

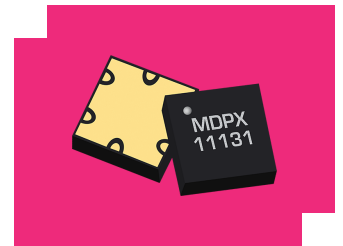
MDPX-00012CSP3

Passive MMIC 10.1 GHz Diplexer

DEVICE OVERVIEW

General Description

The MDPX-00012CSP3 is a MMIC surface mount low pass band pass diplexer featuring a 10.1 GHz crossover frequency. 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 MDPX-00012CSP3 is available as a 3.5x3.5mm CSP3. Low unit to unit variation allows for accurate simulations using the provided S3P file taken from measured production units.



[Download s-parameters here](#)

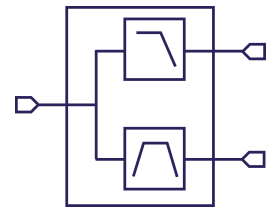
Features

- Low Insertion Loss, ≤ 1.5 dB Typical
- Crossover Point, 10.1 GHz
- Excellent Return Losses, 20 dB Typical at Common
- Crossover Isolation, 11dB Typical

Applications

N/A

Functional Block Diagram



Part Ordering Options

Part Number	Description	Package	Green Status	Product Lifecycle	Export Classification
MDPX-00012CSP3	Passive MMIC 10.1 GHz Diplexer	CSP3	RoHS REACH	Released	EAR99
<u>EVB-MDPX-00012</u>	Evaluation Board, Passive MMIC 10.1 GHz Diplexer	EVB	RoHS REACH	Released	EAR99

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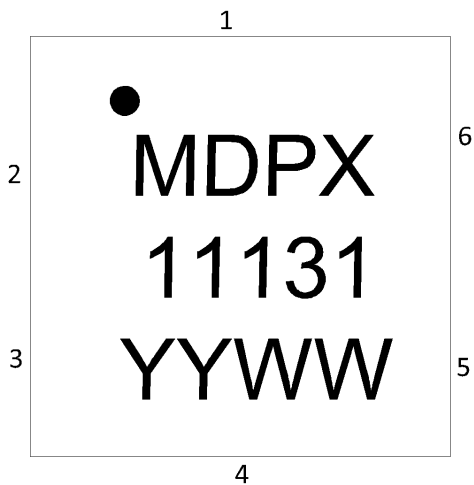
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Revision History

Revision Code	Revision Date	Comment
-	2026-08-12	Initial Release

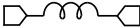
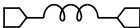
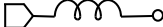
Port Configuration and Functions

Port Diagram



Top Down View

Port Functions

Port	Function	Description	DC Equivalent Circuit
Pin 1	Common/Input	Pin 1 is DC short to Pin 3 and open to GND and Pin 5.	
Pin 3	RF Low Band	Pin 3 is DC short to Pin 1 and open to GND and Pin 5	
Pin 5	RF High Band	Pin 5 is DC open to Pin 1, Pin 3, and GND	

Specifications

Absolute Maximum Ratings

Parameter	Maximum Rating	Unit
DC Current	24	mA
Maximum Operating Temperature	100	°C
Maximum Storage Temperature	125	°C
Minimum Operating Temperature	-55	°C
Minimum Storage Temperature	-65	°C

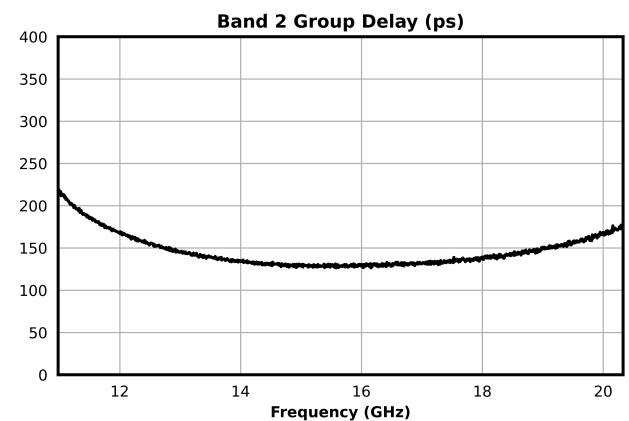
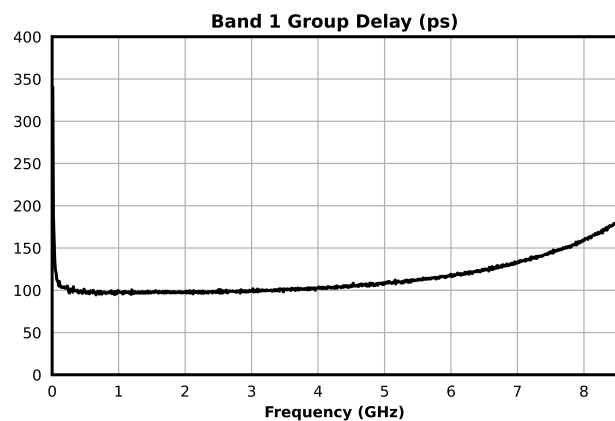
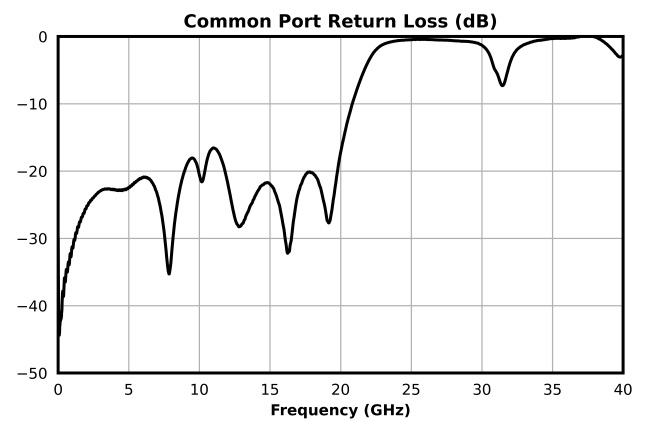
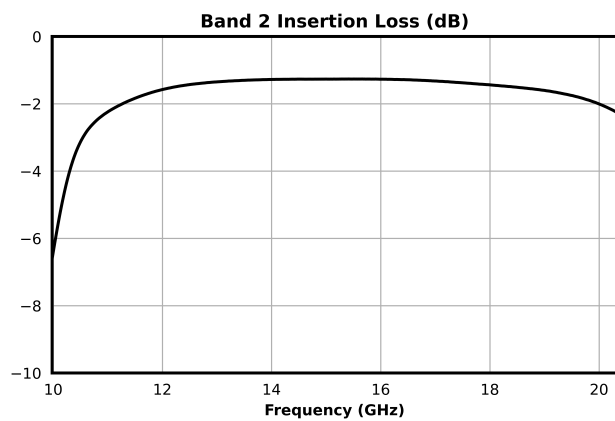
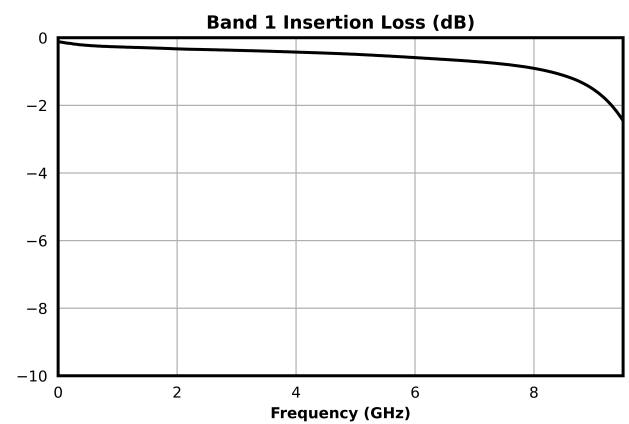
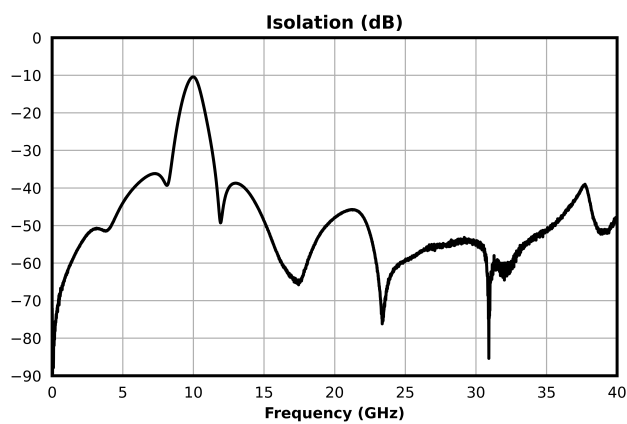
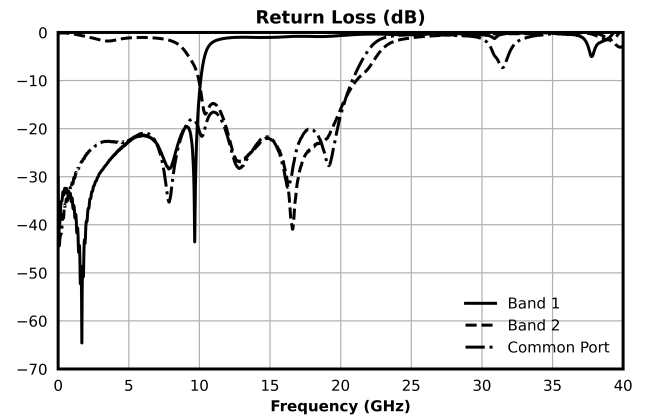
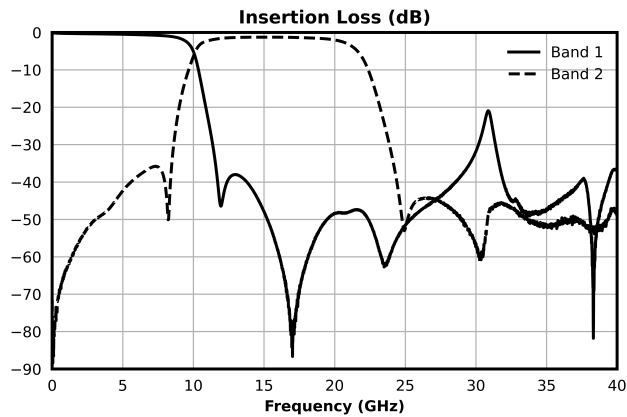
Package Information

Parameter	Details	Rating
ESD	< 250 Volts	HBM Class 0
Dimensions	-	3.50 x 3.50 mm
Moisture Sensitivity Level	-	MSL 1

Electrical Specifications

Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
Band 1: 1 dBc Passband	Temp = 25°C	0	8.5	-	-	-	GHz
Band 1: 3 dBc Passband	Temp = 25°C	0	9.69	-	-	-	GHz
Band 1: 30 dBc Rejection Point	Temp = 25°C	11.37	11.37	-	-	-	GHz
Band 1: Return Loss	Temp = 25°C	0	8.5	-	26.65	-	dB
Band 1: Group Delay	Temp = 25°C	0	8.5	-	104.23	-	ps
Band 2: 1 dBc Passband	Temp = 25°C	10.98	20.33	-	-	-	GHz
Band 2: Center Freq	Temp = 25°C	-	-	-	14.94	-	GHz
Band 2: 3 dBc Passband	Temp = 25°C	10.26	21.41	-	-	-	GHz
Band 2: 30 dBc Rejection Point	Temp = 25°C	8.57	23.95	-	-	-	GHz
Band 2: Return Loss	Temp = 25°C	10.98	20.33	-	23.36	-	dB
Band 2: Group Delay	Temp = 25°C	10.98	20.33	-	139.15	-	ps
Crossover Frequency	Temp = 25°C	-	-	-	10.07	-	GHz
Crossover Isolation	Temp = 25°C	-	-	-	11	-	dB

Typical Performance Plot

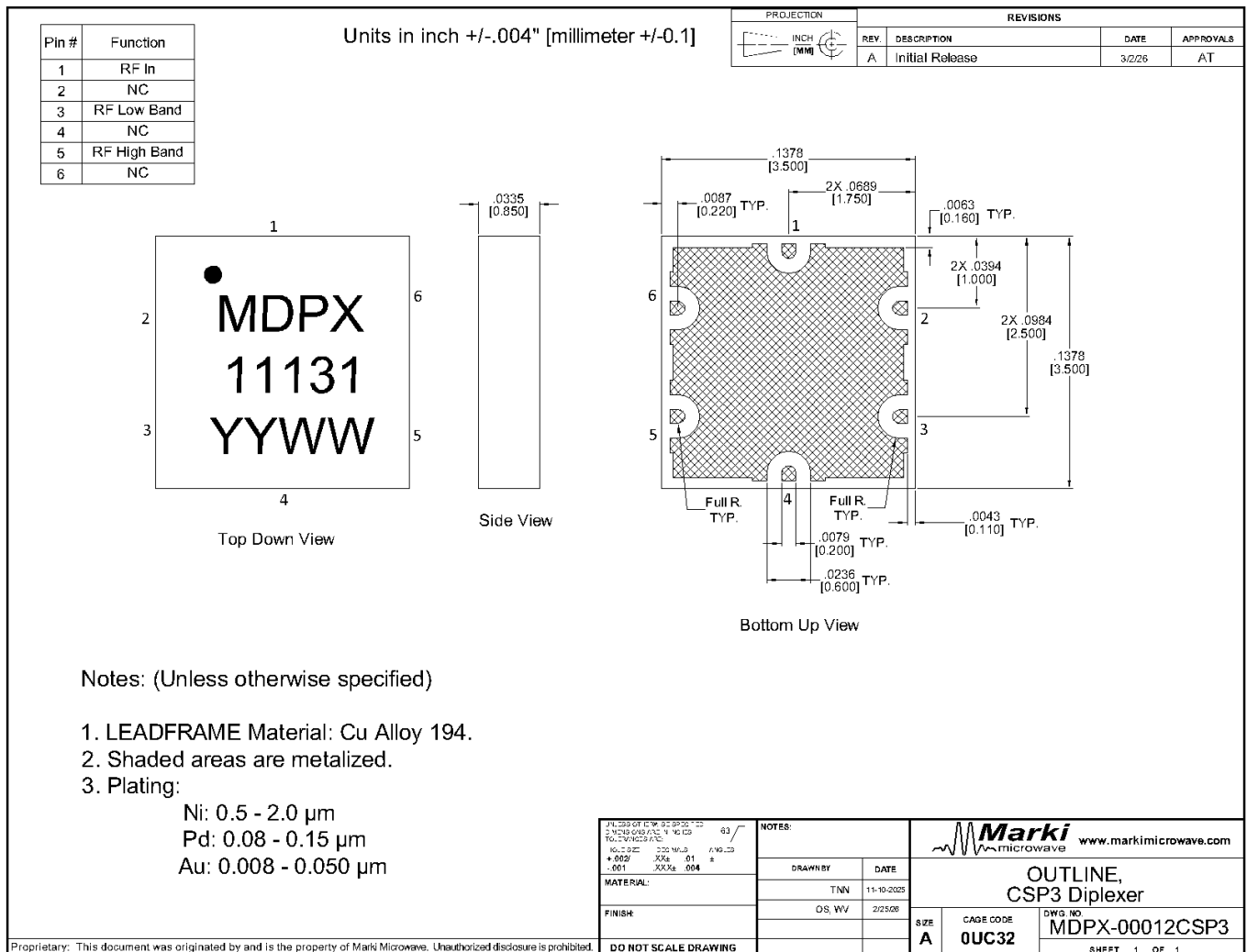


All measurements are de-embedded from the fixture with Automatic Fixture Removal (AFR).

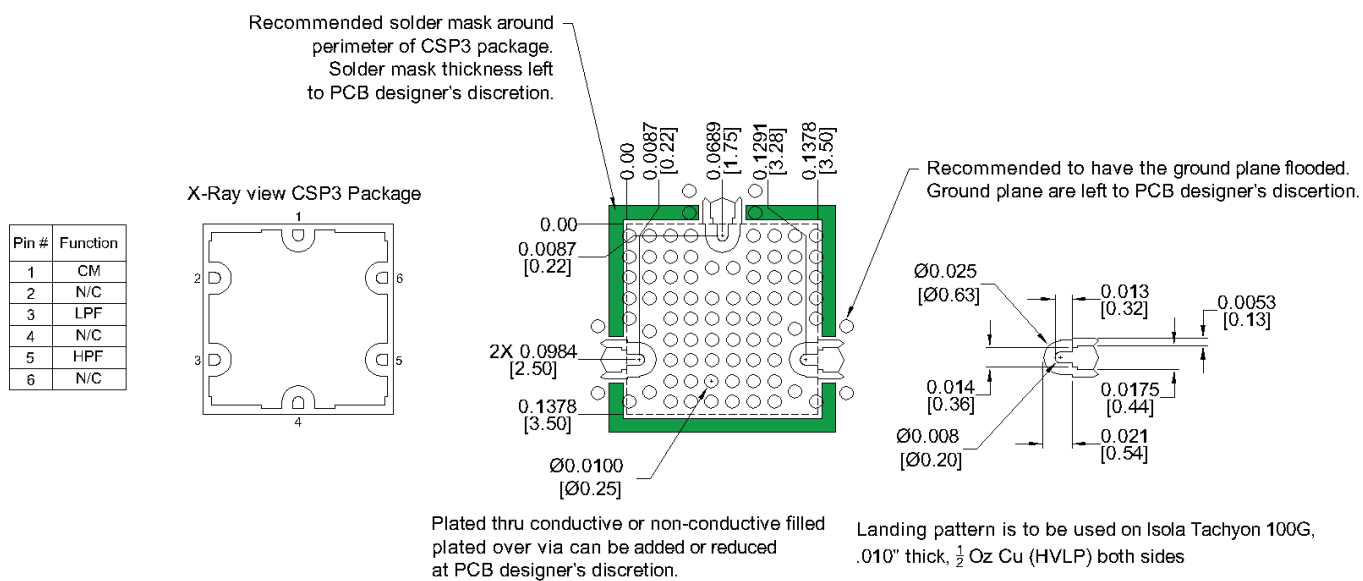
Mechanical Data

Outline Drawing

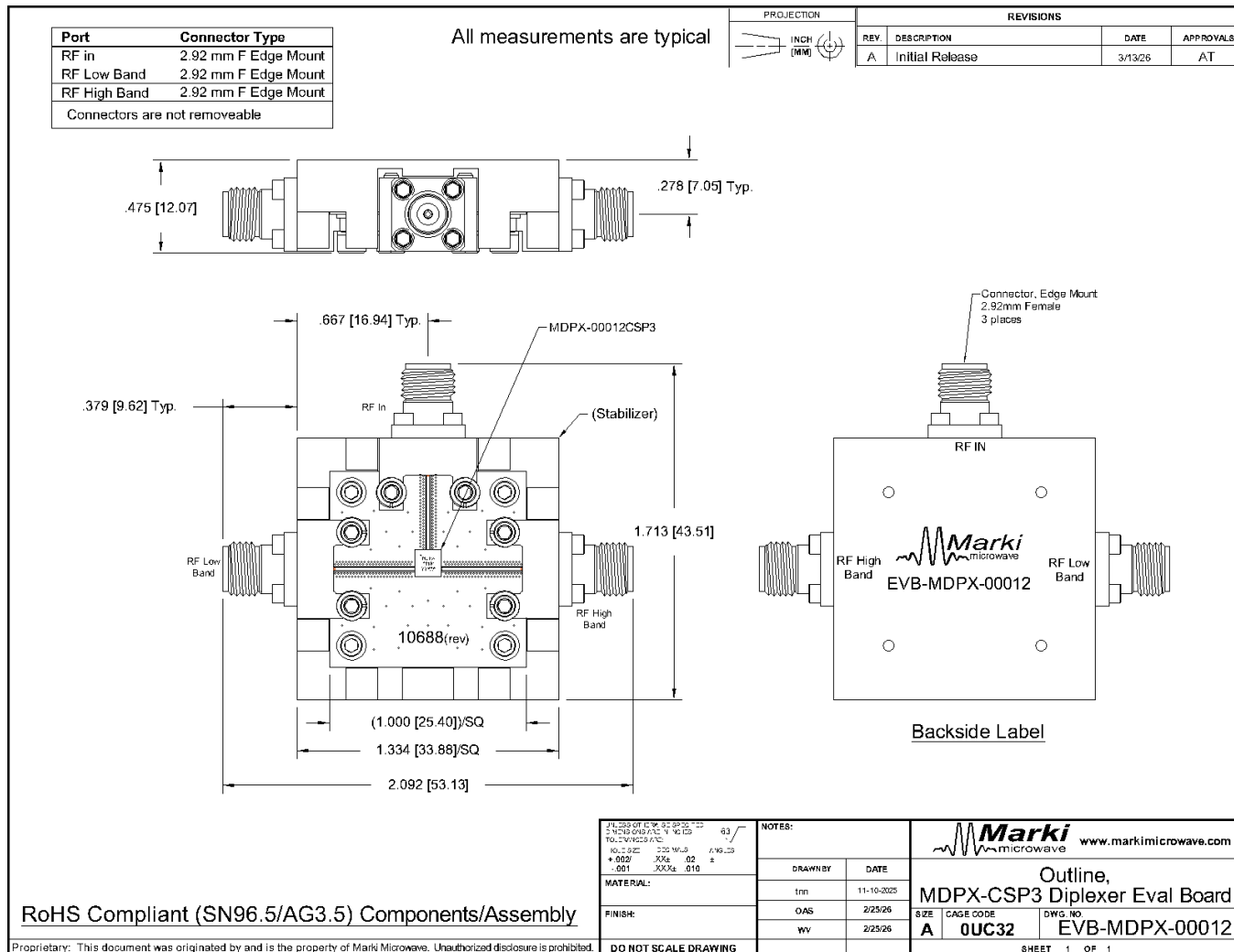
Download : [Outline 2D Drawing](#)



Footprint Image



Evaluation Board - Outline Drawing



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