

# 3-Way Power Divider

## 5 - 1800 MHz



MAPD-011059

Rev. V1

### Features

- 3-Way 0-degree
- Surface Mount Technology
- Excellent Temperature Stability
- RoHS\* Compliant and Pb Free
- 260° Reflow Compatible
- Available on Tape & Reel

### Applications

- CATV
- Broadband
- FTTX

### Description

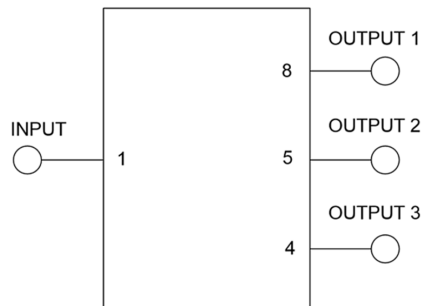
The MAPD-011059 is a 3-way 0° power divider in a surface mount package.

### Ordering Information<sup>1,2</sup>

Part Number	Package
MAPD-011059	500 piece reel
MAPD-011059-TB	Sample Board

1. Reference Application Note M513 for reel size information.
2. All sample boards include 5 loose parts.

### Functional Schematic



### Pin Function<sup>3,4</sup>

Pin #	Function
1	Input
2, 3, 6, 7	Ground
4	Output 3
5	Output 2
8	Output 1

3. MACOM recommends connecting unused package pins to ground.
4. The exposed pad centered on the package bottom must be connected to RF, DC and thermal ground.

\* Restrictions on Hazardous Substances, compliant to current RoHS EU directive.

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**AC Electrical Specifications: Freq. = 5 - 1800 MHz, T<sub>A</sub> = +25°C, P<sub>IN</sub> = 0 dBm, Z<sub>0</sub> = 75 Ω**

Parameter	Test Conditions (MHz)	Units	Min.	Typ.	Max.
3 way split reference value	-	dB	—	4.77	—
Insertion Loss 1 (pin 1 - pin 8) (Ref Level -4.77 dB)	5 - 500 500 - 1200 1200 - 1800	dB	—	2.2 2.5 3.0	2.4 3.1 4.5
Insertion Loss 2 (pin 1 - pin 5) (Ref Level -4.77 dB)	5 - 500 500 - 1200 1200 - 1800	dB	—	2.2 2.2 3.0	2.5 3.3 4.7
Insertion Loss 3 (pin 1 - pin 4) (Ref Level -4.77 dB)	5 - 500 500 - 1200 1200 - 1800	dB	—	1.8 2.3 3.5	2.1 3.0 4.7
Return Loss: Input (pin 1)	5 - 1200 1200 - 1800	dB	16 14	25 20	—
Return Loss: Output 1 (pin 8)	5 - 1800	dB	15	22	—
Return Loss: Output 2 (pin 5)	5 - 1200 1200 - 1800	dB	14 16	20 23	—
Return Loss: Output 3 (pin 4)	5 - 15 15 - 1800	dB	16 17	18 24	—
Isolation (pin 8-5)	5 - 1800	dB	25	35	—
Isolation (pin 8-4)	5 - 1800	dB	25	35	—
Isolation (pin 5-4)	5 - 1200 1200 - 1800	dB	19 17	27 22	—
Amplitude Balance 1 - 2 (pin 8 - pin 5)	5 - 1200 1200 - 1800	dB	-0.3 -0.3	0.1 0.3	0.6 1.0
Amplitude Balance 1 - 3 (pin 8 - pin 4)	5 - 1200 1200 - 1800	dB	-0.6 -0.6	-0.4 0.2	0.3 1.0
Amplitude Balance 2 - 3 (pin 5 - pin 4)	5 - 1200 1200 - 1800	dB	-0.6 -0.6	-0.4 0.2	0.1 0.4
Phase Balance 1 - 2 (pin 8 - pin 5)	5 - 1200 1200 - 1800	degrees	-6 -13	0.1 -2.5	5 5
Phase Balance 1 - 3 (pin 8 - pin 4)	5 - 1200 1200 - 1800	degrees	-3 -8	2.5 3.0	9 10
Phase Balance 2 - 3 (pin 5 - pin 4)	5 - 1200 1200 - 1800	degrees	-1 -1	2.1 5.7	8 12

### Absolute Maximum Ratings<sup>5,6</sup>

Parameter	Units
Input Power	1 W
Operating Temperature	-40°C to +85°C

- Exceeding any one or combination of these limits may cause permanent damage to this device.
- MACOM does not recommend sustained operation near these survivability limits.

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DC-0022740

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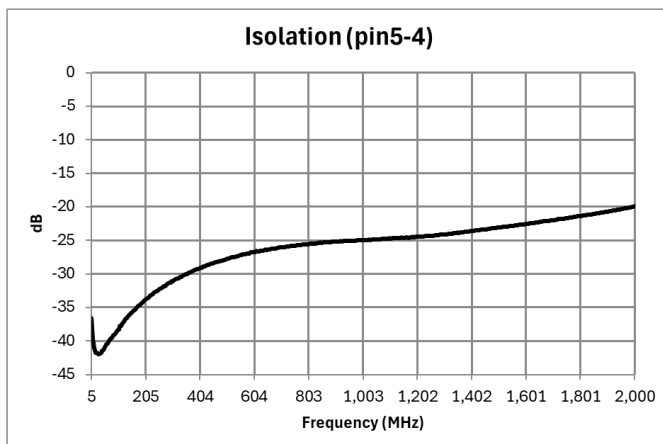
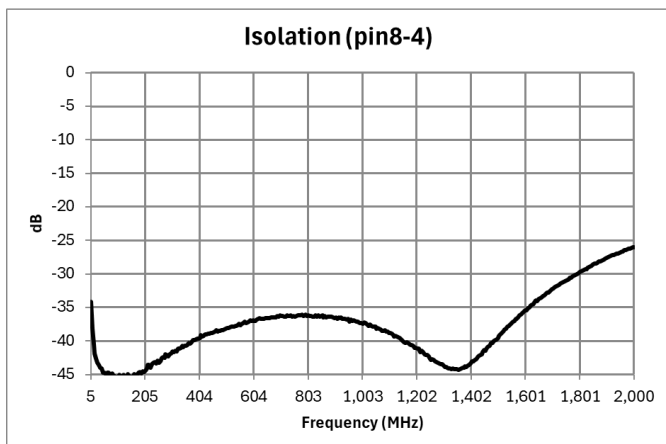
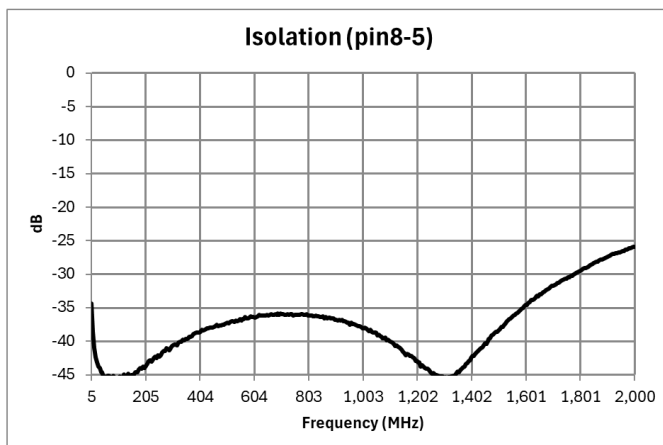
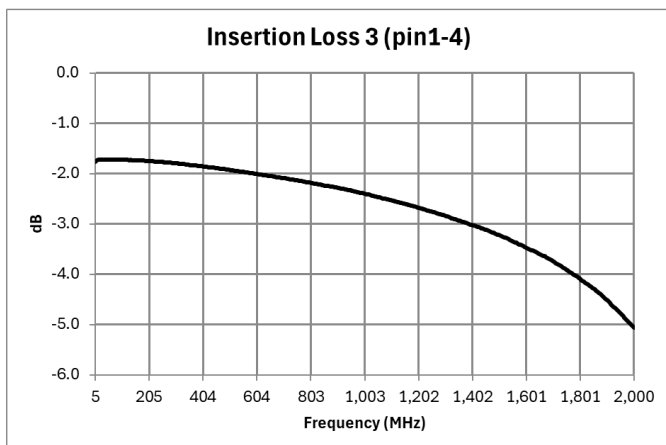
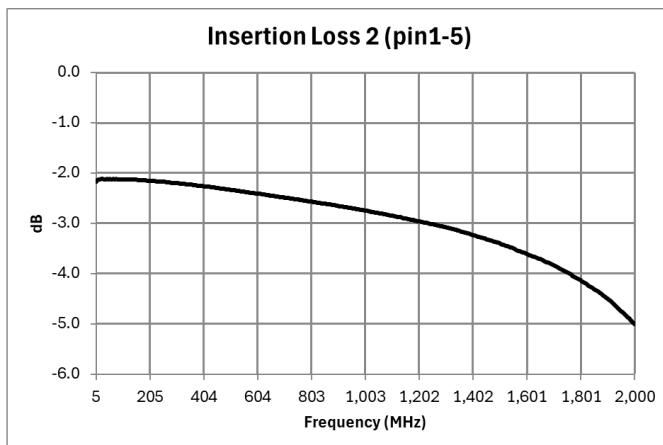
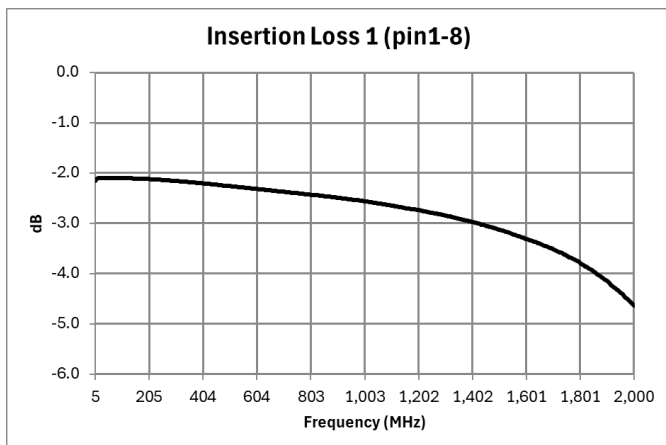
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### Typical Performance Curves



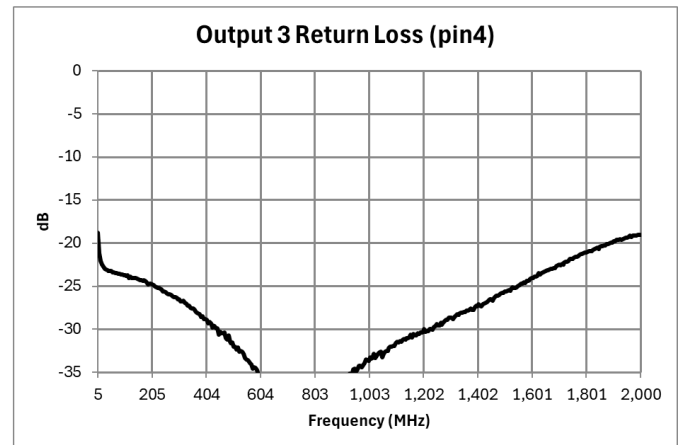
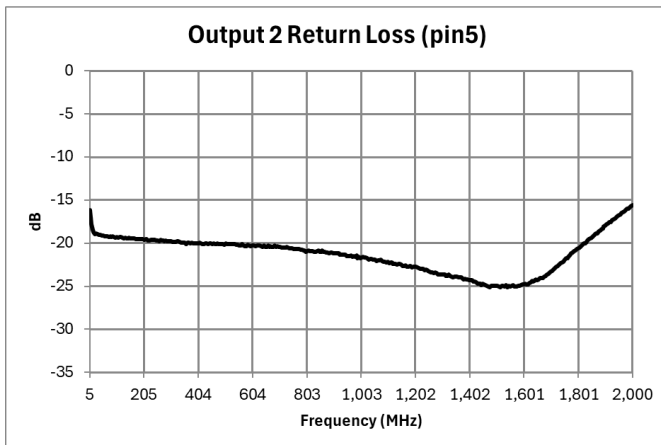
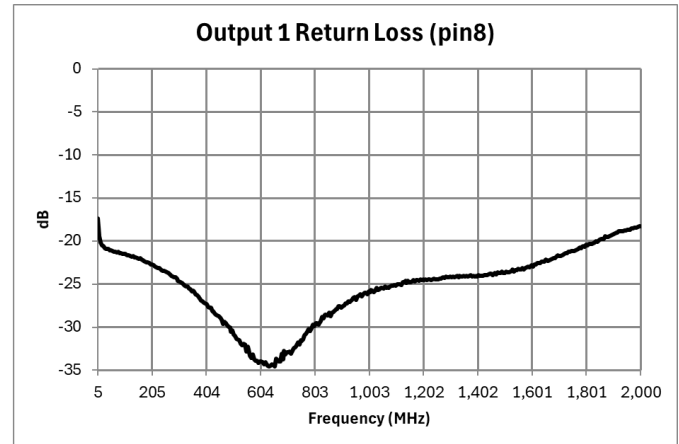
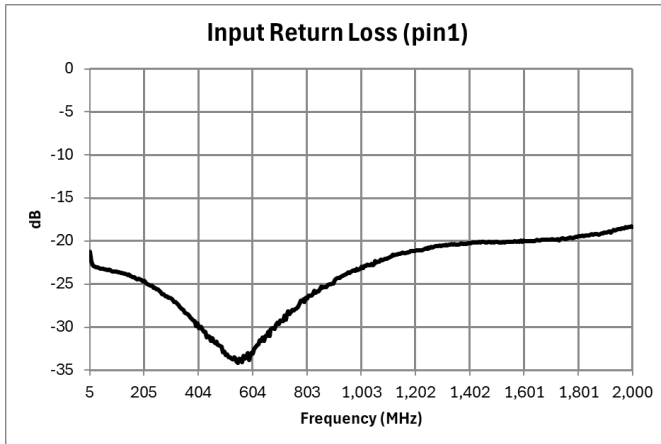
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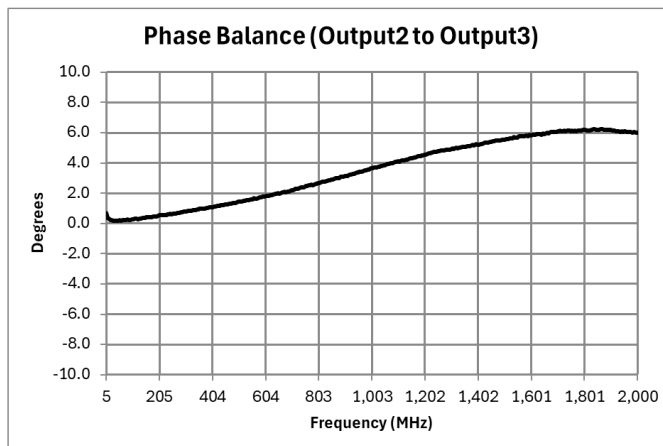
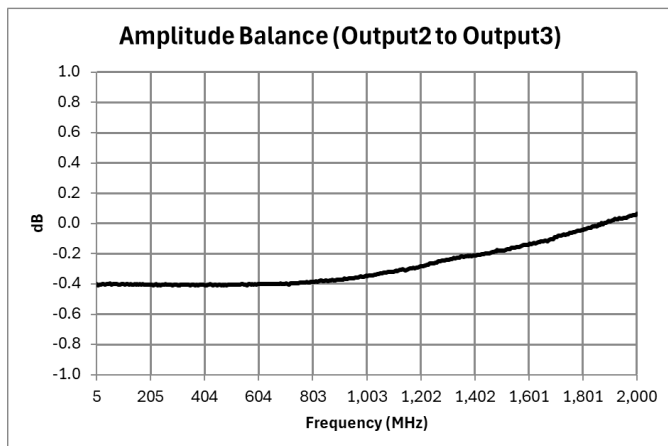
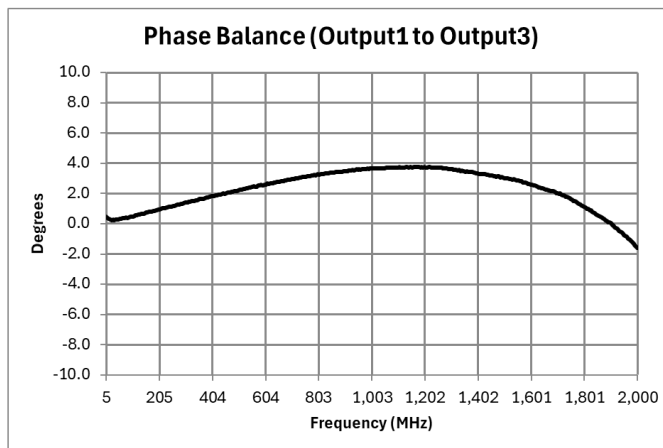
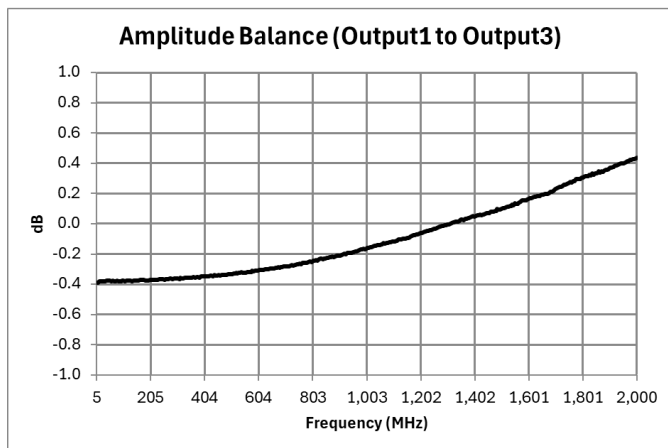
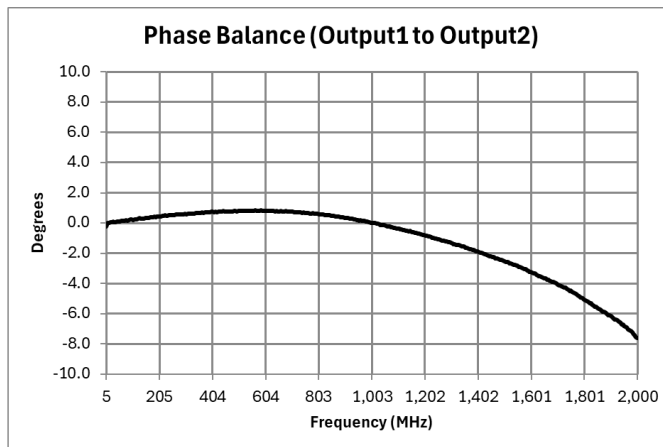
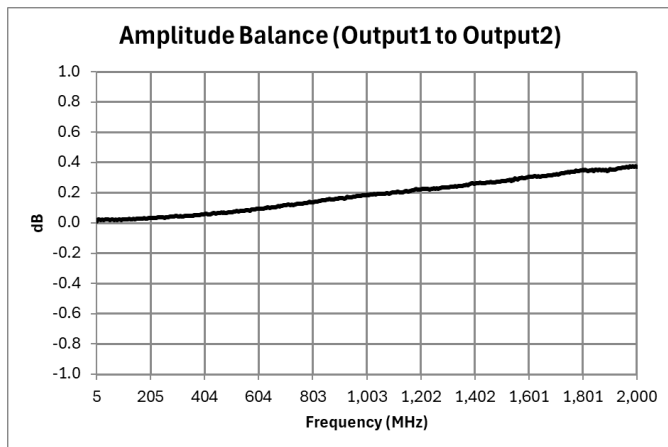
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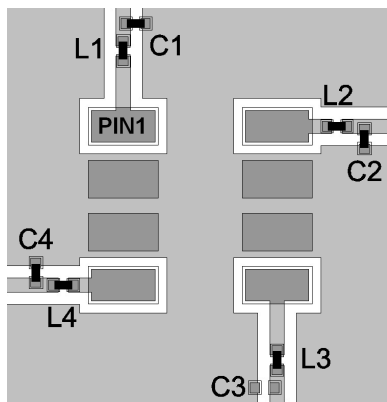
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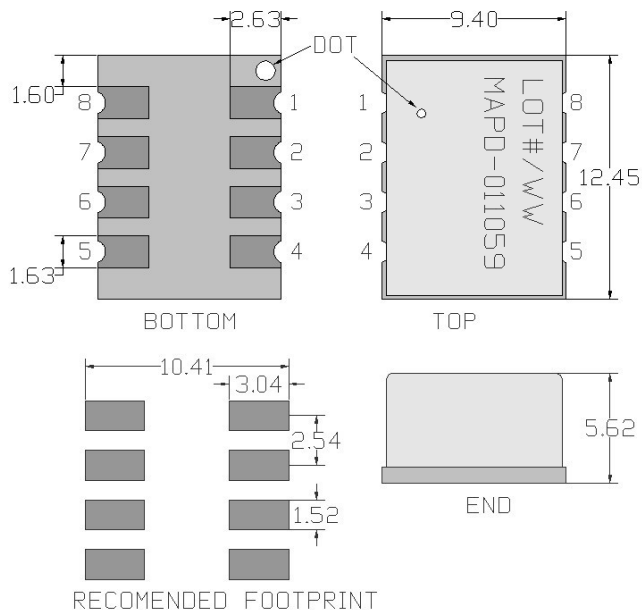
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## PCB Layout



## Outline Drawing<sup>7,8,9,10</sup>

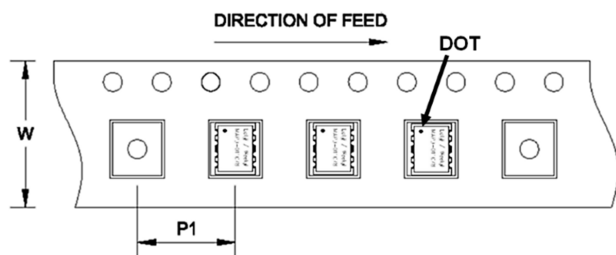


## Parts List

Part	Value	Case Style
C1, C2, C4	0.3 pF	0402
C3	No capacitor	none
L1	2.7 nH	0402
L2	2.0 nH	0402
L3	1.8 nH	0402
L4	2.2 nH	0402

- 7. Dimensions in mm.
- 8. Tolerance:  $\pm 0.2$  mm unless otherwise noted.
- 9. Model number and lot code are printed on the reel.
- 10. Lead plating: ENIG.

## Carrier Tape Orientation



## Tape & Reel Information

Parameter	Units	Value
Qty per reel	-	500
Reel Size	mm	330
Tape Width	mm	24
Pitch	mm	16
Orientation	-	F2
Reference Application Note ANI-019 for orientation		

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### Revision History

Rev	Date	Change Description
V1	2022-Jun-25	Product Release

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