

ATN04-0040PSM

4dB DC-40GHz MMIC Attenuator

DEVICE OVERVIEW

General Description

The ATN04-0040PSM is a surface mount GaAs MMIC 4dB attenuator in a DFN package. This attenuator is an ideal solution for attenuating a signal and can be used in a wide range of applications. The compact DFN package allows for extreme miniaturization of SMT footprint making this attenuator suitable for low SWaP applications. GaAs MMIC technology provides consistent unit-to-unit performance in a small, low-cost form factor. A 50-ohm match is maintained over the entire operating frequency range.



[Download s-parameters here](#)

Features

- Small 1.3 x 2.0 mm package size
- 4dB attenuation from DC to 40 GHz
- 21dB typical return loss over operating band
- Low SWaP

Applications

- 5G
- Test Equipment
- Precision Characterization
- Airborne Applications
- Amplitude Matching
- High Channel Count Systems

Functional Block Diagram



Part Ordering Options

| Part Number | Description | Package | Green Status | Product Lifecycle | Export Classification |
|-----------------|--|---------|---------------|-------------------|-----------------------|
| ATN04-0040PSM | 4dB DC-40GHz MMIC Attenuator | DFN | RoHS REACH | Released | EAR99 |
| EVB-ATN04-0040P | Evaluation Board, 4dB DC-40 GHz Attenuator | EVB | REACH RoHS | Released | EAR99 |

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Revision History

| Revision Code | Revision Date | Comment |
|---------------|---------------|---------------------------|
| - | 2024-02-29 | Datasheet Initial Release |
| A | 2025-11-20 | ESD Information |

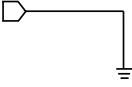
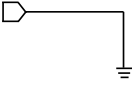
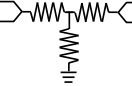
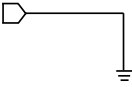
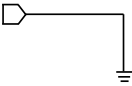
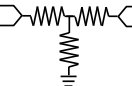
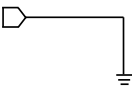
Port Configuration and Functions

Port Diagram

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



Port Functions

| Port | Function | Description | DC Equivalent Circuit |
|-------|------------------|---|---|
| GND | Ground | DFN package ground path is provided through the ground paddle. |  |
| Pin 1 | Non-connect (NC) | Pin 1 is not connected internally and can be tied to RF ground. |  |
| Pin 2 | Input/Output | Pin 2 and Pin 5 are DC connected to each other and ground through a T-network of resistors. |  |
| Pin 3 | Non-connect (NC) | Pin 3 is not connected internally and can be tied to RF ground. |  |
| Pin 4 | Non-connect (NC) | Pin 4 is not connected internally and can be tied to RF ground. |  |
| Pin 5 | Input/Output | Pin 2 and Pin 5 are DC connected to each other and ground through a T-network of resistors. |  |
| Pin 6 | Non-connect (NC) | Pin 6 is not connected internally and can be tied to RF ground. |  |

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 |
|-------------------------------|----------------|------|
| DC Current | 100 | mA |
| Maximum Operating Temperature | 100 | °C |
| Maximum Storage Temperature | 125 | °C |
| Minimum Operating Temperature | -55 | °C |
| Minimum Storage Temperature | -65 | °C |
| RF Power Handling | 2 | W |

Package Information

| Parameter | Details | Rating |
|----------------------------|----------------------|--------------|
| ESD | 1000 to < 2000 Volts | HBM Class 1C |
| Dimensions | - | 2.0 x 1.3 mm |
| Moisture Sensitivity Level | - | MSL 1 |

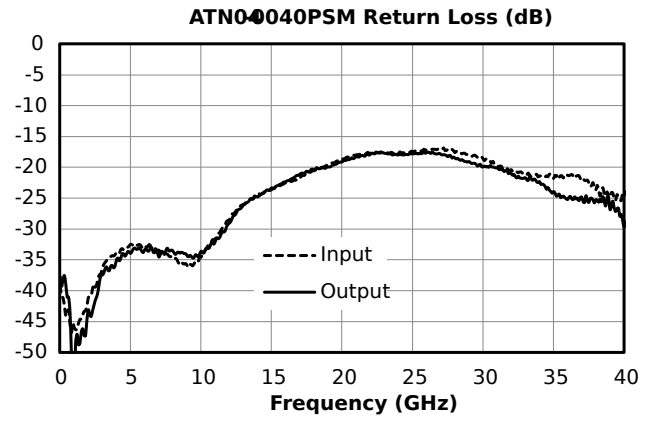
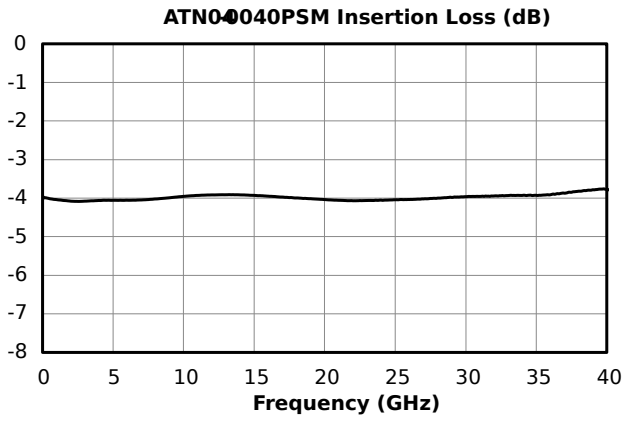
Electrical Specifications

The electrical specifications apply at TA=+25°C in a 50Ω system. Typical data shown is for the attenuator in a PSM package with a sine wave input applied to pin 2.

| Parameter | Test Conditions | Minimum Frequency (GHz) | Maximum Frequency (GHz) | Min | Typ | Max | Unit |
|----------------------|-----------------|-------------------------|-------------------------|-----|-----|-----|------|
| Attenuation | - | 0 | 40 | - | 4 | - | dB |
| Attenuation Accuracy | - | 0 | 40 | - | 0.3 | - | dB |
| Impedance | - | 0 | 40 | - | 50 | - | Ω |
| Return Loss | - | 0 | 40 | 12 | 21 | - | dB |

Typical Performance Plots

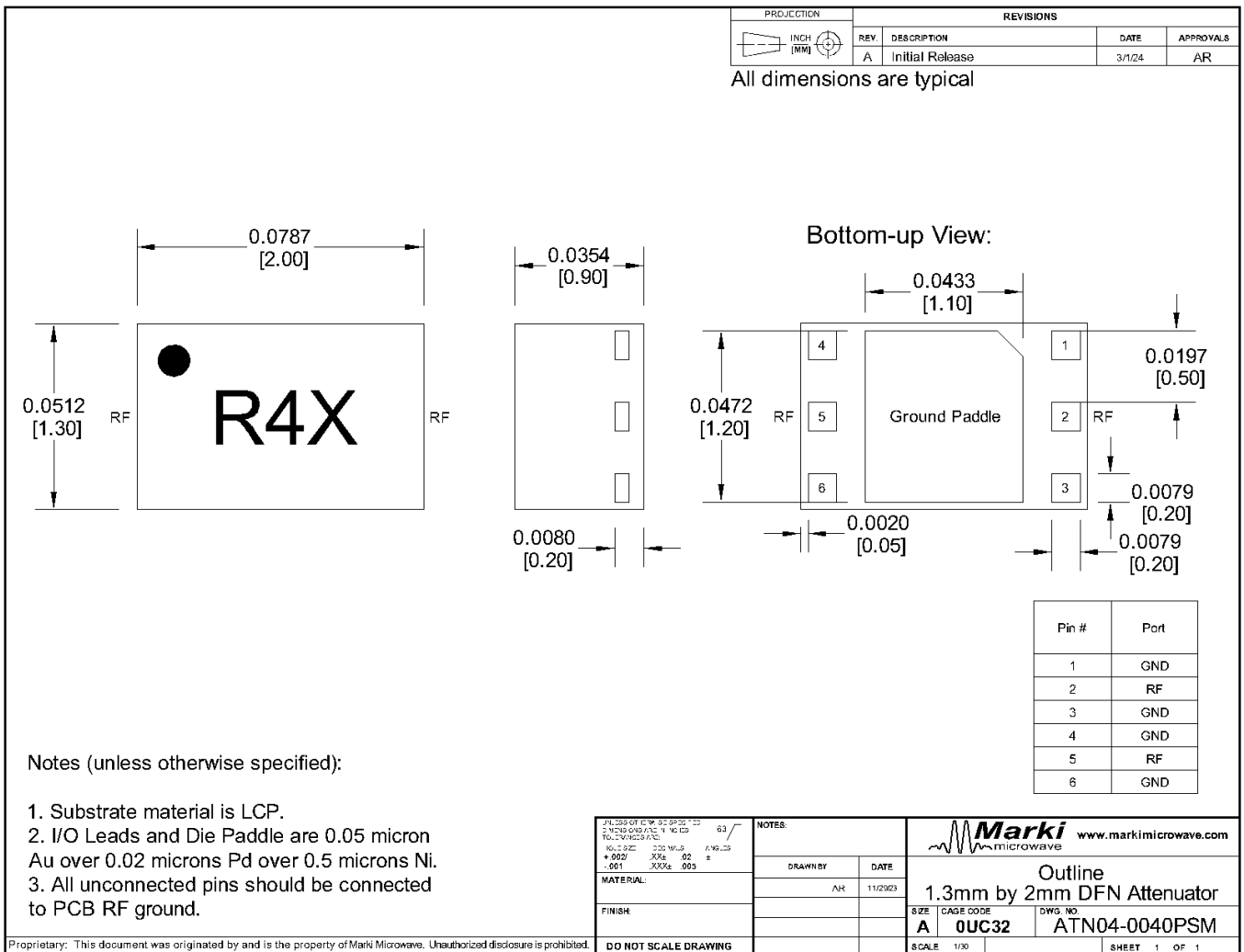
Measured data is de-embedded from evaluation fixture using AFR.



Mechanical Data

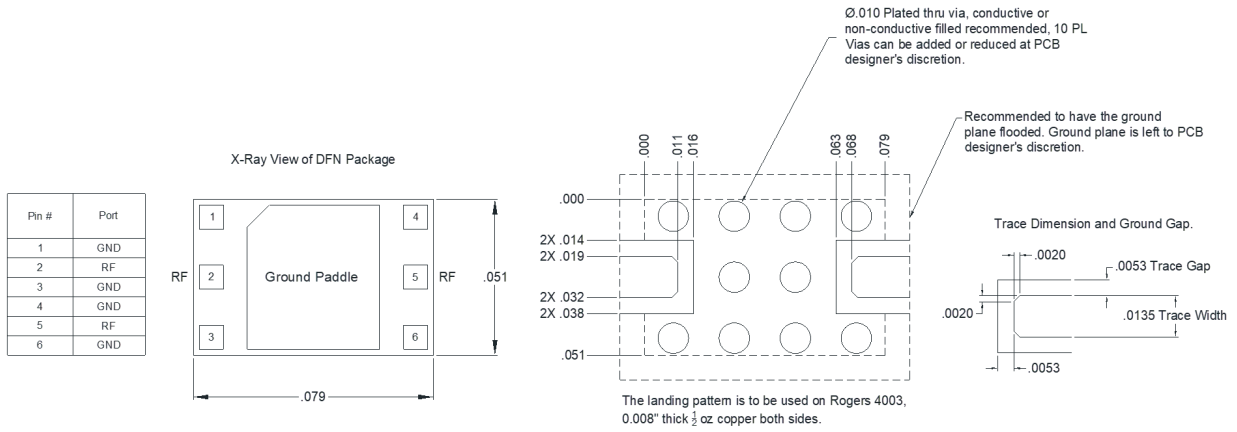
Outline Drawing

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



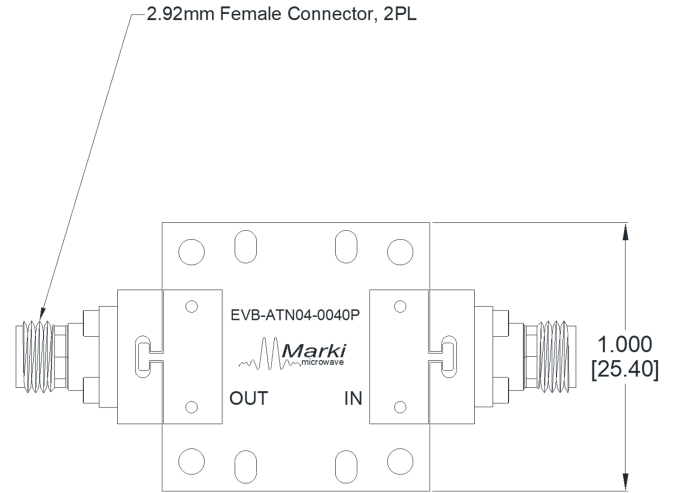
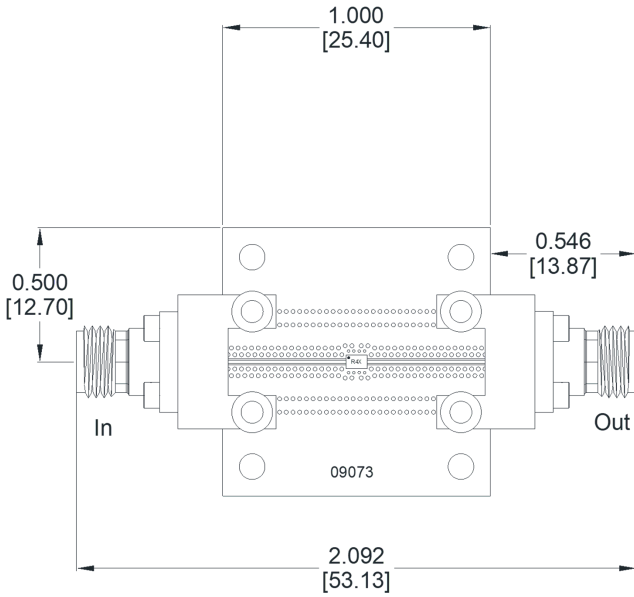
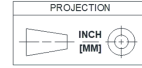
Footprint Image

Download : [Footprint Drawing](#)



Evaluation Board - Outline Drawing

All measurements are typical



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