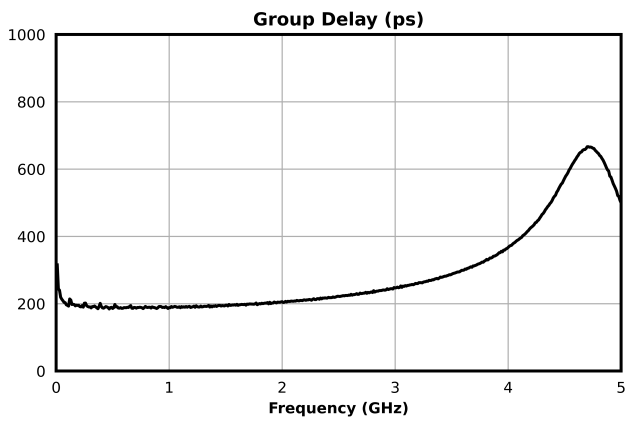
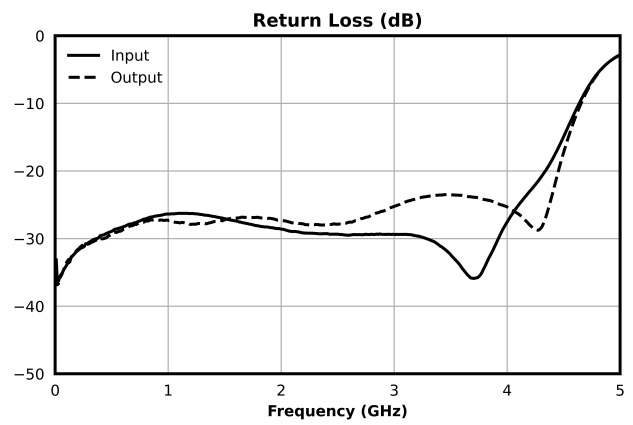
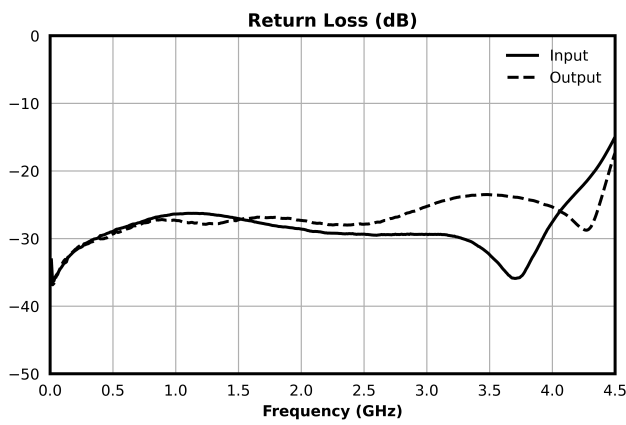
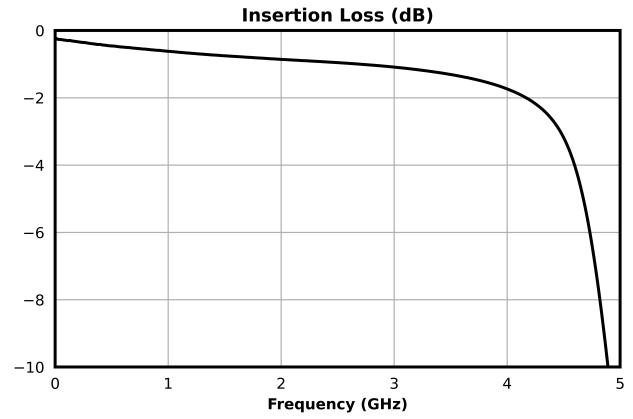
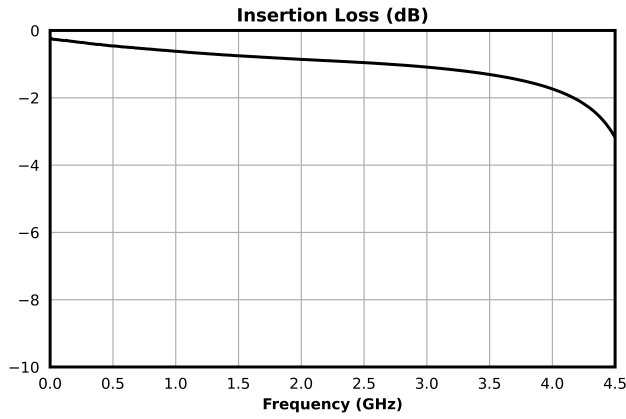
Parameter	Details	Rating
Dimensions	-	5 x 5 mm
Moisture Sensitivity Level	-	MSL 1

**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, Temp = 25°C	0	3.36	-	-	-	GHz
3 dBc Passband	Configuration A, Temp = 25°C	0	4.5	-	-	-	GHz
30 dBc Rejection Point	Configuration A, Temp = 25°C	5.42	5.42	-	-	-	GHz
Center Freq	Configuration A, Temp = 25°C	-	-	-	1.68	-	GHz
Passband Return Loss	Configuration A, Temp = 25°C	-	-	-	28	-	dB
Group Delay	Configuration A, Temp = 25°C	-	-	-	200	-	ps
Impedance	Configuration A, Temp = 25°C	-	-	-	50	-	Ω

**Typical Performance Plot**



Typical performance is de-embedded from EVB using Automatic Fixture Removal (AFR).

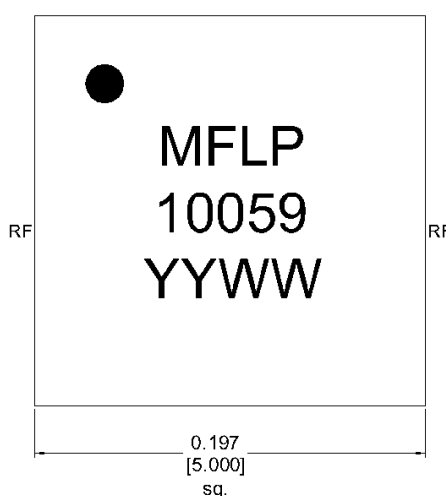
### Mechanical Data

### Outline Drawing

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

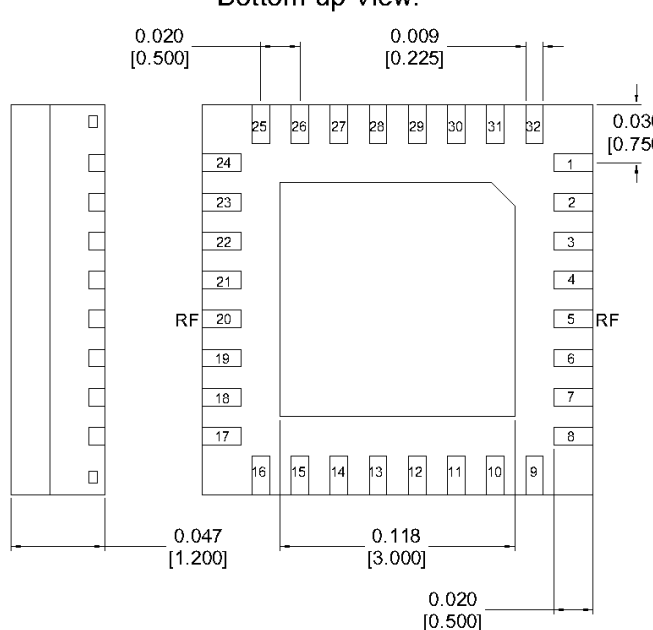
All measurement are typical

5mm Plastic QFN



0.197  
[5.000]  
sq.

Bottom-up View:



0.020 [0.500]      0.009 [0.225]

0.047 [1.200]      0.118 [3.000]

0.020 [0.500]

Pin #	ConfigA
1	N/C
2	N/C
3	N/C
4	N/C
5	RF
6	N/C
7	N/C
8	N/C
9	N/C
10	N/C
11	N/C
12	N/C
13	N/C
14	N/C
15	N/C
16	N/C
17	N/C
18	N/C
19	N/C
20	RF
21	N/C
22	N/C
23	N/C
24	N/C
25	N/C
26	N/C
27	N/C
28	N/C
29	N/C
30	N/C
31	N/C
32	N/C

Notes (unless otherwise specified):


- Substrate material is LCP.
- I/O Leads and Die Paddle are:  
0.008 - 0.05  $\mu$ m Gold, over  
0.02 - 0.15  $\mu$ m Palladium, over  
0.5 - 2.0  $\mu$ m Nickel.
- All unconnected pins should be connected to PCB RF ground.

JUL 29 07 15W 82 99 30 110  
S N 10 045 172 1 10 03  
TOL: 0.005/0.002

MATERIAL:  
FINISH: Nota 2

NOTES:

DRAWN BY	AT	DATE	7/18/04
WV			7/18/04
AJN			7/09/25



Outline  
5mm QFN Filter

SIZE: **A** CAGE CODE: **0UC32** DWG. NO: **MFLP-00010PSM**

SCALE: 1:1 SHEET 1 OF 1

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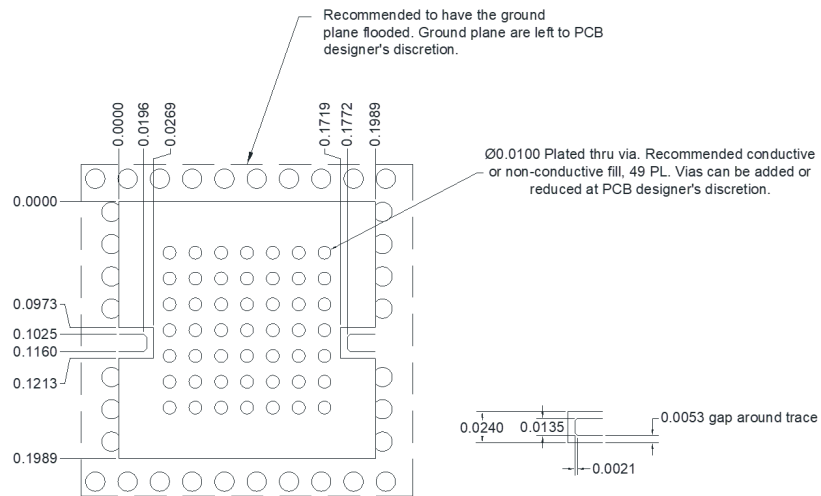
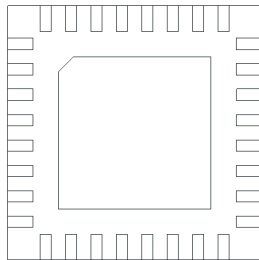
## MFLP-00010PSM

### Passive GaAs MMIC 4.5 GHz Lowpass Filter

#### Footprint Image

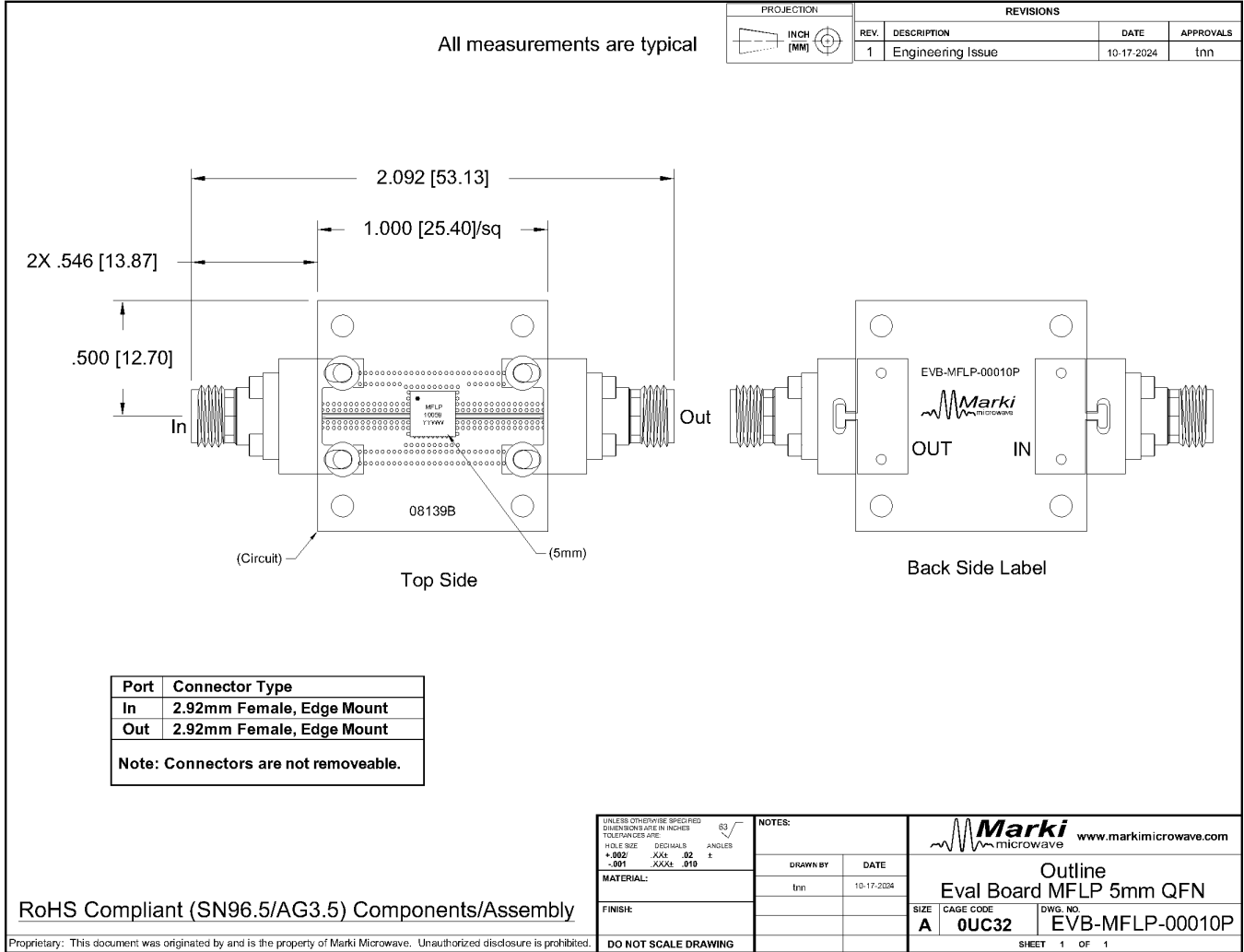
Download : [Footprint Drawing](#)

QFN 5mm Sample Drawing  
X-Ray view



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

### Evaluation Board - Outline Drawing



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