Sales: 408-778-9952 | General: 408-778-4200 | Fax: 408-778-4300
Sales & Customer Support: sales@markimicrowave.com
Tech Support: support@markimicrowave.com

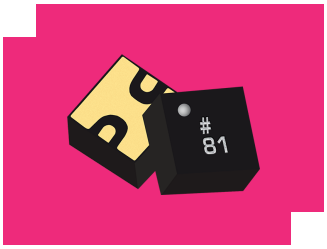
MFHP-00031CSP1

Passive GaAs MMIC 13.3 GHz Highpass Filter

DEVICE OVERVIEW

General Description

The MFHP-00031CSP1 MMIC surface mount highpass filter is an ideal solution for extremely small form factor, high rejection filtering. The MFHP-00031CSP1 features a 13.3 GHz 3 dBc cutoff and 17 dB passband return 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 MFHP-00031CSP1 is available as a 1.5x1.5 mm CSP. Low unit to unit variation allows for accurate simulations using the provided S2P file.



Download s-parameters here

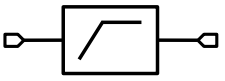
Features

- Low Passband Insertion Loss with Fast Roll-off
- 17 dB Return Loss
- High Stop Band Suppression
- This product embodies Marki Microwave's U.S. Pat. 11,869,858.

Applications

N/A

Functional Block Diagram



Part Ordering Options

Part Number	Description	Package	Green Status	Product Lifecycle	Export Classification
MFHP-00031CSP1	Passive GaAs MMIC 13.3 GHz Highpass Filter	CSP1	RoHS REACH	Released	EAR99
EVB-MFHP-00031	Evaluation Board, Passive GaAs MMIC 13.3 GHz Highpass Filter	EVB	RoHS REACH	Released	EAR99

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Revision History

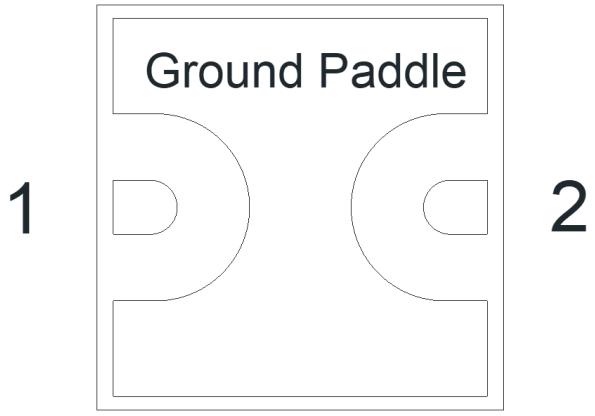
Revision Code	Revision Date	Comment
-	2026-08-14	Initial Release

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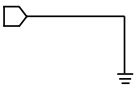
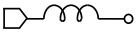
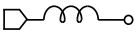
Port Configuration and Functions

Port Diagram

A top-down x-ray view of the MFHP-00031CSP1 package outline drawing is shown below.



Port Functions

Port	Function	Description	DC Equivalent Circuit
Ground Paddle	Ground	CSP package ground path is provided through the ground paddle and should be connected to RF ground.	
Pin 1	Input/Output	Pin 1 is DC open to ground.	
Pin 2	Input/Output	Pin 2 is DC open to ground.	

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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	250 to < 500 Volts	HBM Class 1A
Weight	Package name: CSP1	0.04g
Dimensions	-	1.50 x 1.50 mm
Moisture Sensitivity Level	-	MSL 3

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Electrical Specifications

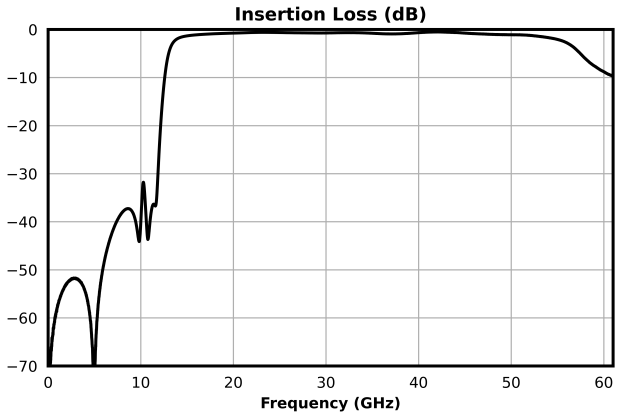
The electrical specifications apply at TA=+25°C in a 50Ω system. Min and Max limits are guaranteed at TA=+25°C.

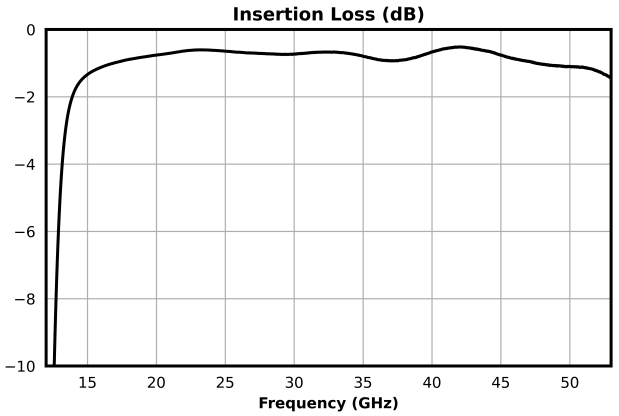
Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
1 dBc Passband	Temp = 25°C	14.53	-	-	-	-	GHz
3 dBc Passband	Temp = 25°C	13.27	-	-	-	-	GHz
30 dBc Rejection Point	Temp = 25°C	11.85	-	-	-	-	GHz
Insertion Loss @ fc	Temp = 25°C	-	-	-	0.9	-	dB
Passband Return Loss	Temp = 25°C	-	-	-	17	-	dB
Group Delay	Temp = 25°C	-	-	-	34	-	ps

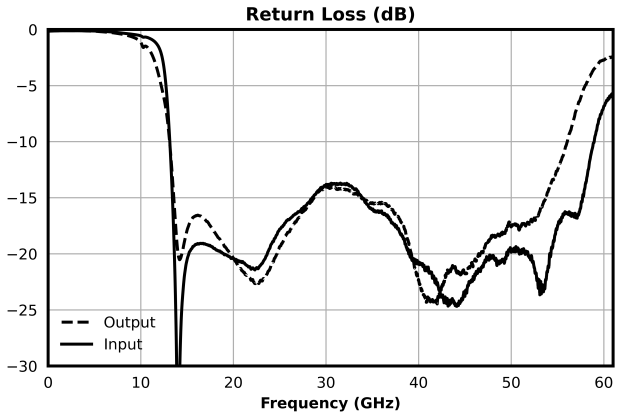
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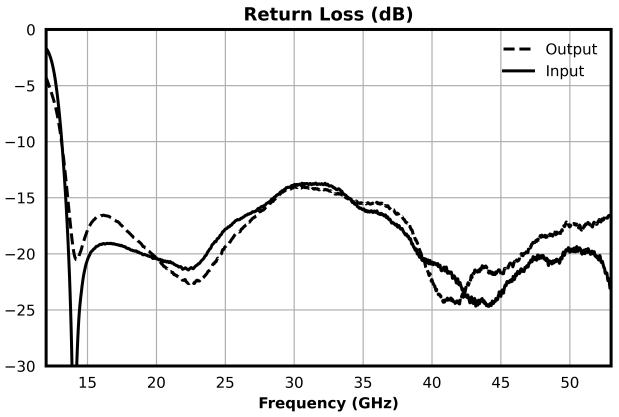
Typical performance is de-embedded from evaluation board using automatic fixture removal.

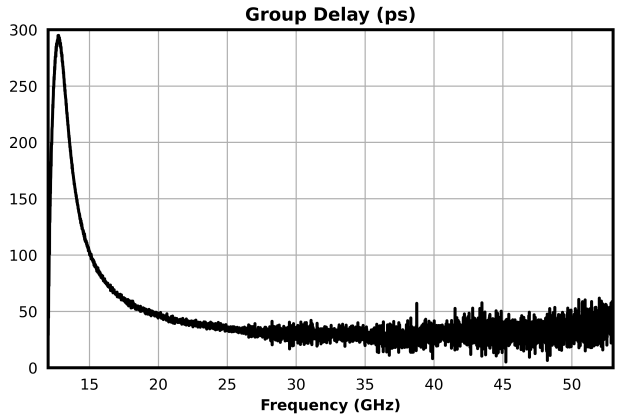
Typical Performance Plot











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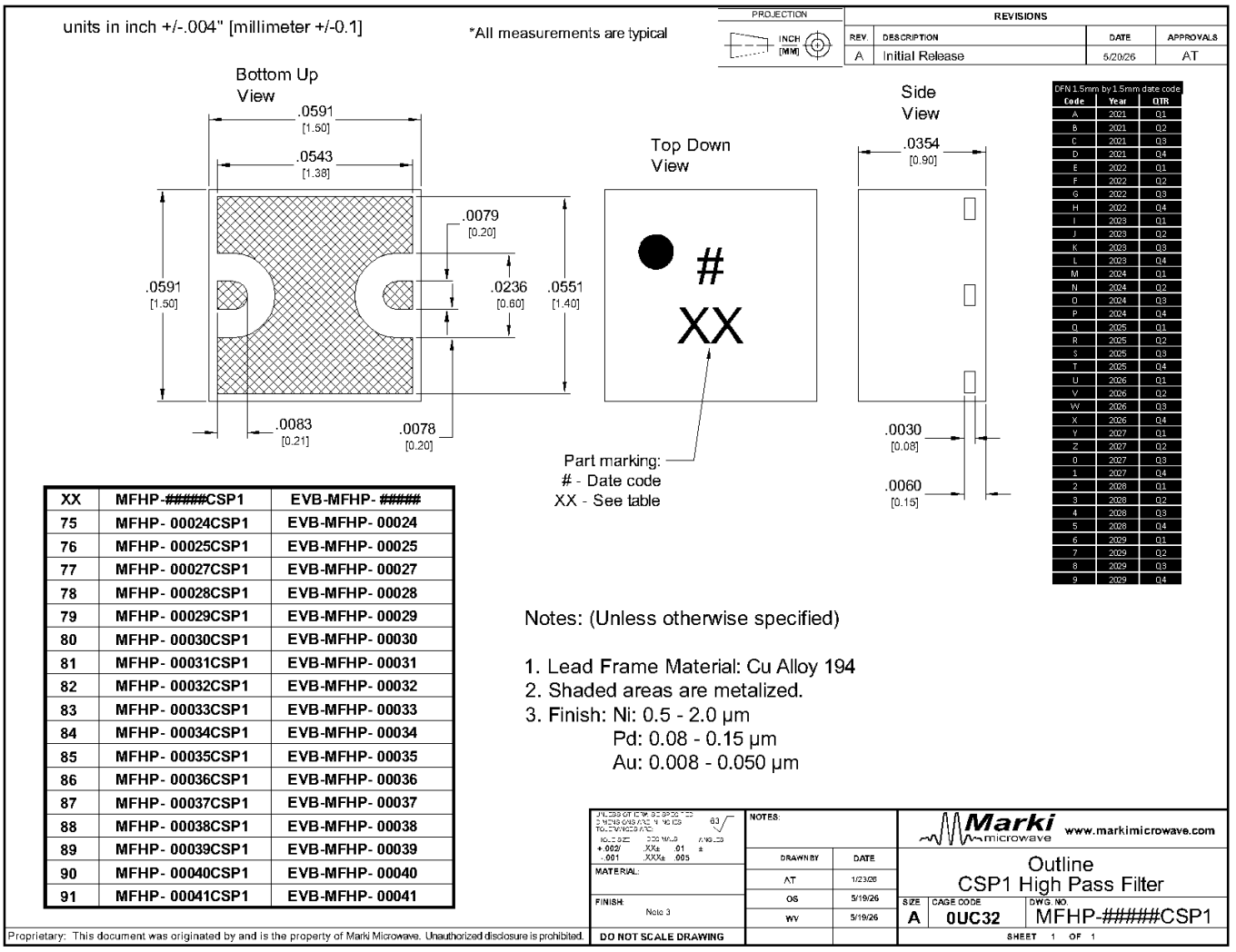
MFHP-00031CSP1

Passive GaAs MMIC 13.3 GHz Highpass Filter

Mechanical Data

Outline Drawing

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

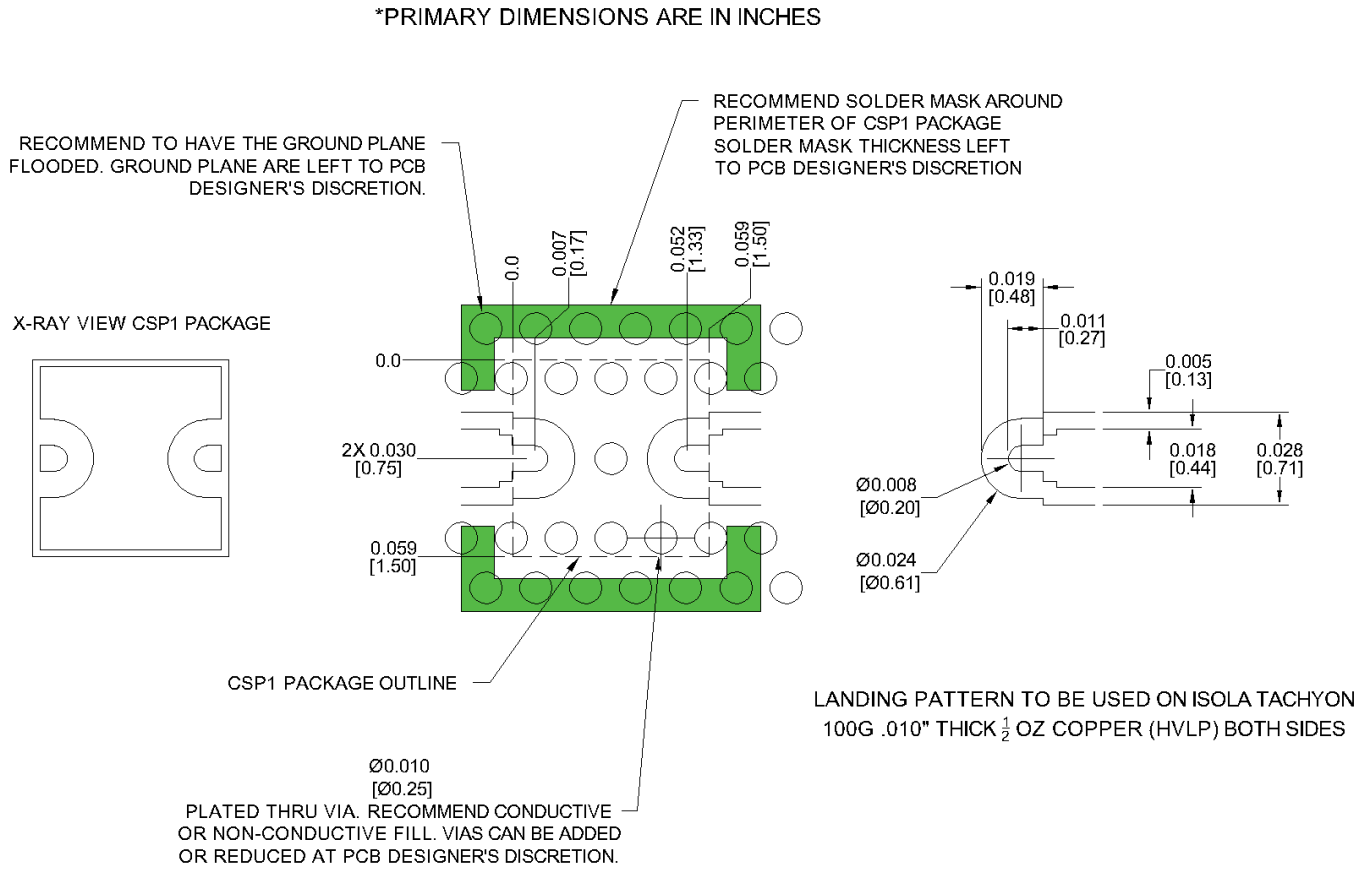


XX	MFHP-#####CSP1	EVB-MFHP- #####
75	MFHP- 00024CSP1	EVB-MFHP- 00024
76	MFHP- 00025CSP1	EVB-MFHP- 00025
77	MFHP- 00027CSP1	EVB-MFHP- 00027
78	MFHP- 00028CSP1	EVB-MFHP- 00028
79	MFHP- 00029CSP1	EVB-MFHP- 00029
80	MFHP- 00030CSP1	EVB-MFHP- 00030
81	MFHP- 00031CSP1	EVB-MFHP- 00031
82	MFHP- 00032CSP1	EVB-MFHP- 00032
83	MFHP- 00033CSP1	EVB-MFHP- 00033
84	MFHP- 00034CSP1	EVB-MFHP- 00034
85	MFHP- 00035CSP1	EVB-MFHP- 00035
86	MFHP- 00036CSP1	EVB-MFHP- 00036
87	MFHP- 00037CSP1	EVB-MFHP- 00037
88	MFHP- 00038CSP1	EVB-MFHP- 00038
89	MFHP- 00039CSP1	EVB-MFHP- 00039
90	MFHP- 00040CSP1	EVB-MFHP- 00040
91	MFHP- 00041CSP1	EVB-MFHP- 00041

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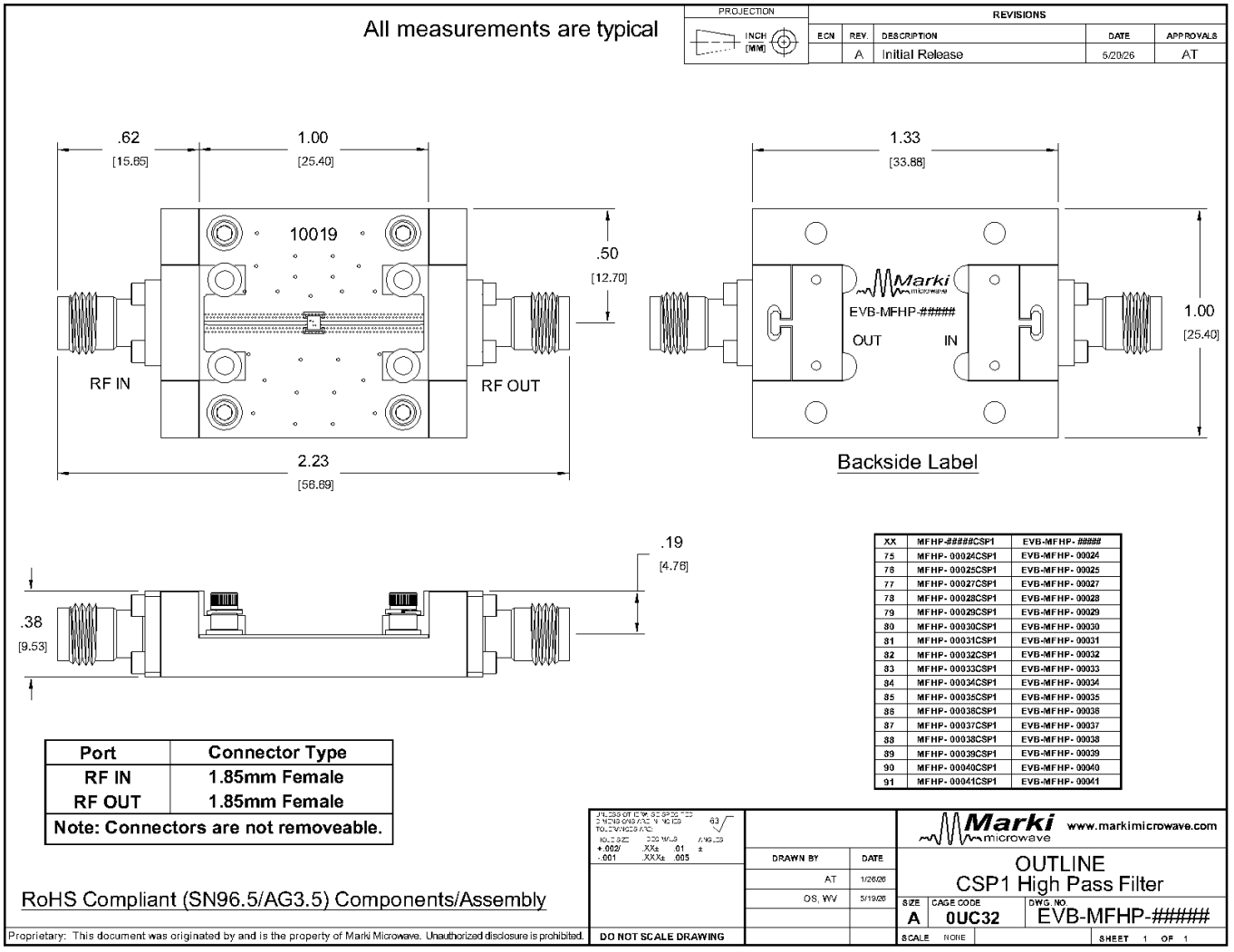
Footprint Image

Download : Footprint Drawing



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Evaluation Board - Outline Drawing



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