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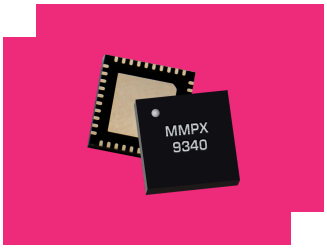
MMPX-00002PSM

Passive MMIC DC-18 GHz Quadplexer

DEVICE OVERVIEW

General Description

The MMPX-00002PSM is a MMIC surface mount quadplexer capable of multiplexing DC-6 GHz / 8-10 GHz / 12-14 GHz / 16-18 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. The MMPX-00002PSM is available as a 6x6mm QFN. Low unit to unit variation allows for accurate simulations using the provided SnP files taken from measured production units.



Download s-parameters here

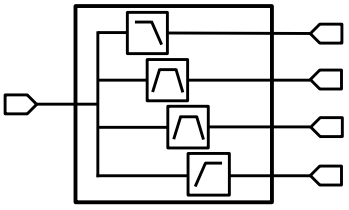
Features

- Excellent Return Loss
- 11 GHz crossover frequency
- High Band-Band Isolation

Applications

- Satellite Communications
- Reflectionless Filter Applications
- Electronic Warfare

Functional Block Diagram



Part Ordering Options

Part Number	Description	Package	Green Status	Product Lifecycle	Export Classification
MMPX-00002PSM	Passive MMIC DC-18 GHz Quadplexer	QFN	RoHS REACH	Released	EAR99
EVB-MMPX-00002P	Evaluation Board, Passive MMIC 4-18 GHz Quadplexer	EVB	RoHS REACH	Released	EAR99

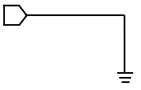
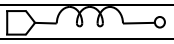
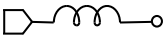
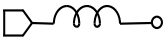
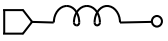
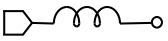
Table Of Contents

Revision History

Revision Code	Revision Date	Comment
-	2024-07-09	Datasheet Initial Release

Port Configuration and Functions

Port Functions

Port	Function	Description	DC Equivalent Circuit
Ground Paddle	Ground	PSM package ground path is provided through the substrate and ground bond pads.	
Pin 15	Input/common	Pin 15 is DC short to Pin 29 and open to all other ports and ground.	
Pin 2	Band 1 Input/Output	Pin 2 is DC short to Pin 15 and open to all other ports and ground.	
Pin 29	Band 3 Input/Output	Pin 29 is DC open to all other ports and ground.	
Pin 33	Band 4 Input/Output	Pin 33 is DC open to all other ports and ground.	
Pin 37	Band 2 Input/Output	Pin 37 is DC open to all other ports and ground.	

Specifications

Absolute Maximum Ratings

The Absolute Maximum Ratings indicate limits beyond which damage may occur to the device. All Absolute Maximum Ratings are individual and should not be met in parallel. 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
RF Power Handling	30	dBm

Package Information

Parameter	Details	Rating
ESD	< 50 Volts	HBM 0Z
Dimensions	-	6 x 6 mm
Moisture Sensitivity Level	-	MSL 1

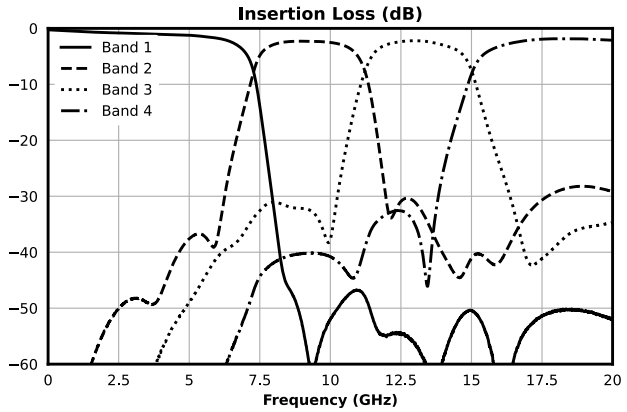
Electrical Specifications

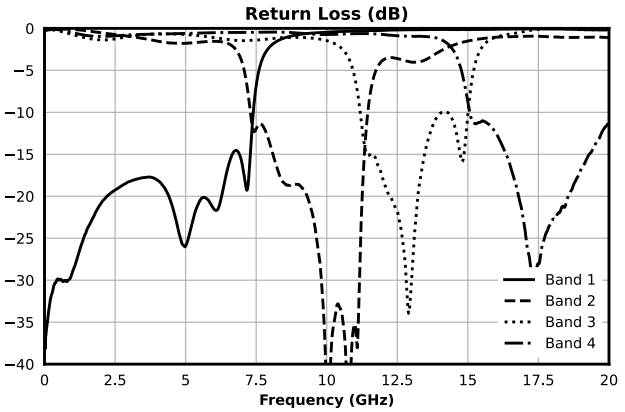
The electrical specifications apply at TA=+25°C in a 50Ω system. Typical data shown is for the filter in a PSM package with a sine wave input applied to Pin 15. Min and Max limits are guaranteed at TA=+25°C.

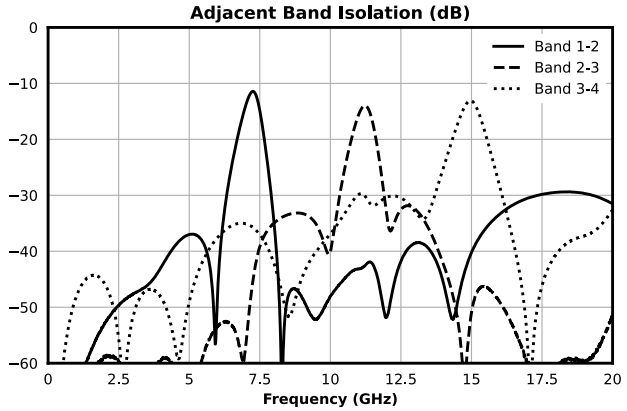
Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
Band 1	-	-	-	0	-	6	GHz
Band 2	-	-	-	8	-	10	GHz
Band 3	-	-	-	12	-	14	GHz
Band 4	-	-	-	16	-	18	GHz
Center Frequency	Band 1	0	6	-	3	-	GHz
Center Frequency	Band 2	8	10	-	9.1	-	GHz
Center Frequency	Band 3	12	14	-	13	-	GHz
Center Frequency	Band 4	16	18	-	17	-	GHz
Cross Over Frequency	Band 1 to Band 2	-	-	-	7.3	-	GHz
Cross Over Frequency	Band 2 to Band 3	-	-	-	11.2	-	GHz
Cross Over Frequency	Band 3 to Band 4	-	-	-	15	-	GHz
Group Delay	Band 1	0	6	-	227	-	ps
Group Delay	Band 2	8	10	-	344	-	ps
Group Delay	Band 3	12	14	-	243	-	ps
Group Delay	Band 4	16	18	-	181	-	ps
Insertion Loss @ fc	Band 1	0	6	-	0.8	-	dB
Insertion Loss @ fc	Band 2	8	10	-	2.3	-	dB
Insertion Loss @ fc	Band 3	12	14	-	2.2	-	dB
Insertion Loss @ fc	Band 4	16	18	-	2.1	-	dB
Return Loss	Band 1	0	6	-	21	-	dB
Return Loss	Band 2	8	10	-	20	-	dB
Return Loss	Band 3	12	14	-	16	-	dB
Return Loss	Band 4	16	18	-	17	-	dB

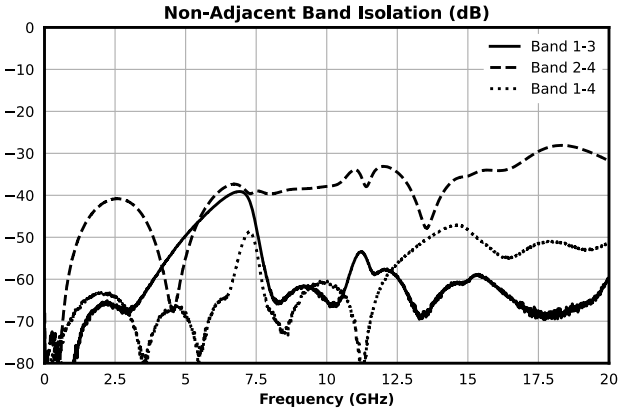
Typical Performance Plots

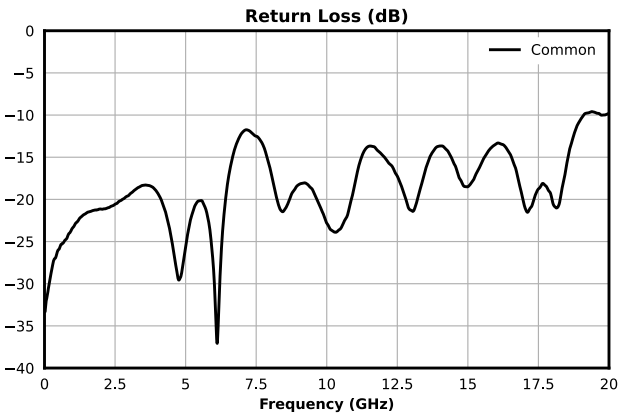
Typical performance plots are evaluation board measurements with fixturing to the device pads de-embedded.

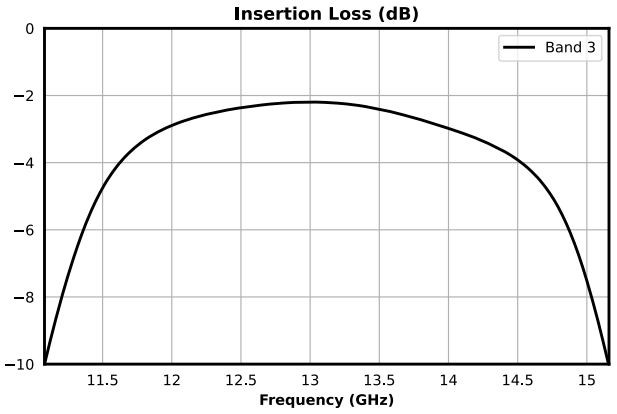


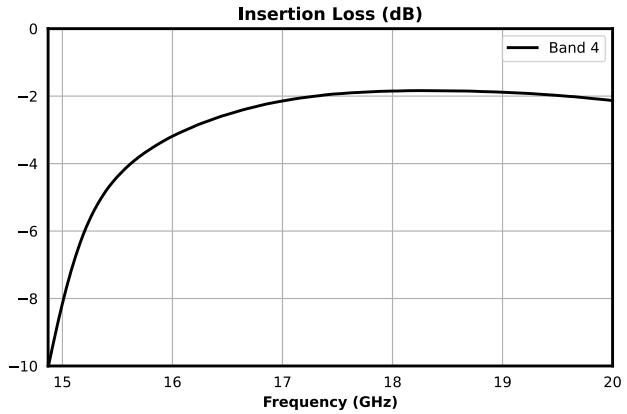


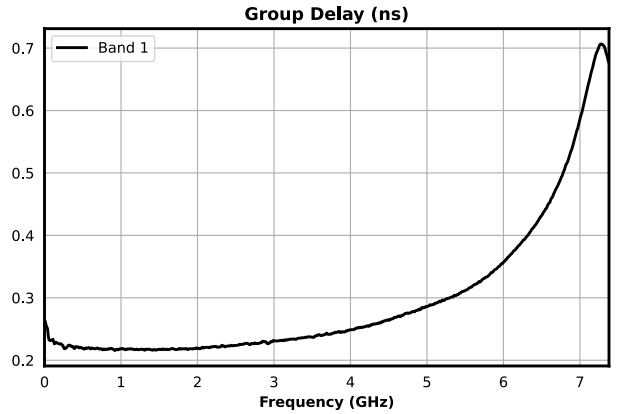


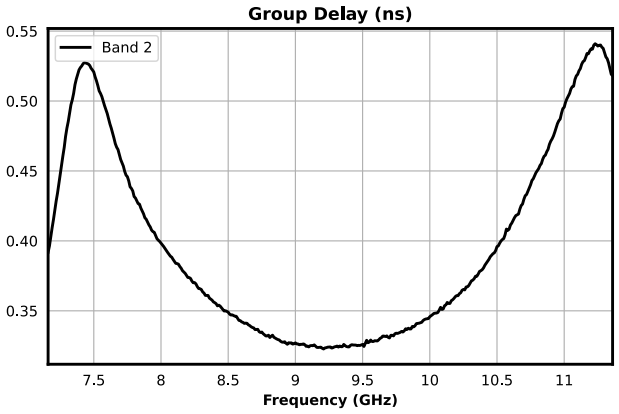


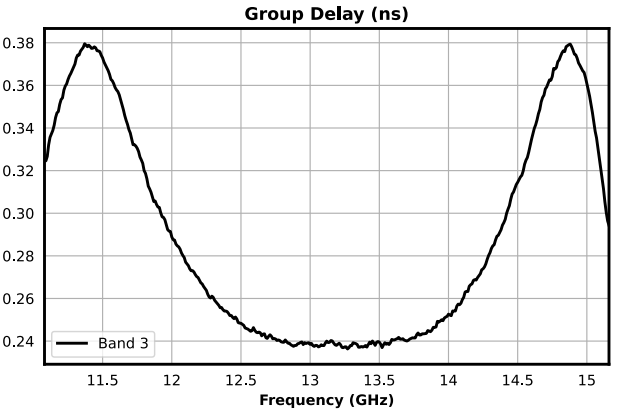


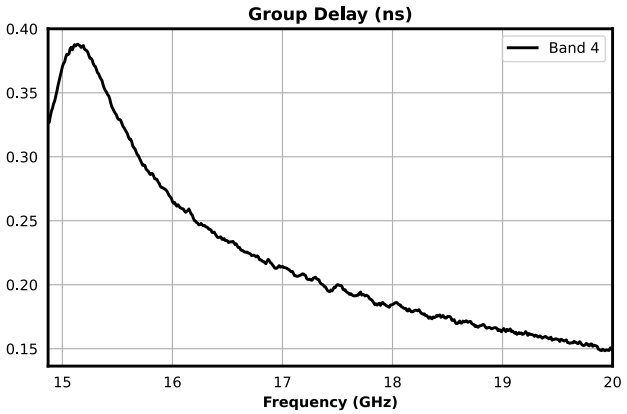








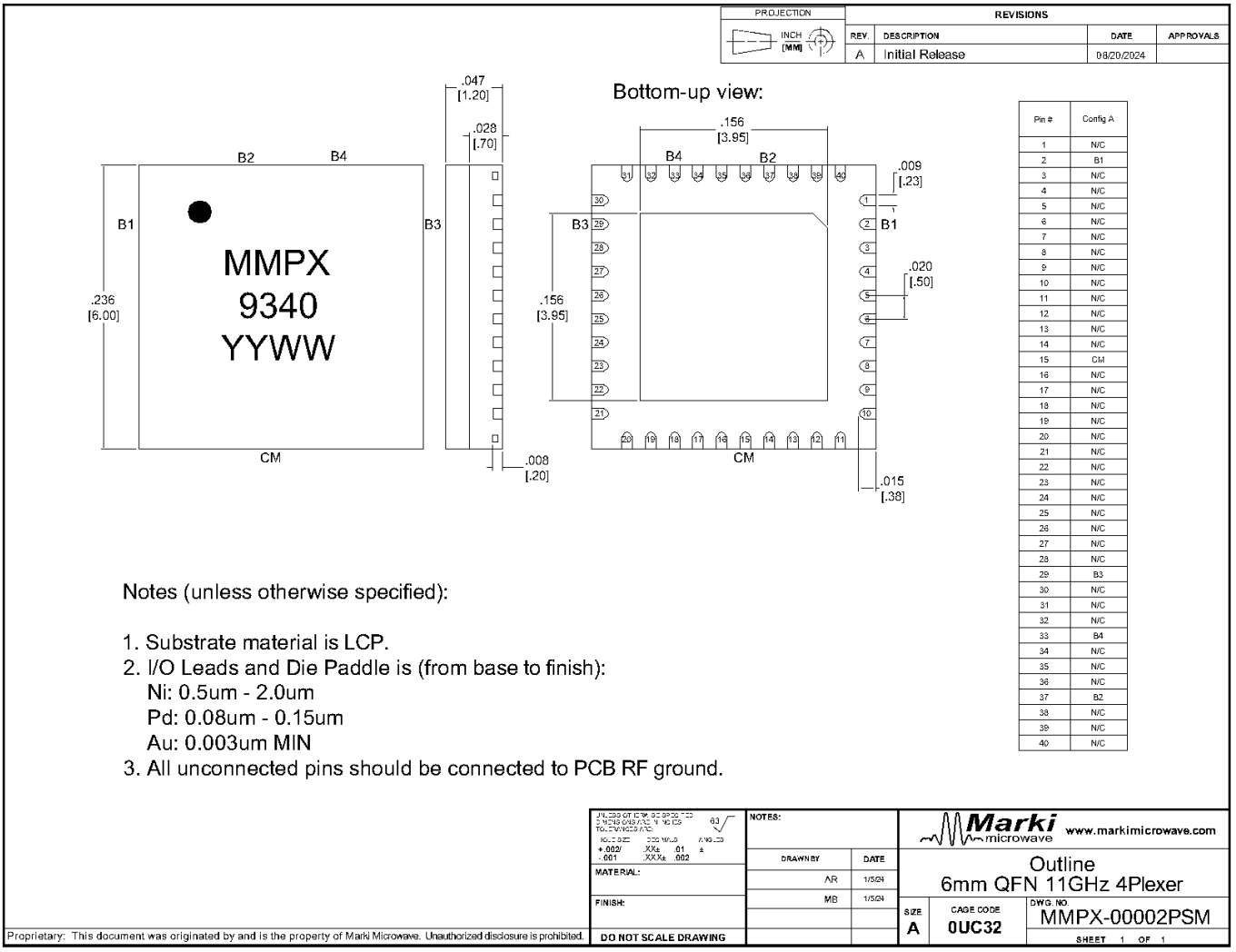




Mechanical Data

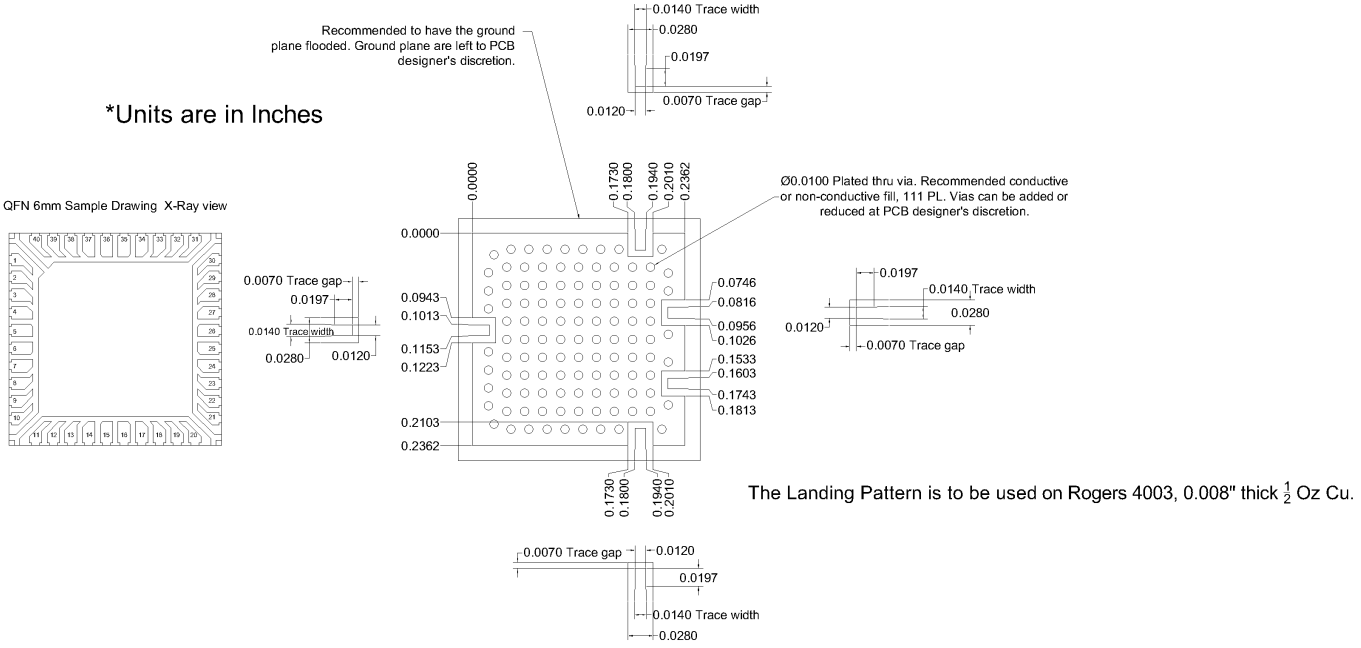
Outline Drawing

Download : Outline 2D Drawing | Outline 3D STP

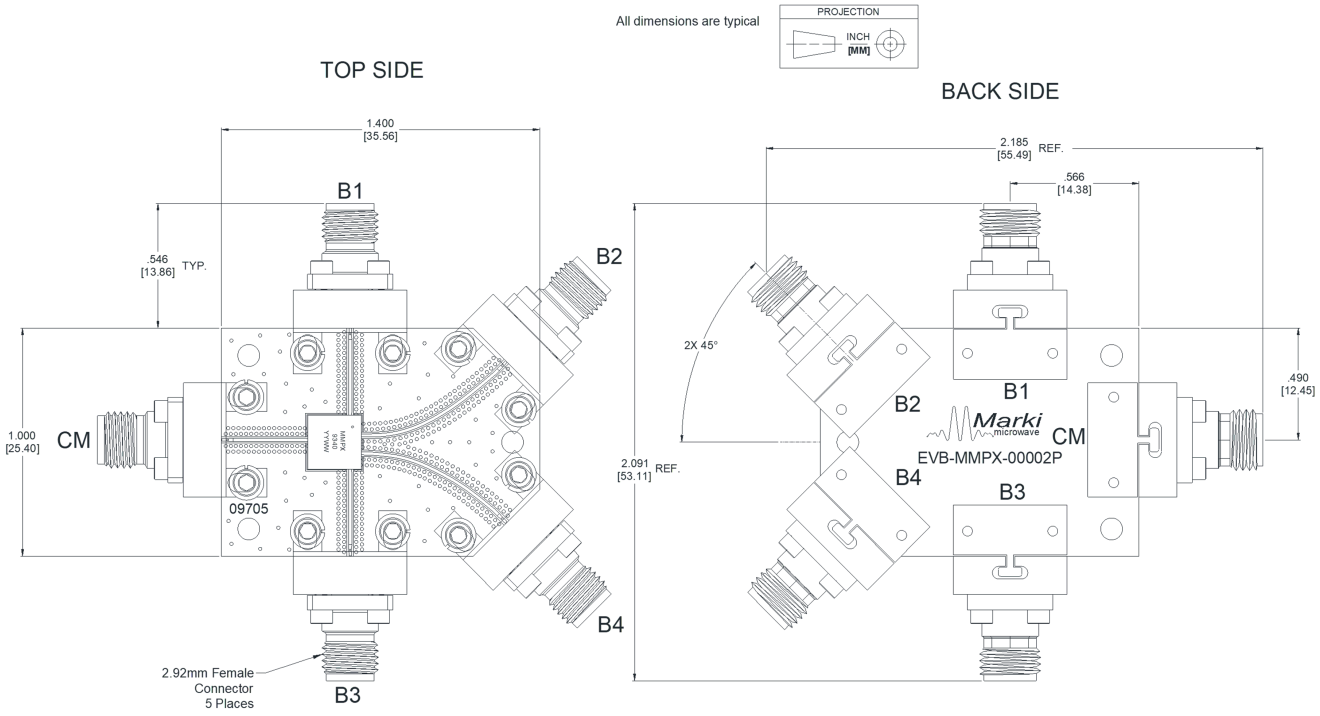


Footprint Image

Download : Footprint Drawing



Evaluation Board - Outline Drawing



RoHS Compliant (SN96.5/AG3.5) Components/Assembly

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