

# ATN06-00110-2W

## GaAs MMIC DC to 110GHz Attenuator

### DEVICE OVERVIEW

#### General Description

The ATN06-00110 is a family of precision GaAs MMIC fixed attenuators. These attenuators are an ideal solution for attenuating a signal and they can be used in a wide range of applications. They are ideal for test equipment’s protection and signal overload prevention in various RF circuitry. A 50-ohm match is maintained over the entire operating frequency range.



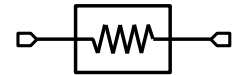
#### Features

- 6dB attenuation DC to 110GHz
- Return loss: typical 20 dB over the entire band
- Serialized for traceability

#### Applications

- 5G
- Automotive Radar
- Test Equipment
- Amplitude Matching
- Precision Characterization
- Wireless Backhaul

#### Functional Block Diagram



#### Part Ordering Options

Part Number	Description	Package	Connectors	Green Status	Product Lifecycle	Export Classification
<u>ATN06-00110</u>	GaAs MMIC DC to 110GHz Attenuator	M	<u>Standard</u>	RoHS REACH	Released	EAR99
ATN06-00110-2W	GaAs MMIC DC to 110GHz Attenuator	M	<u>Standard</u>	RoHS REACH	Released	EAR99
<u>ATN06-00110-3W</u>	GaAs MMIC DC to 110GHz Attenuator	M	<u>Standard</u>	RoHS REACH	Released	EAR99

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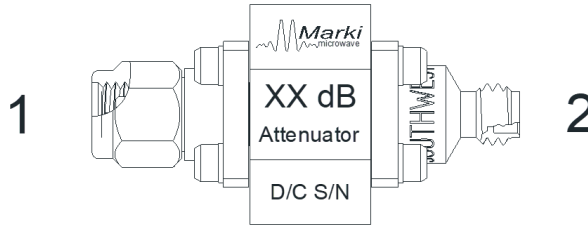
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**Revision History**

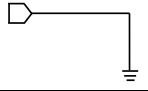
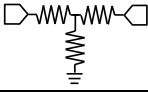
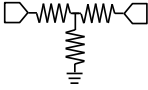
Revision Code	Revision Date	Comment
-	2020-10-01	Initial Datasheet Release
A	2020-11-01	Updated Outline Drawings

**Port Configuration and Functions**

**Port Diagram**



**Port Functions**

Port	Function	Connector Type	Description	Equivalent Circuit for Package
GND	Ground	-	M package ground provided through metal housing and outer coax conductor.	
Port 1	Input/Output	-	Port 1 and Port 2 are DC connected to each other and ground through a T-network of resistors.	
Port 2	Input/Output	-	Port 1 and Port 2 are DC connected to each other and ground through a T-network of resistors.	

## 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, any pin	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

Reliability ratings are individual, a combination of stresses (DC current, RF power, and heat) may cause premature failure).

### Package Information

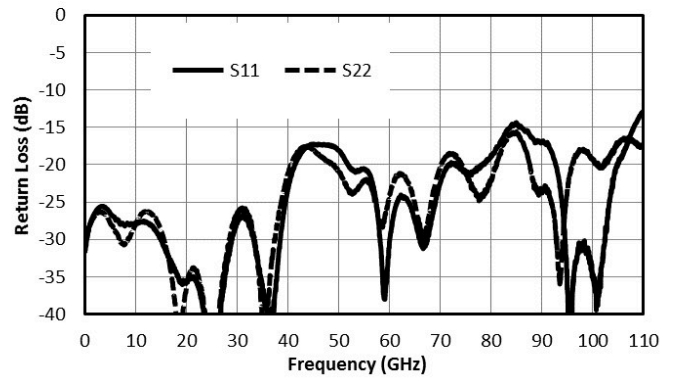
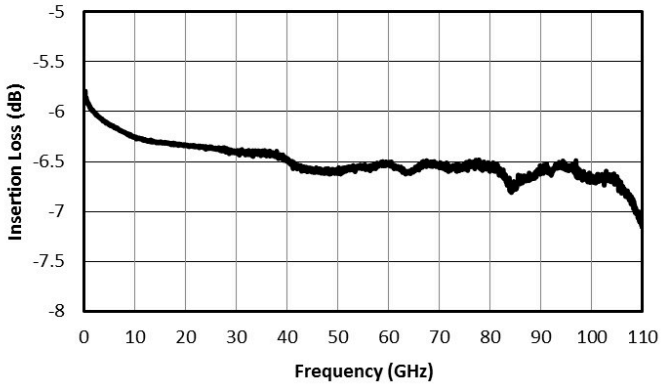
Parameter	Details	Rating
ESD	250 to < 500 Volts	HBM Class 1A
Weight	Package name: M	14.2g
Dimensions	-	14.30 x 27.79 mm

### Electrical Specifications

The electrical specifications apply at TA=+25°C in a 50Ω system. Typical data shown is for the attenuator in a M package with a sine wave input applied to port 1.

Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
Attenuation	-	0	110	-	6.5	-	dB
Attenuation Accuracy	-	100	110	-	1.2	-	dB
Attenuation Accuracy	-	0	81	-	0.4	-	dB
Attenuation Accuracy	-	81	100	-	1	-	dB
Impedance	-	0	110	-	50	-	Ω
Return Loss	-	0	81	-	22	-	dB
Return Loss	-	81	100	-	20	-	dB
Return Loss	-	100	110	-	15	-	dB

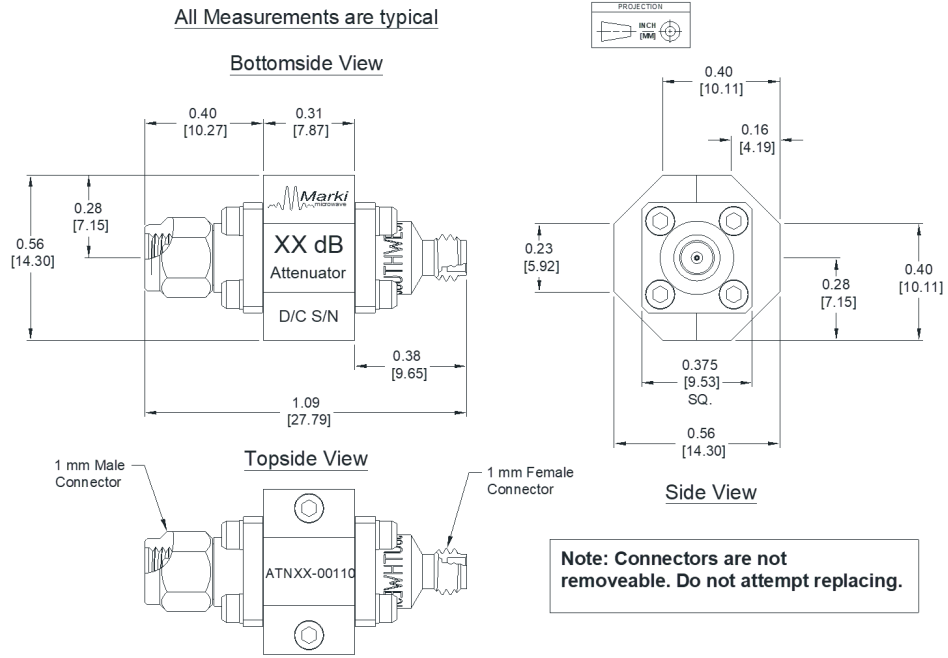
**Typical Performance Plots**



**Mechanical Data**

**Outline Drawing**

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



Note1: RoHS Compliant Assembly

Note2: Use 9/16 fixed wrench to hold in place body of M housing while tightening connectors to 25Ncm

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1. All measurements are typical.
2. Attach 1.0mm connectors with 45 N-cm (4 in-lb) torque wrench.

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