

MFHP-00021GSM2

Passive Glass 0.5 GHz Surface Mount Highpass Filter

DEVICE OVERVIEW

General Description

The MFHP-00021GSM2 surface-mount highpass filter is an ideal solution for extremely small form factor, high rejection filtering. The MFHP-00021GSM2 features a 0.5GHz 3dBc passband and 23dB passband return loss. Its advanced glass substrate technology allows production of smaller filter constructions that replace larger form factor circuit board constructions. Tight fabrication ensures tighter unit-to-unit consistency than legacy filter technologies, supporting accurate simulation with the provided S2P data. The MFHP-00021GSM2 is offered in a 4.00 x 4.25 mm package.



[Download s-parameters here](#)

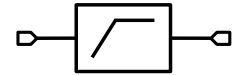
Features

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

Applications

N/A

Functional Block Diagram



Part Ordering Options

Part Number	Description	Package	Green Status	Product Lifecycle	Export Classification
MFHP-00021GSM2	Passive Glass 0.5 GHz Surface Mount Highpass Filter	GSM2	REACH RoHS	Released	-
EVB-MFHP-00021G	EVB-MFHP-00021G	GSM		Released	-

MFHP-00021GSM2

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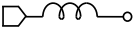
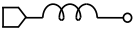
■ Device Overview	■ Specifications
General Description	Absolute Maximum Ratings
Features	Package Information
Applications	Electrical Specifications
Functional Block Diagram	Typical Performance Plot
	Performance Over Temperature
■ Port Configuration and Functions	■ Mechanical Data
Port Functions	Outline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

Revision History

Revision Code	Revision Date	Comment
-	2025-12-10	Initial Release

Port Configuration and Functions

Port Functions

Port	Function	Description	DC Equivalent Circuit
Pin 1	RF Input	Pin 1 is DC Open to GND	
Pin 2	RF Output	Pin 2 is DC Open to GND	

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Specifications

Absolute Maximum Ratings

Parameter	Maximum Rating	Unit
Maximum Operating Temperature	100	°C
Maximum Storage Temperature	125	°C
Minimum Operating Temperature	-55	°C
Minimum Storage Temperature	-65	°C
RF Power Handling	5	W
DC Current	2	A

Package Information

Parameter	Details	Rating
ESD	250 to < 500 Volts	HBM Class 1A
Dimensions	-	4.25 x 4.00 mm
Moisture Sensitivity Level	-	MSL 1

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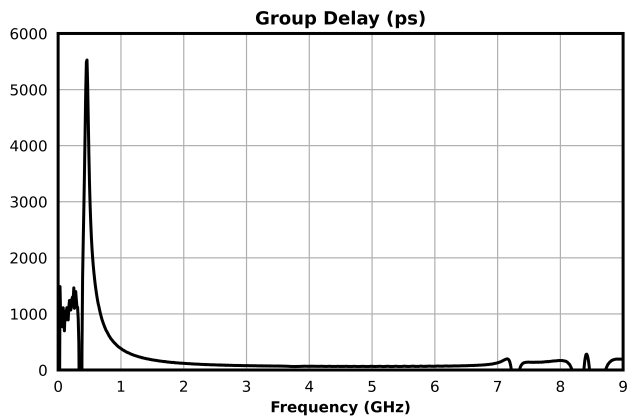
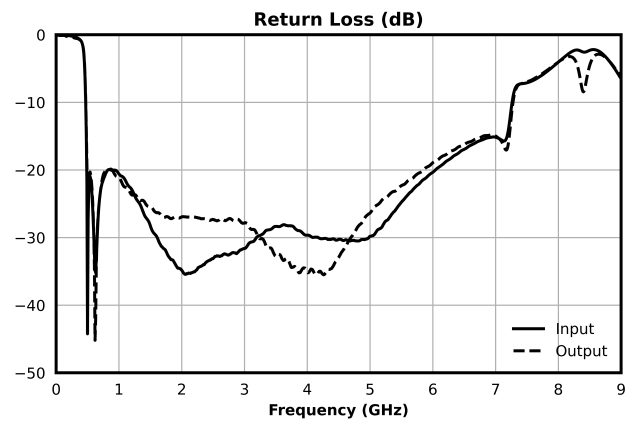
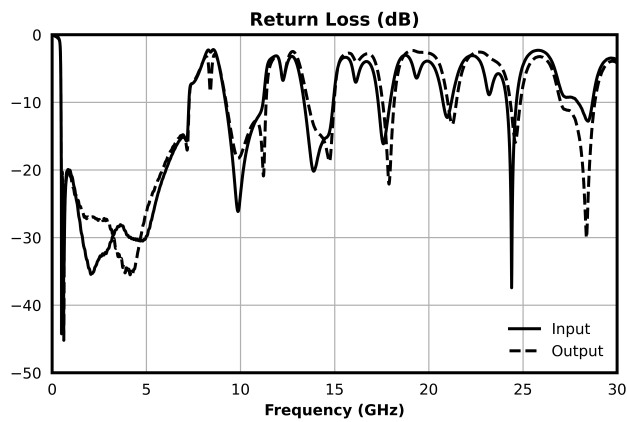
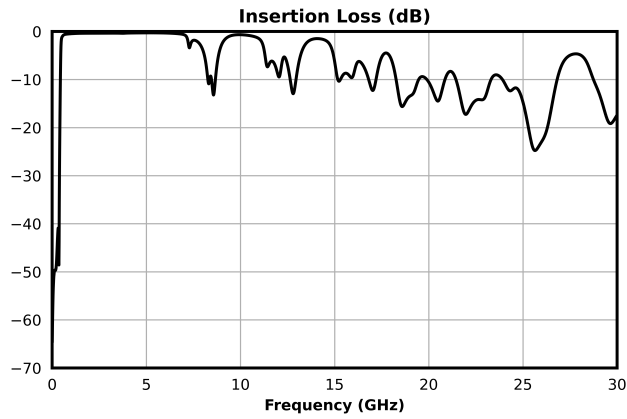
Electrical Specifications

Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
1 dBc Passband	Configuration A, Temp = 25°C	0.52	-	-	-	-	GHz
3 dBc Passband	Configuration A, Temp = 25°C	0.49	-	-	-	-	GHz
30 dBc Rejection Point	Configuration A, Temp = 25°C	0.39	-	-	-	-	GHz
Center Freq	Configuration A, Temp = 25°C	-	-	-	15.26	-	GHz
Insertion Loss @ f_c	Configuration A, Temp = 25°C	-	-	-	1.6	-	dB
Passband Return Loss	Configuration A, Temp = 25°C	-	-	-	23	-	dB
Group Delay	Configuration A, Temp = 25°C	-	-	-	86	-	ps

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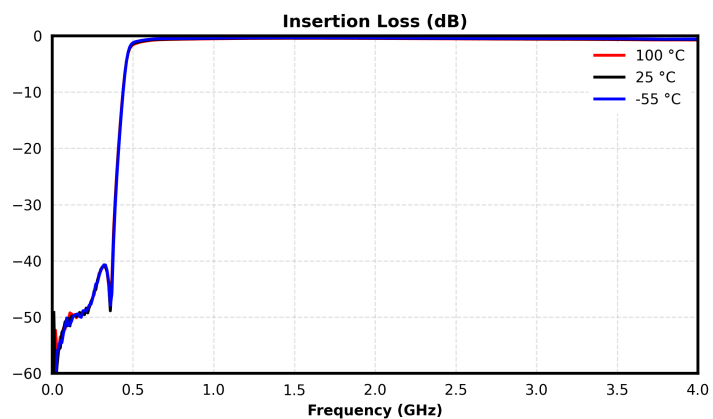
Typical Performance Plot



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Performance Over Temperature





Passive Glass 0.5 GHz Surface Mount Highpass Filter

Outline Drawing

REVISIONS

REV.	DESCRIPTION	DATE	APPROVALS
A	Initial Release	11/17/25	AT

Front View

Bottom Up View

Top Side

Notes:

- Substrate Material Properties:
CTE = 10 ppm/K
Thermal Conductivity = 1.5 W/mK
Thickness = 300um +/- 10um
- Front to back registration to be ±10um max.
- Package length and width tolerance = +/- 20um
- Finish: ENEPIG, 2.5µm Ni, 0.3µm Pd, 0.25µm Au.
- Top and Bottom side metal thickness = 20um +/- 4um
- Top Side Solder Mask thickness = 5um
- Shaded areas in this drawing are metalized

Material:

PROPERTY	VALUE	UNIT
CTE	10	ppm/K
Thermal Conductivity	1.5	W/mK
Thickness	300	um

DO NOT SCALE DRAWING

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Circuit Glass HPF

Size A 0UC32

DWG. NO. MFHP #####GSM2

Scale 15x

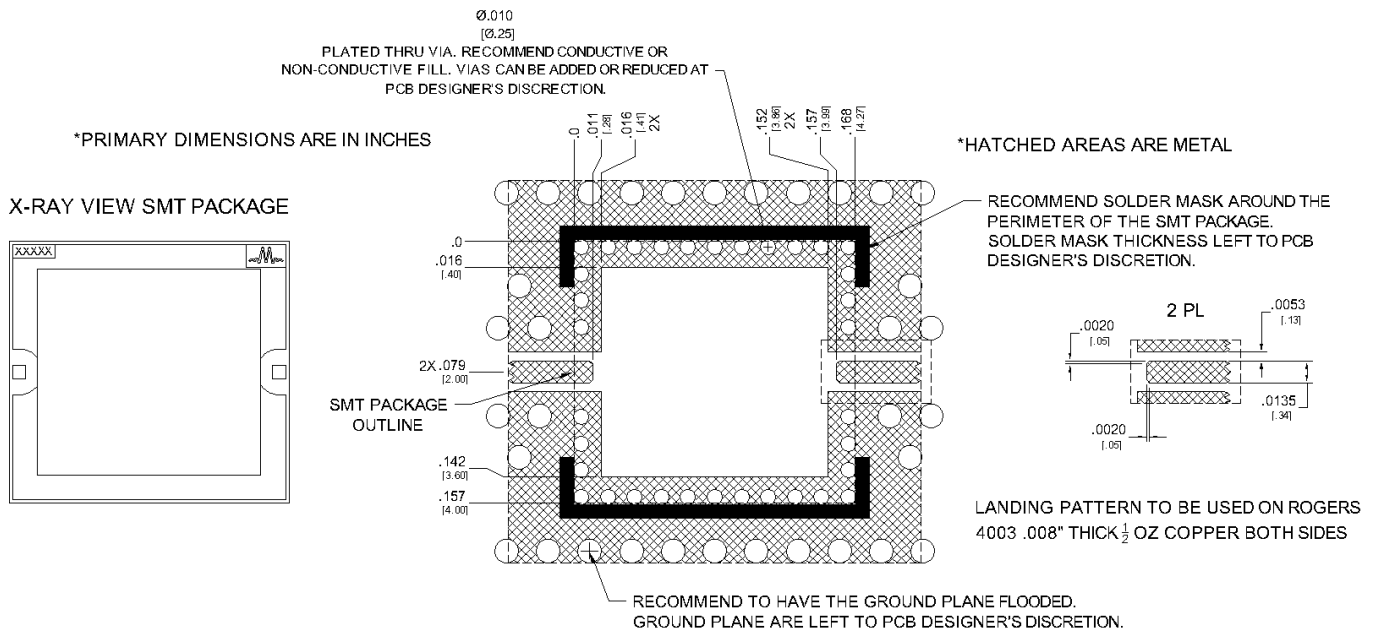
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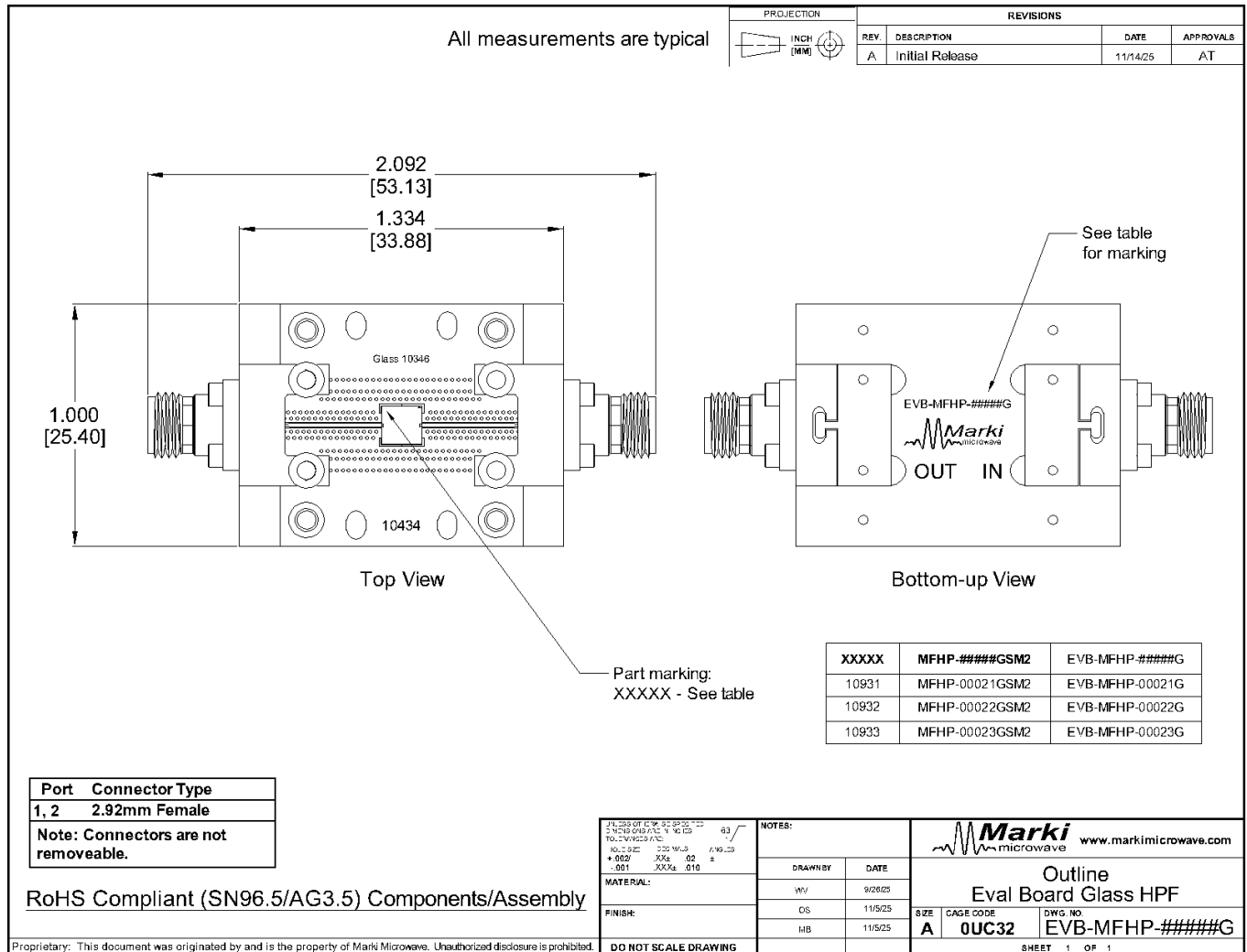
Passive Glass 0.5 GHz Surface Mount Highpass Filter

Footprint Image

Download : [Footprint Drawing](#)



Evaluation Board - Outline Drawing



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