

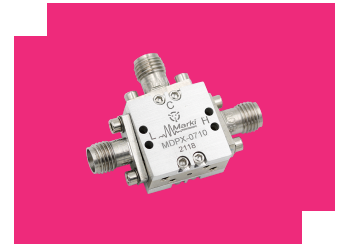
# MDPX-0710

## Passive MMIC 7 GHz Diplexer

### DEVICE OVERVIEW

#### General Description

The MDPX-0710 is a broadband passive MMIC diplexer, a combination high pass and low pass filter, capable of multiplexing low frequency DC to 7 GHz and high frequency 10 to 26.5 GHz signals. 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. Low unit to unit variation allows for accurate simulations using the provided S3P file taken from measured production units.



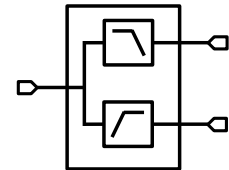
#### Features

- 8.5 GHz Crossover Point
- Low <1dB typical Insertion Loss in Pass band
- High Stop Band Suppression
- RoHS Compliant

#### Applications

- Reflectionless Filter Applications
- RF Transceivers

#### Functional Block Diagram



#### Part Ordering Options

Part Number	Description	Package	Connectors	Green Status	Product Lifecycle	Export Classification
MDPX-0710	Passive MMIC 7 GHz Diplexer	UB	<u>Standard</u>	REACH RoHS	Released	EAR99

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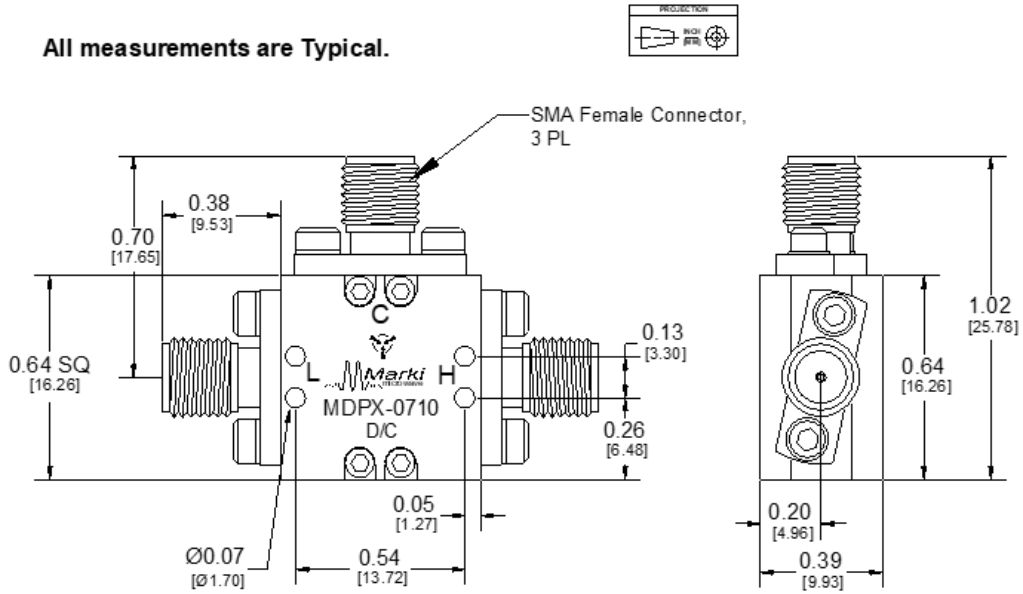
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**Revision History**

Revision Code	Revision Date	Comment
-	2021-05-01	Datasheet initial Release

**Port Configuration and Functions**

**Port Diagram**



**Port Functions**

Port	Function	Connector Type	Description	Equivalent Circuit for Package
Port 1	Low Pass Filter	SMAF	-	-
Port 2	Common/Input	SMAF	-	-
Port 3	High Pass Filter	SMAF	-	-

**Specifications**

**Absolute Maximum Ratings**

Parameter	Maximum Rating	Unit
Maximum Storage Temperature	125	°C
Maximum Survivable Operating Temperature	125	°C
Minimum Storage Temperature	-65	°C
Minimum Survivable Operating Temperature	-65	°C
RF Power Handling	30	dBm
Spec Guaranteed Operating Temperature	25	°C

**Package Information**

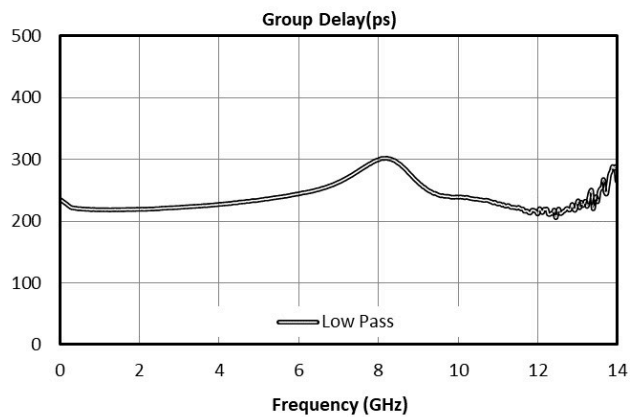
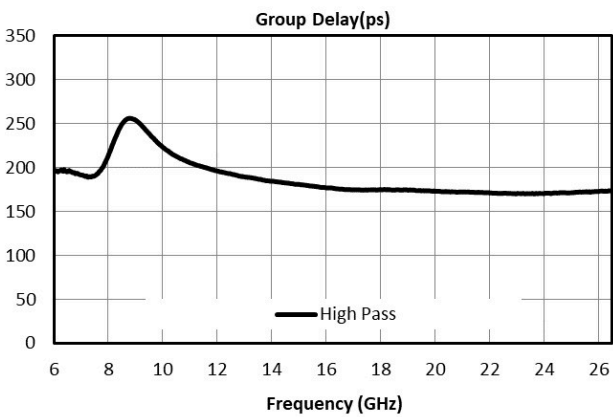
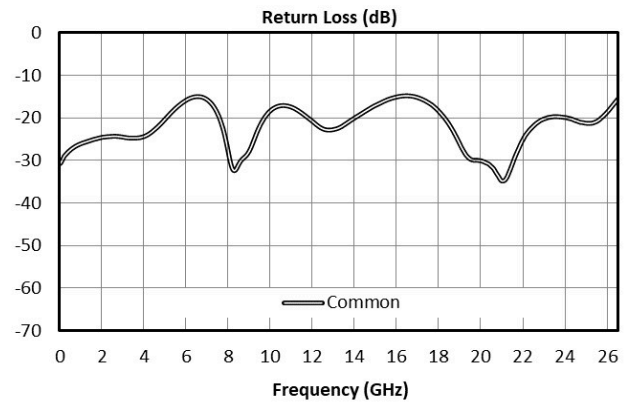
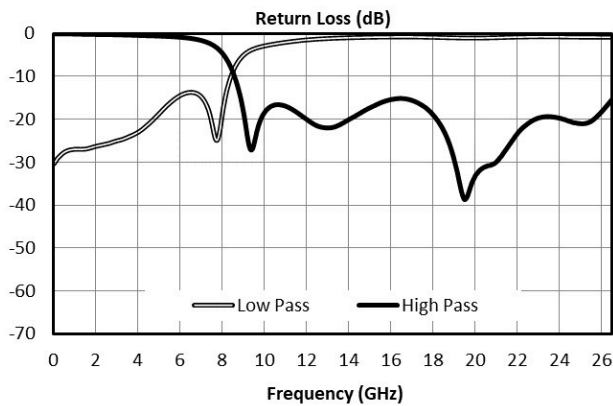
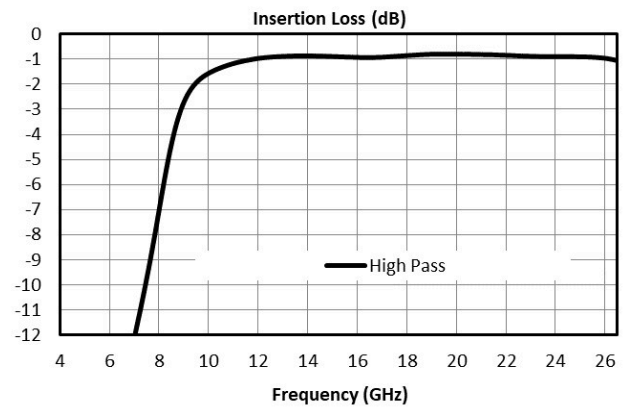
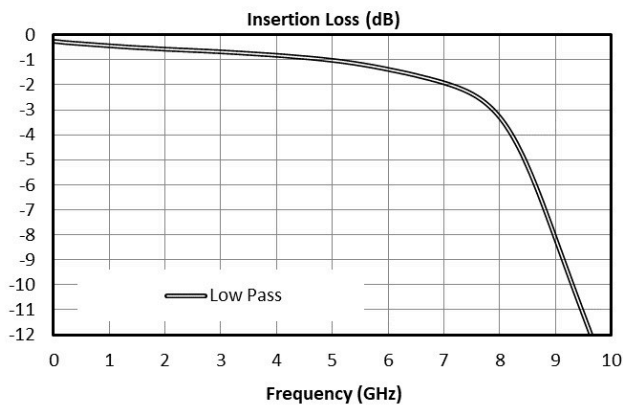
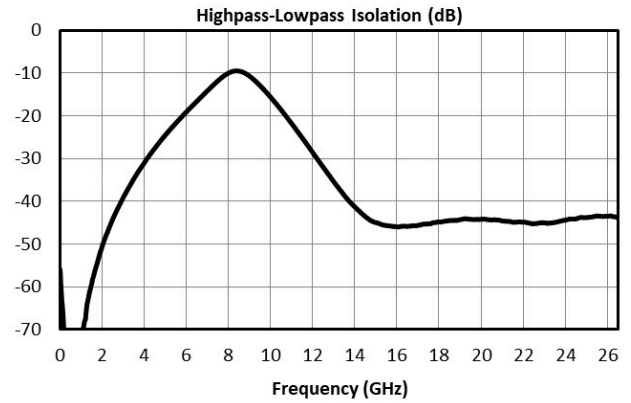
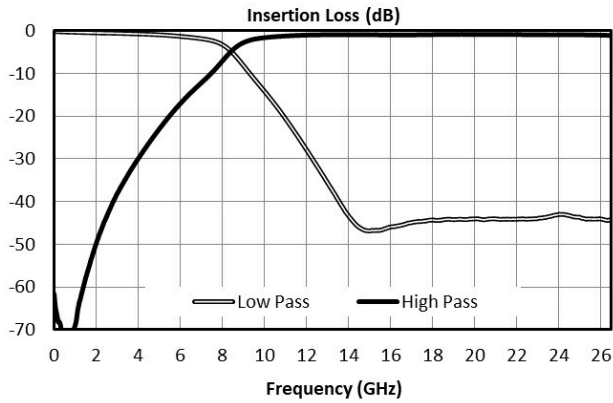
Parameter	Details	Rating
Dimensions	-	16.26x9.93 mm

**Electrical Specifications**

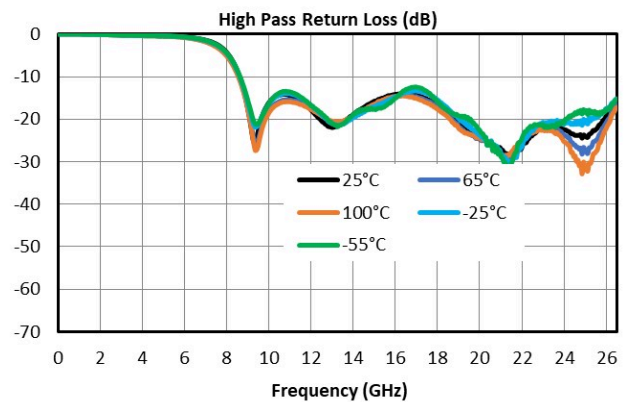
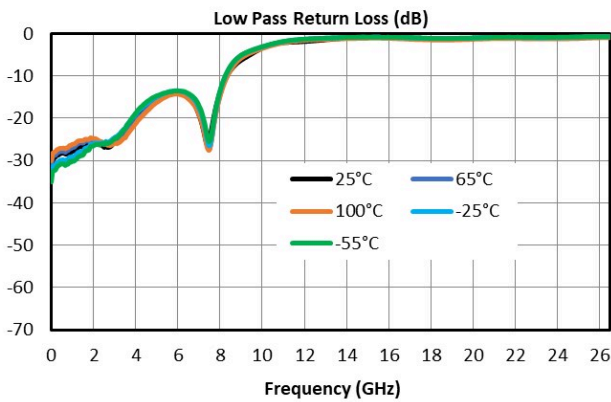
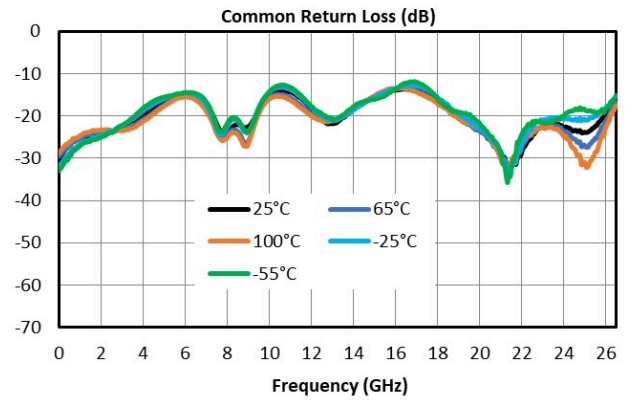
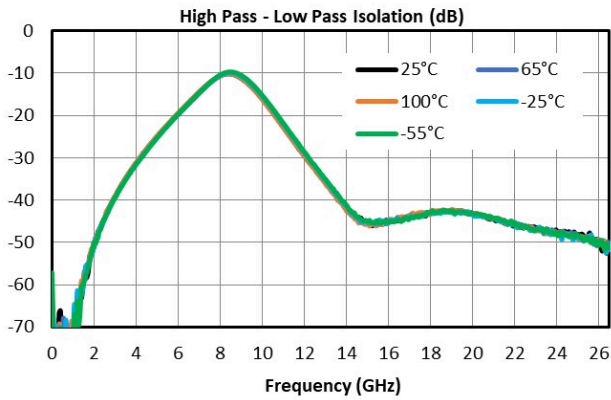
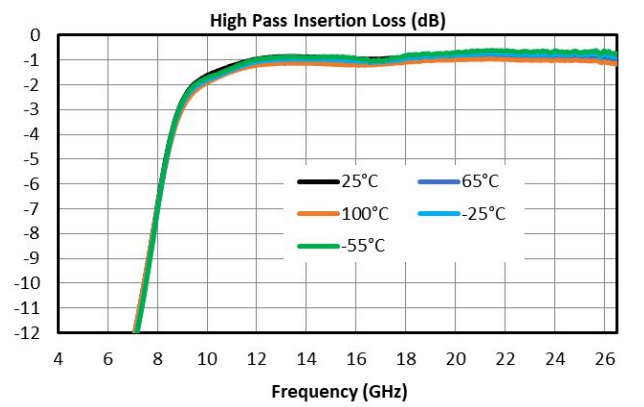
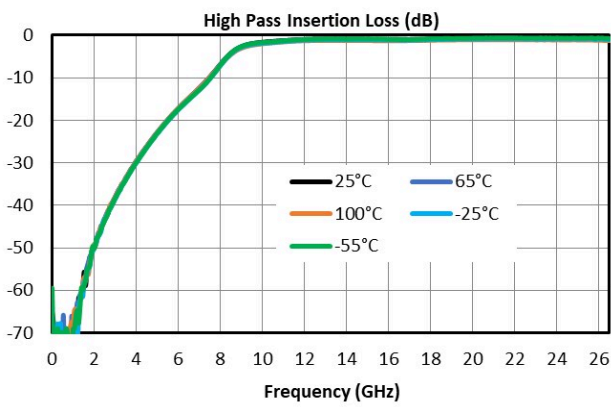
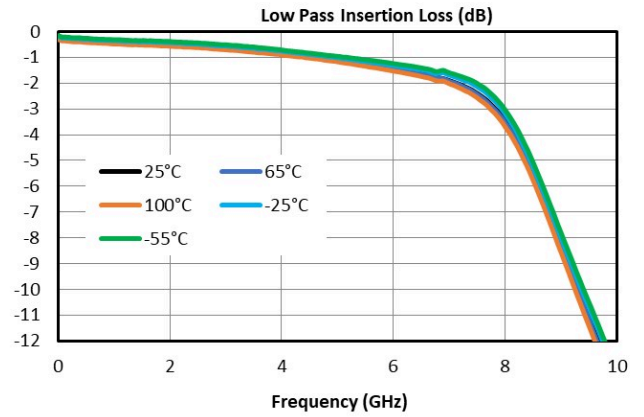
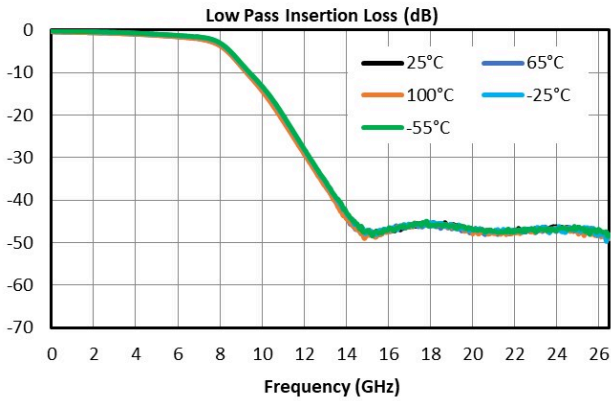
Specifications guaranteed +25°C for UB package, measured in a 50Ω system.

Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
30 dBc Low Pass Rejection Point	DC to 4 GHz	0	4	25	51	-	dB
Common Port Return Loss	10 to 26.5 GHz	10	26.5	10	21	-	dB
Common Port Return Loss	DC to 7 GHz	0	7	10	22	-	dB
High Pass Filter, Pass Band Insertion Loss	10 to 26.5 GHz	10	26.5	-	0.9	-	dB
High Pass Filter, Pass Band Return Loss	10 to 26.5 GHz	10	26.5	10	21	-	dB
Impedance	-	-	-	-	50	-	Ω
Isolation	10 to 14 GHz	10	14	-	28	-	dB
Isolation	14 to 26.5 GHz	14	26.5	35	45	-	dB
Isolation	4 to 7 GHz	4	7	-	20	-	dB
Isolation	DC to 4 GHz	0	4	25	38	-	dB
Low Pass Filter, Pass Band Insertion Loss	DC to 7 GHz	0	7	-	0.85	-	dB
Low Pass Filter, Pass Band Return Loss	DC to 7 GHz	0	7	10	22	-	dB
Low Pass Filter, Stop Band Rejection	14 to 26.5 GHz	14	26.5	30	45	-	dB
High Frequency Passband	-	-	-	10	-	26.5	GHz
Low Frequency Passband	-	-	-	0	-	7	GHz

**Typical Performance Plots**



Typical Performance Plots over temperature

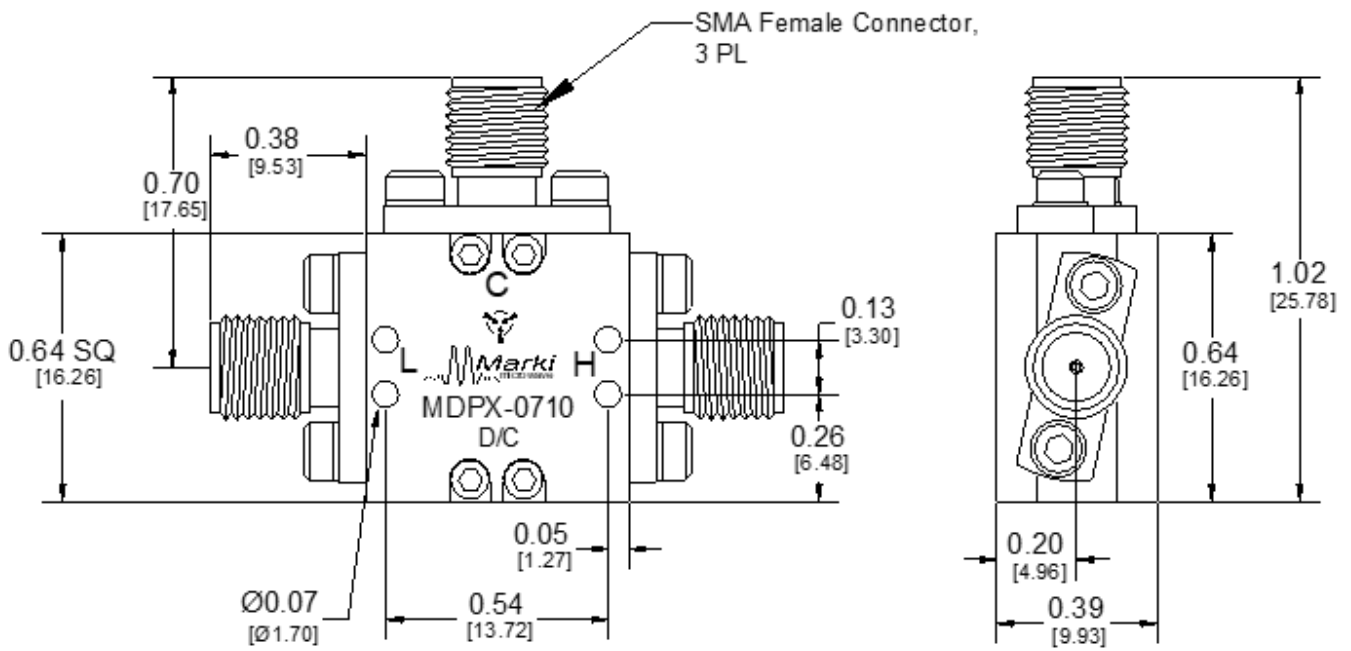


**Mechanical Data**

**Outline Drawing**

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

All measurements are Typical.



## Notes

### DATA SHEET NOTES:

1. Group delay calculated using wrapped phase response.
2. Specifications are subject to change without notice. Contact Marki Microwave for the most recent specifications and data sheets.
3. Catalog circuits are continually improved. Configuration control requires custom model numbers and specifications.

Note: Exposure to maximum rating conditions for extended periods may reduce device reliability. There is no damage to device with only one parameter set at the limit and all other parameters set at or below their nominal value. Exceeding any of the limits listed here may result in permanent damage to the device.

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