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

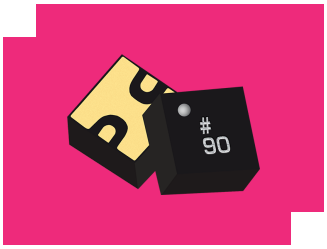
# MFHP-00040CSP1

## Passive GaAs MMIC 29.4 GHz Highpass Filter

## DEVICE OVERVIEW

### General Description

The MFHP-00040CSP1 MMIC surface mount highpass filter is an ideal solution for extremely small form factor, high rejection filtering. The MFHP-00040CSP1 features a 29.4 GHz 3 dBc cutoff and 21 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-00040CSP1 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

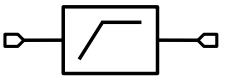
### Features

- Low Passband Insertion Loss with Fast Roll-off
- 21 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-00040CSP1 | Passive GaAs MMIC 29.4 GHz Highpass Filter | CSP1 | RoHS REACH | Released | EAR99 |
| EVB-MFHP-00040 | Evaluation Board, Passive GaAs MMIC 29.4 GHz Highpass Filter | EVB | RoHS REACH | Released | EAR99 |


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## Revision History

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

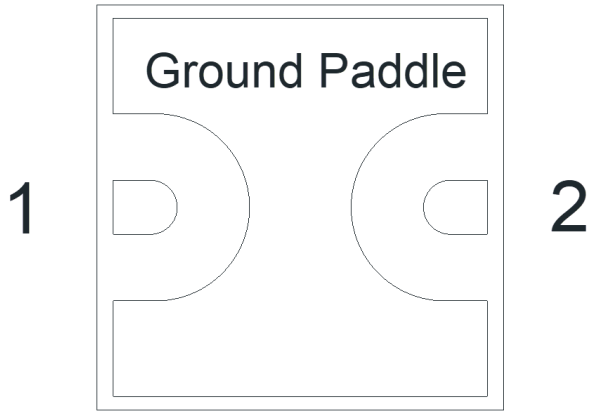


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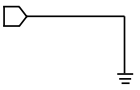
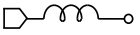
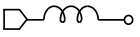
## Port Configuration and Functions

### Port Diagram

A top-down x-ray view of the MFHP-00040CSP1 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 | 32.8 | - | - | - | - | GHz |
| 3 dBc Passband | Temp = 25°C | 29.4 | - | - | - | - | GHz |
| 30 dBc Rejection Point | Temp = 25°C | 26.8 | - | - | - | - | GHz |
| Insertion Loss @ fc | Temp = 25°C | - | - | - | 0.6 | - | dB |
| Passband Return Loss | Temp = 25°C | - | - | - | 21 | - | dB |
| Group Delay | Temp = 25°C | - | - | - | 27 | - | ps |


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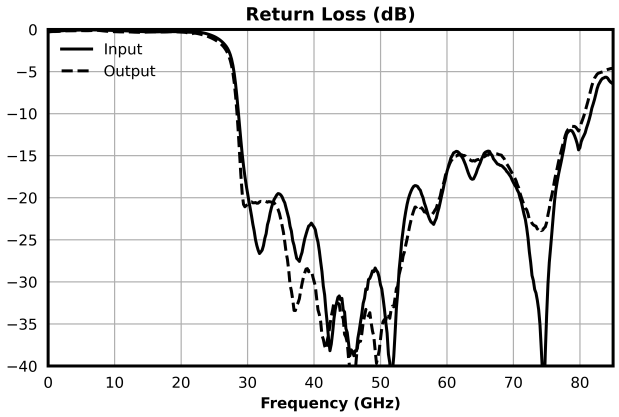
Typical performance is de-embedded from evaluation board using automatic fixture removal.

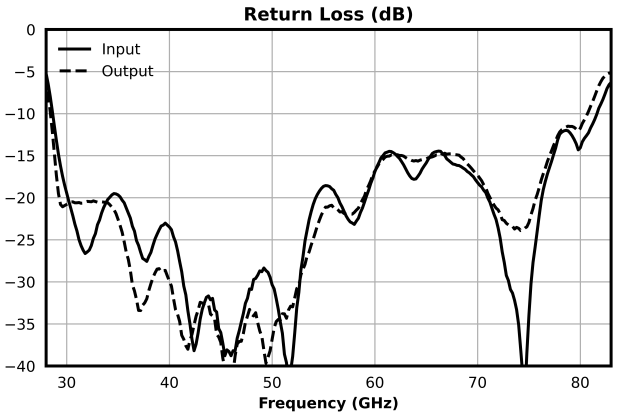
## Typical Performance Plot

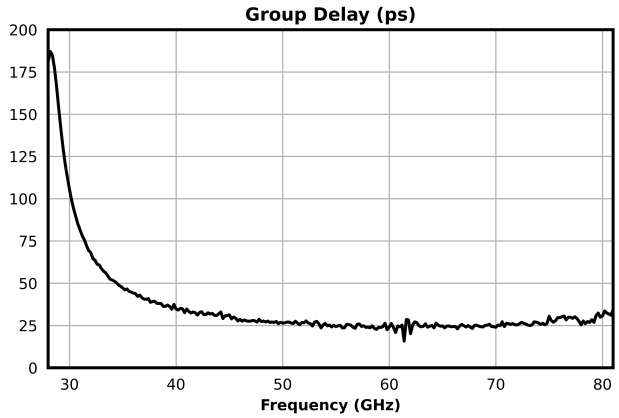











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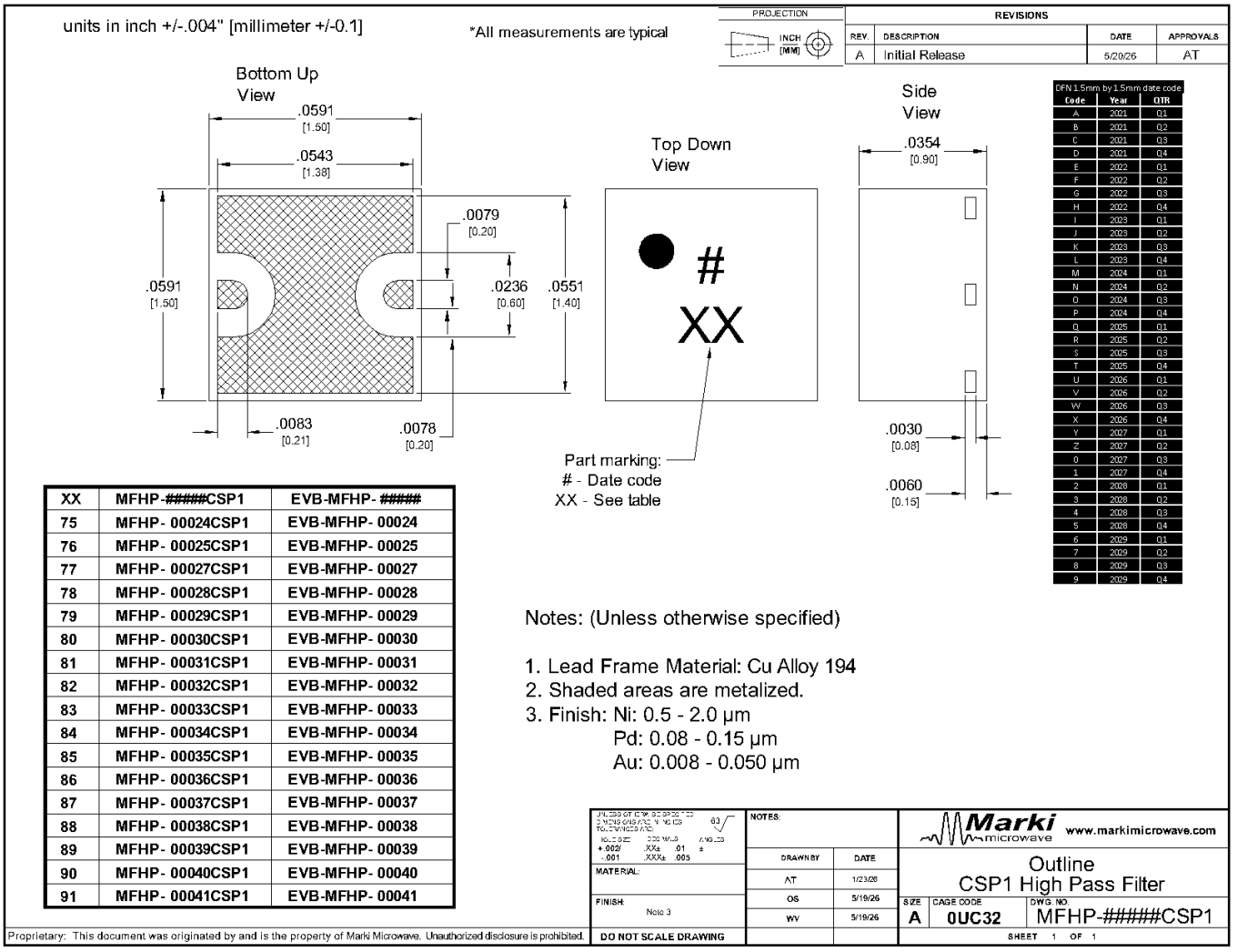
# MFHP-00040CSP1

## Passive GaAs MMIC 29.4 GHz Highpass Filter

## Mechanical Data

## Outline Drawing

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



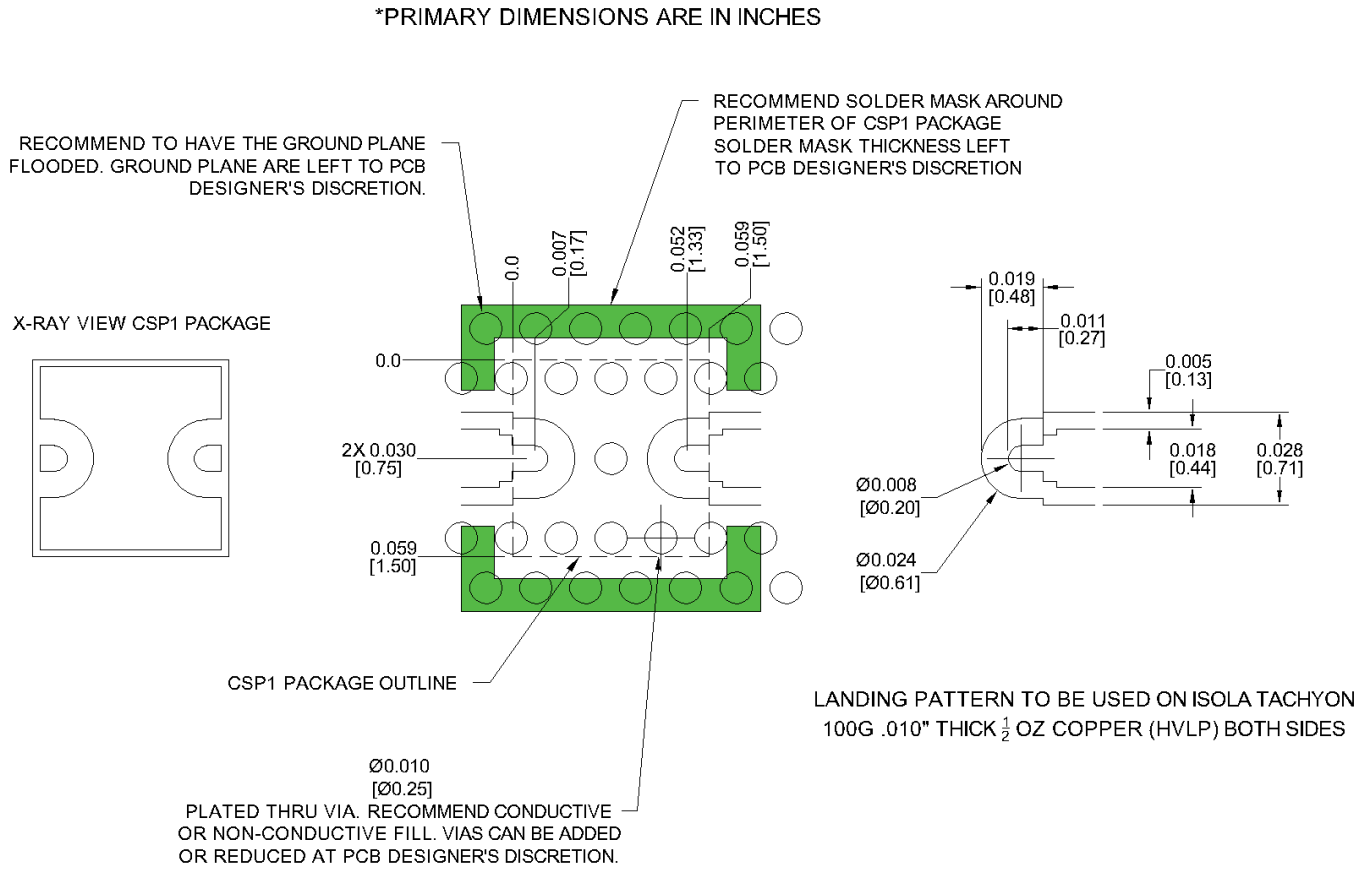

| XX | MFHP-#####CSP1 | EVB-MFHP- ##### |
|---|---|---|
| 75 | MFHP- 00024CSP1 | EVB-MFHP- 00024 |
| 76 | MFHP- 00025CSP1 | EVB-MFHP- 00025 |
| 77 | MFHP- 00027CSP1 | EVB-MFHP- 00027 |
| 78 | MFHP- 00028CSP1 | EVB-MFHP- 00028 |
| 79 | MFHP- 00029CSP1 | EVB-MFHP- 00029 |
| 80 | MFHP- 00030CSP1 | EVB-MFHP- 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

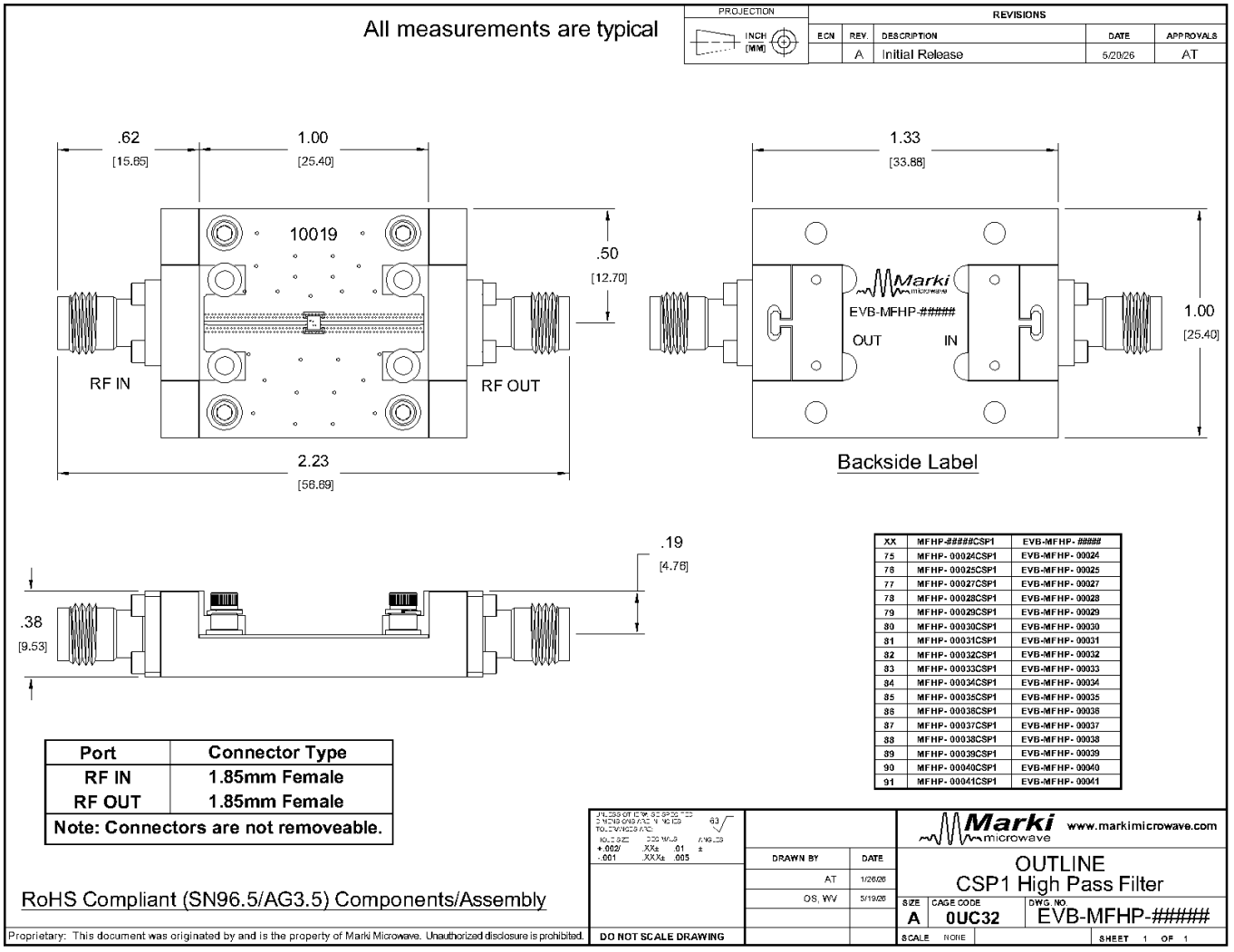
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## Evaluation Board - Outline Drawing






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