

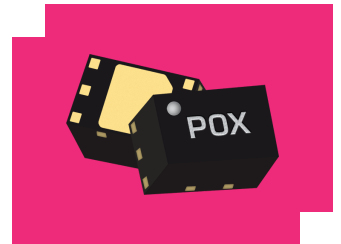
MPD2-00001PSM

0.4 - 4 GHz MMIC 2-Way Wilkinson Power Divider/Power Splitter

DEVICE OVERVIEW

General Description

The MPD2-00001PSM is a small footprint MMIC 2-Way Wilkinson power divider/power splitter featuring high isolation in our compact DFN package. The MPD2-00001PSM uses a mix of lumped element and distributed circuits to significantly reduce the footprint while maintaining isolation at low frequencies. It is much smaller than a printed PCB Wilkinson Power Divider/Combiner. It can be used as an equal amplitude/phase power splitter or a power combiner with excellent isolation. Tight fabrication tolerances result in less unit-to-unit variation than traditional power divider technologies, allowing for accurate simulations using the provided S3P file taken from measured production units. The 1.3 x 2mm DFN package enables extreme miniaturization of SMT footprint making the MPD2-00001PSM ideal for applications prioritizing low SWaP.



[Download s-parameters here](#)

Features

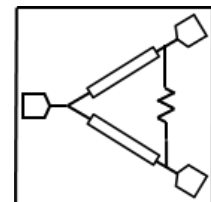
- Can be used as a splitter or combiner
- Excellent equal amplitude and phase balance
- High isolation
- RoHS compliant
- Miniature 1.3 x 2mm DFN package

Applications

- Test Equipment
- Electronic Warfare
- Radar and satellite communications
- High Channel Count Systems

Functional Block

Diagram



Part Ordering Options

Part Number	Description	Package	Green Status	Product Lifecycle	Export Classification
MPD2-00001PSM	0.4 - 4 GHz MMIC 2-Way Wilkinson Power Divider/Power Splitter	DFN	REACH RoHS	Released	EAR99
EVB-MPD2-00001P	Evaluation Board, 0.4 - 4 GHz MMIC 2-Way Wilkinson Power Divider/Power Splitter	EVB	RoHS	Released	EAR99

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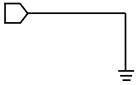
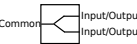
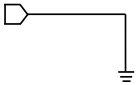
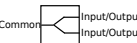
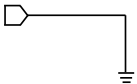
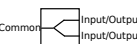
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Features	Package Information
Applications	Electrical Specifications
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	■ Evaluation Board
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Revision History

Revision Code	Revision Date	Comment
-	2024-06-10	Datasheet Initial Release

Port Configuration and Functions

Port Functions

Port	Function	Description	Equivalent Circuit for Package
Ground Paddle	Gnd	Ground paddle should be connected to RF ground	
Pin 1	Non-connect (NC)	Pin 1 is not connected internally and should be tied to RF ground.	
Pin 2	Common	Pin 2 is the common input/output port. It is DC short to the other two ports and open to ground.	
Pin 3	Non-connect (NC)	Pin 3 is not connected internally and should be tied to RF ground.	
Pin 4	Input/Output 1	Pin 4 is an input/output port. It is DC short to the other two ports and open to ground.	
Pin 5	Non-connect (NC)	Pin 5 is not connected internally and should be tied to RF ground.	
Pin 6	Input/Output 2	Pin 6 is an input/output port. It is DC short to the other two ports and open to 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	40	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 to < 500 Volts	HBM Class 1A
Dimensions	-	2.0 x 1.3 mm
Moisture Sensitivity Level	-	MSL 1

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Electrical Specifications

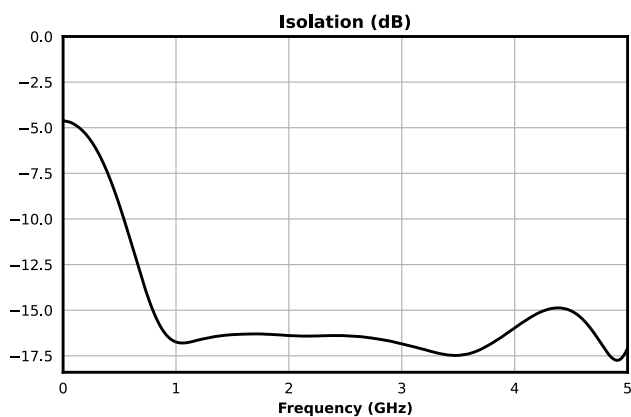
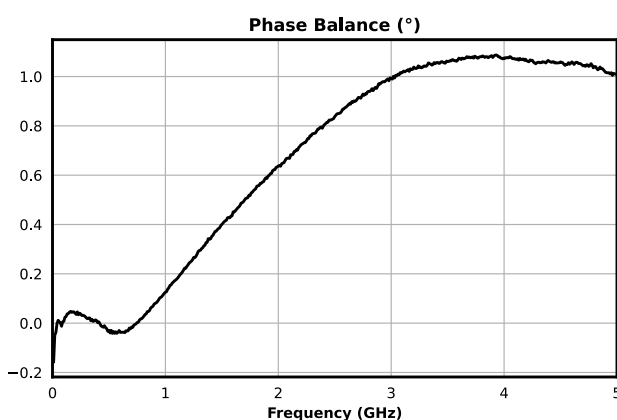
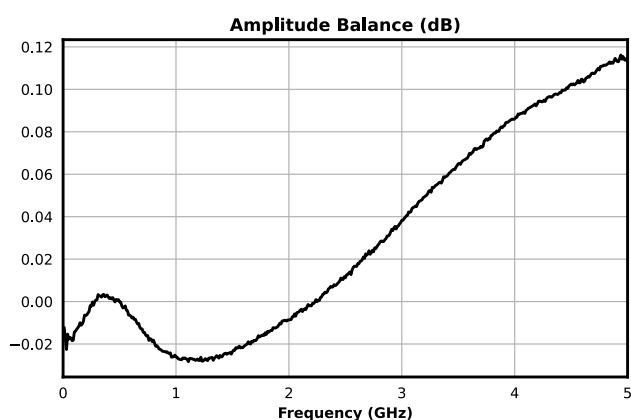
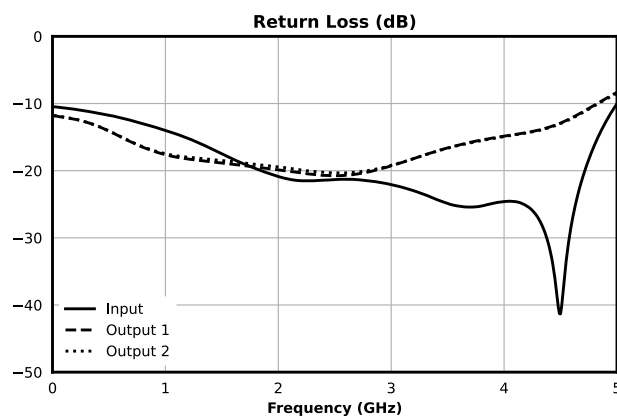
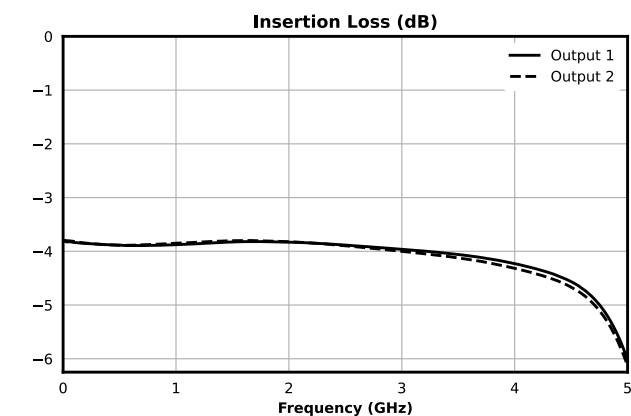
The electrical specifications apply at TA=+25°C in a 50Ω system. Min and Max limits are guaranteed at TA=+25°C.

Parameter	Test Conditions	Minimum Frequency (GHz)	Maximum Frequency (GHz)	Min	Typ	Max	Unit
Nominal Phase Shift	-	0	4	-	0	-	°
Phase Balance	-	0	4	-	0.8	-	°
Excess Insertion Loss	-	0	4	-	0.9	-	dB
Isolation	-	0.4	4	-	16	-	dB
Amplitude Balance	-	0	4	-	0.02	-	dB
Common Return Loss	-	0	4	-	21	-	dB
Impedance	-	0	4	-	50	-	Ω
Nominal Power Splitting (dB)	-	0	4	-	3	-	dB
Output Return Loss	-	0	4	-	18	-	dB

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Typical Performance Plots



Measured data is de-embedded from fixture using AFR.

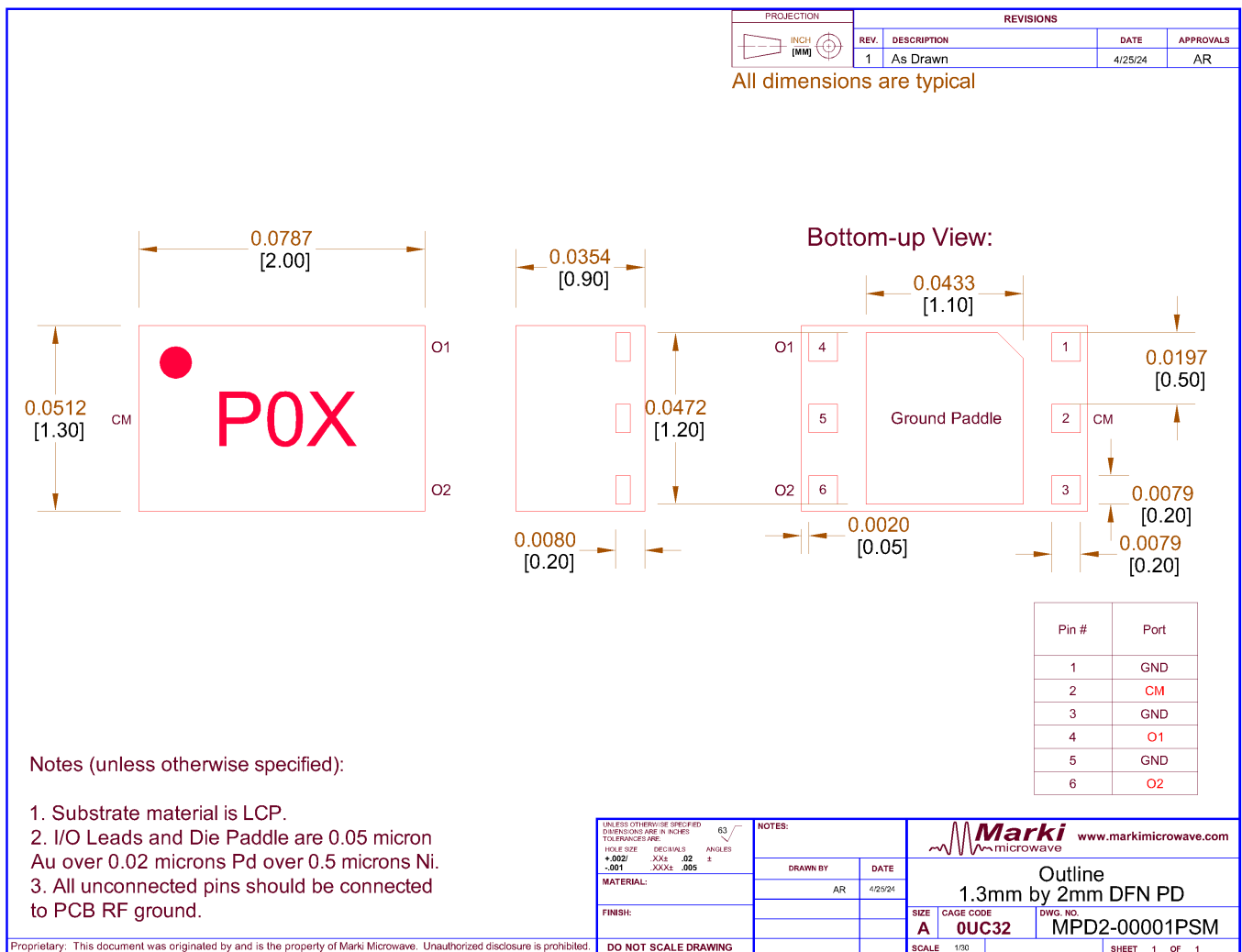
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Mechanical Data

Outline Drawing

Download : [Outline 2D Drawing](#)



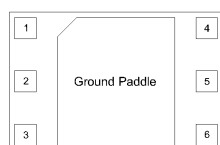
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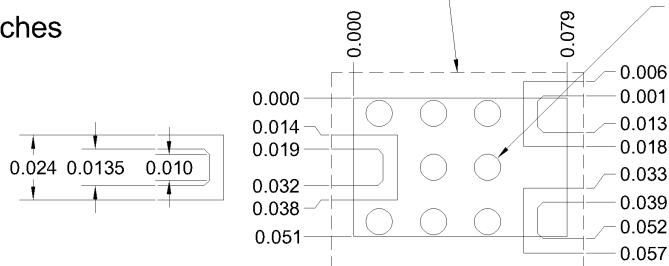
Footprint Image

Download : [Footprint Drawing](#)

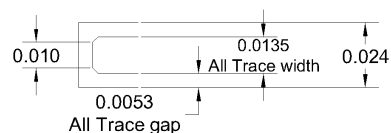
*Units are in Inches



Recommended to have the ground plane flooded. Ground plane are left to PCB designer's discretion.



Ø0.010 Plated thru via. Recommended conductive or non-conductive fill, 8 PL. Vias can be added or reduced at PCB designer's discretion.

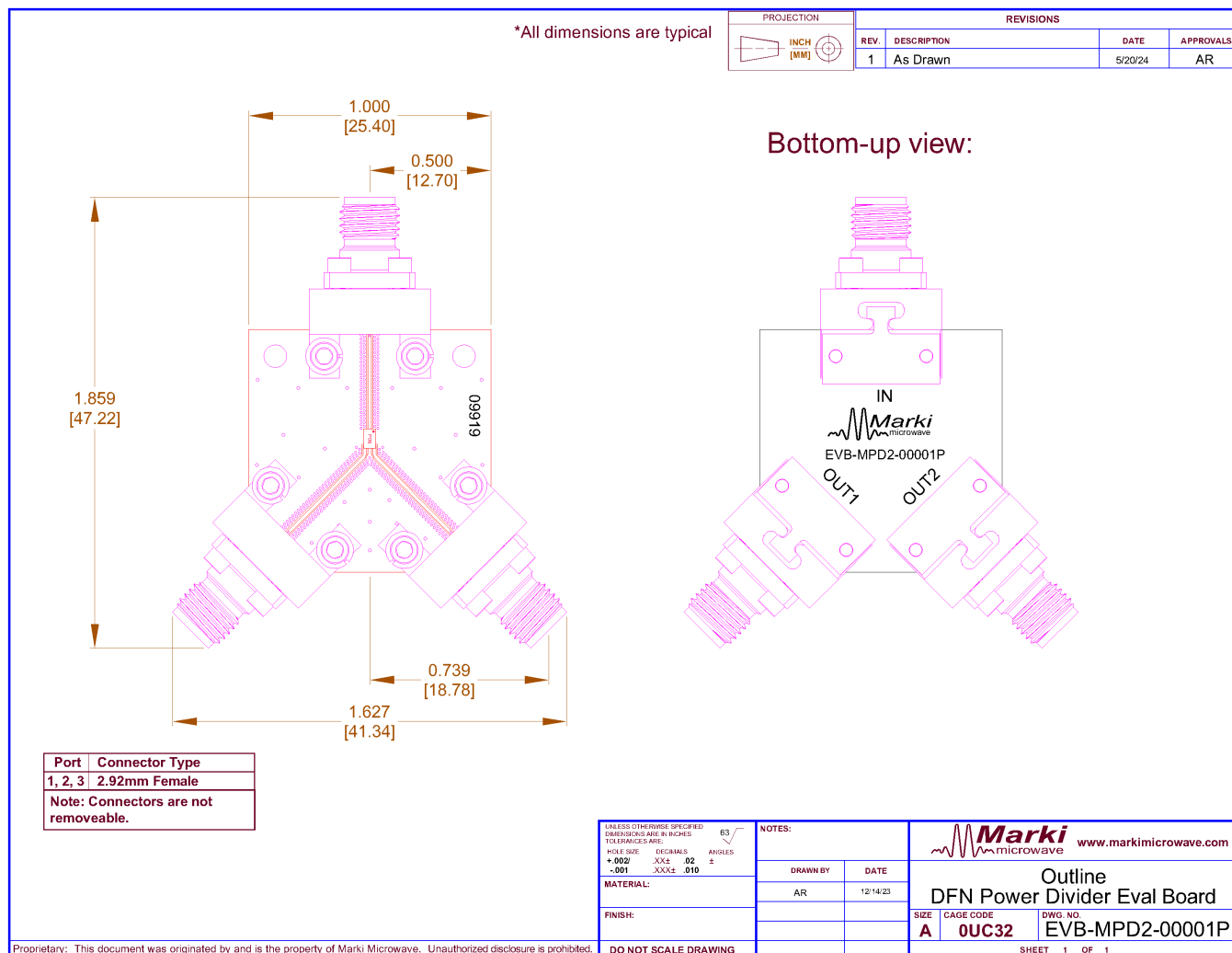


The landing pattern is to be used on Rogers 4003, 0.008" thick, 1/2 Oz Cu.

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Evaluation Board - Outline Drawing



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