

3-Way Power Divider

5 - 700 MHz



MAPD-011078
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-011078 is a 3-way 0° power divider in a surface mount package.

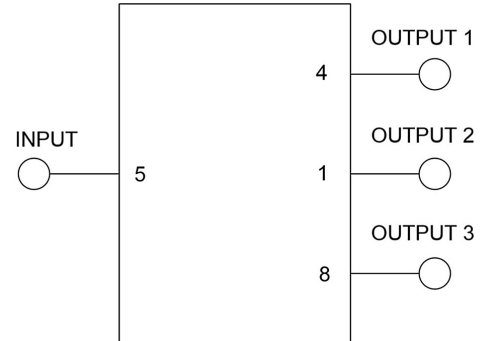
Ideally suited for high volume CATV applications.

Ordering Information^{1,2}

Part Number	Package
MAPD-011078	500 piece reel
MAPD-011078-TB	Sample Test Board

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

Functional Schematic



Pin Function^{3,4}

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

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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Electrical Specifications: Freq. = 5 - 700 MHz, T_A = +25°C, P_{IN} = 0 dBm, Z₀ = 75 Ω

Parameter	Test Conditions Frequency (MHz)	Units	Min.	Typ.	Max.
3 way split reference value	-	dB	-	4.77	-
Insertion Loss 1 (pin 5 - pin 4) (Ref Level -4.77 dB)	5 - 200 200 - 300 300 - 700	dB	-	0.3 0.5 1.0	0.6 0.7 1.6
Insertion Loss 2 (pin 5 - pin 1) (Ref Level -4.77 dB)	5 - 200 200 - 300 300 - 700	dB	-	0.3 0.4 0.8	0.5 0.6 1.4
Insertion Loss 3 (pin 5 - pin 8) (Ref Level -4.77 dB)	5 - 200 200 - 300 300 - 700	dB	-	0.4 0.6 1.1	0.6 0.7 1.7
Input Return Loss (pin 5)	5 - 300 300 - 700	dB	20 15	30 22	-
Output 1 Return Loss (pin 4)	5 - 20 20 - 700	dB	17 20	22 25	-
Output 2 Return Loss (pin 1)	5 - 20 20 - 700	dB	17 20	22 28	-
Output 3 Return Loss (pin 8)	5 - 20 20 - 600 600 - 700	dB	17 20 19	22 28 23	-
Isolation	5 - 700	dB	28	22	-
Amplitude Balance 1 - 2 (pin 5 - pin 4)	5 - 300 300 - 700	dB	-	0.1 0.3	±0.2 ±0.5
Amplitude Balance 1 - 3 (pin 5 - pin 1)	5 - 300 300 - 700	dB	-	0 0.1	±0.2 ±0.5
Amplitude Balance 2 - 3 (pin 1 - pin 8)	5 - 300 300 - 700	dB	-	0.1 0.2	±0.2 ±0.5
Phase Balance 1 - 2 (pin 5 - pin 4)	5 - 300 300 - 700	degrees	-	2 6	±5 ±9
Phase Balance 1 - 3 (pin 5 - pin 1)	5 - 300 300 - 700	degrees	-	1 2	±5 ±8
Phase Balance 2 - 3 (pin 1 - pin 8)	5 - 300 300 - 700	degrees	-	2 6	±5 ±11

Recommended Maximum Ratings^{5,6}

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

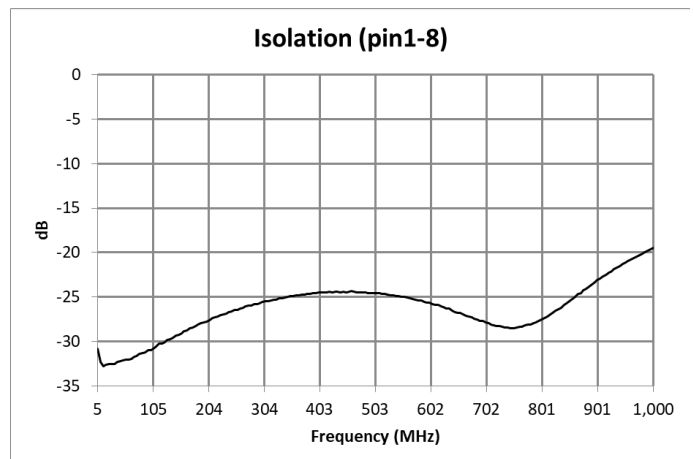
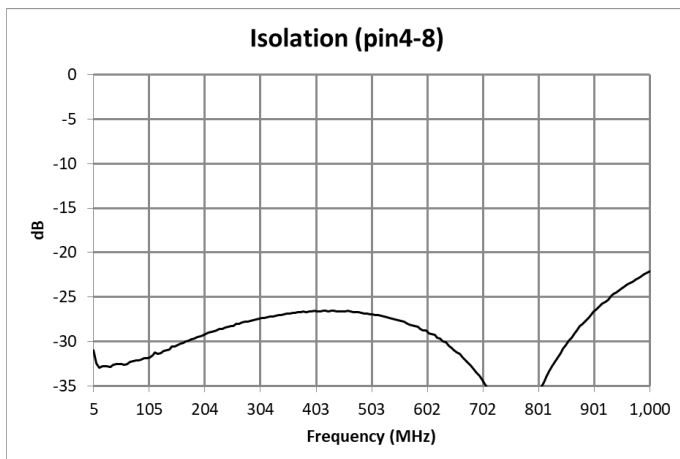
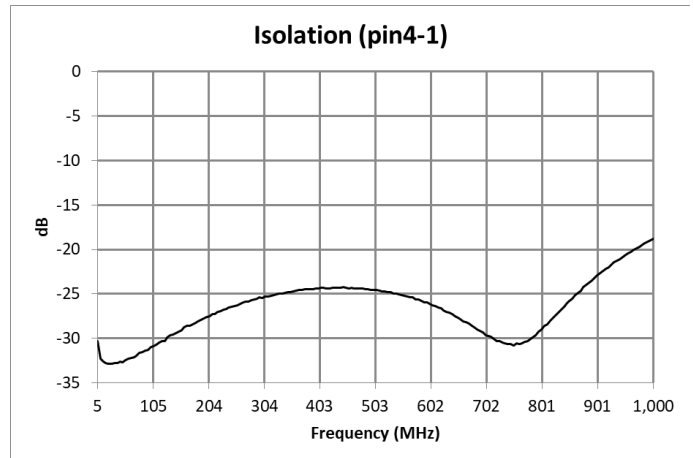
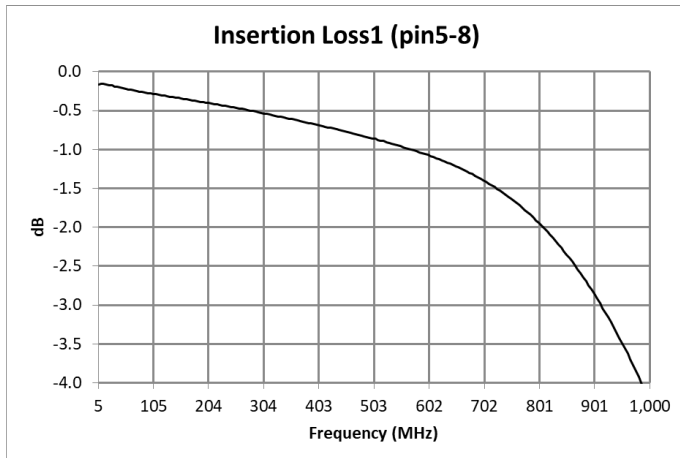
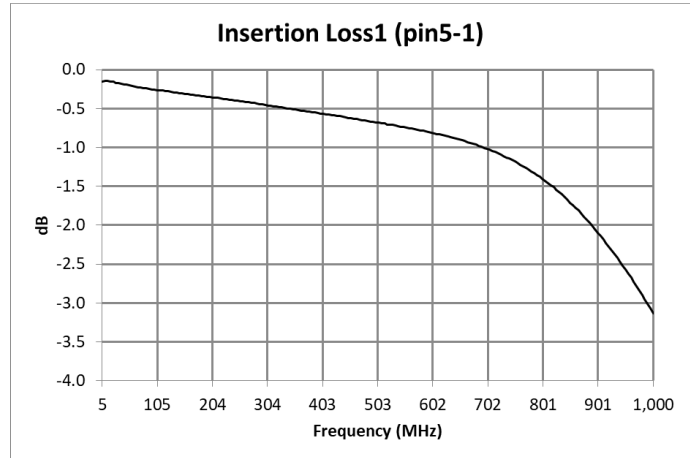
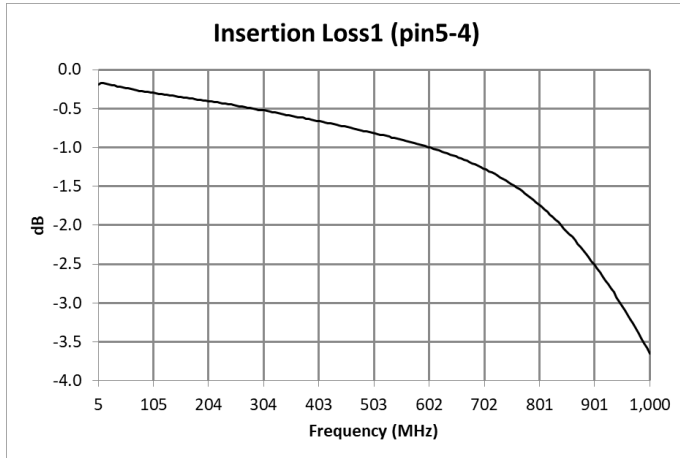
- Exceeding any one or combination of these limits may cause permanent damage to this device.
- MACOM does not recommend sustained operation near these survivability limits.

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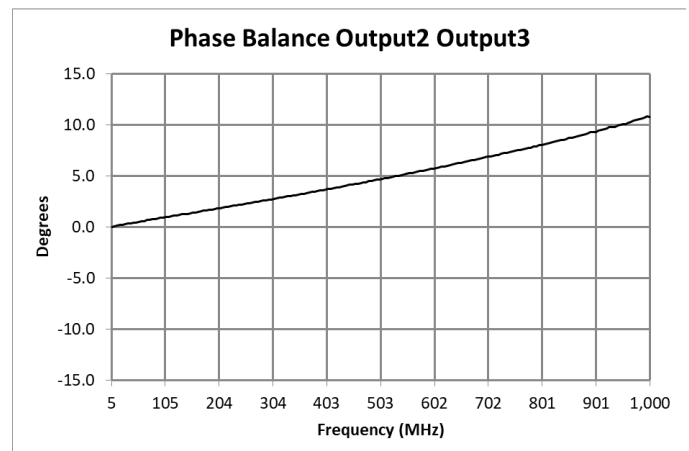
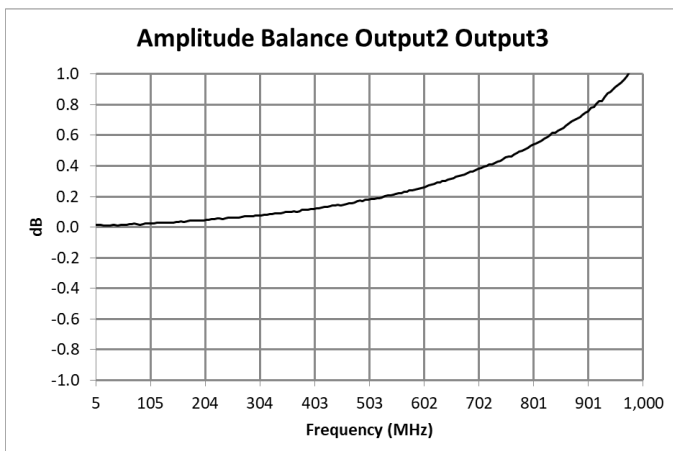
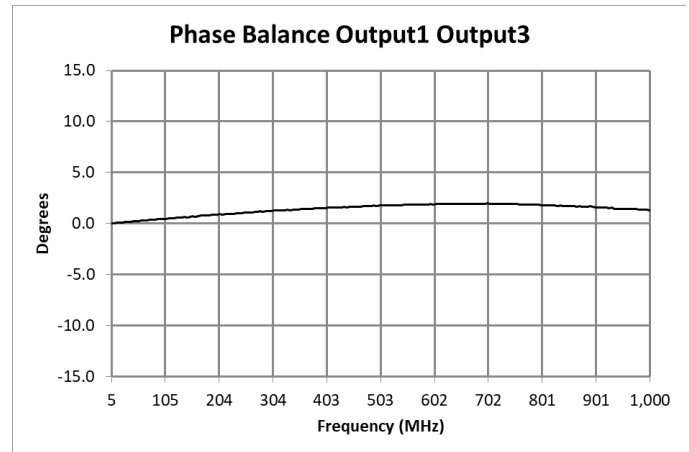
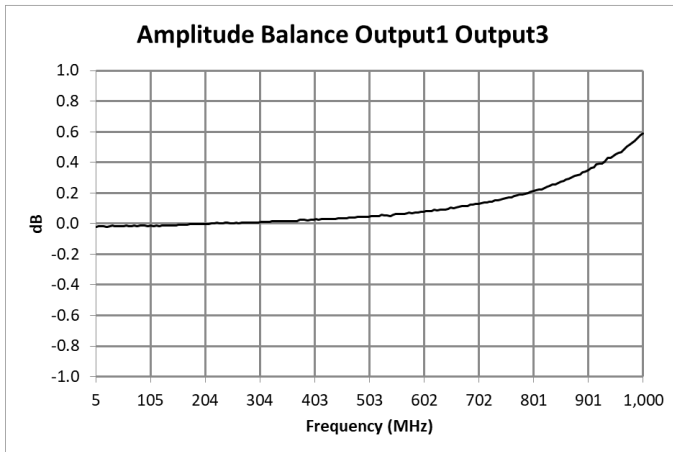
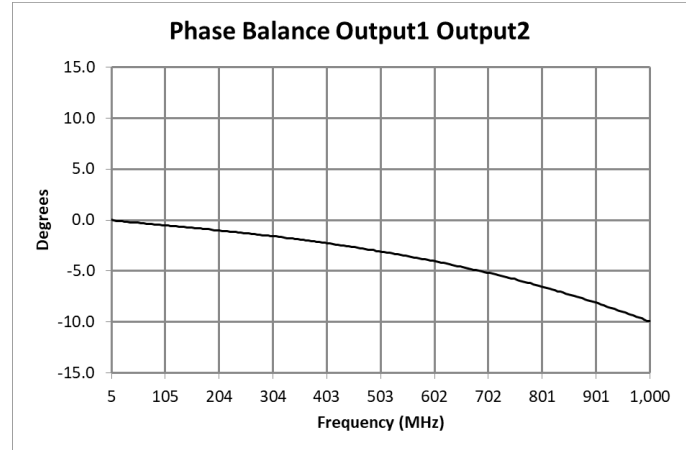
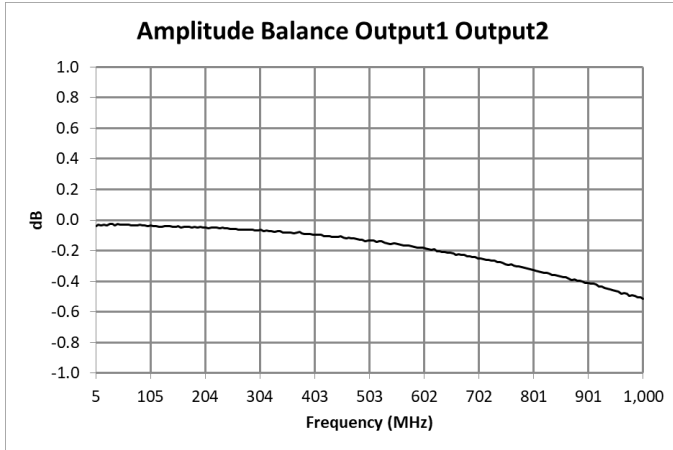


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Typical Performance Curves



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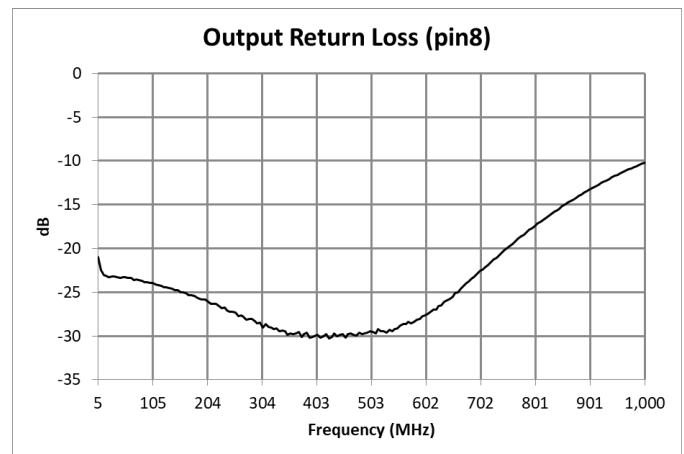
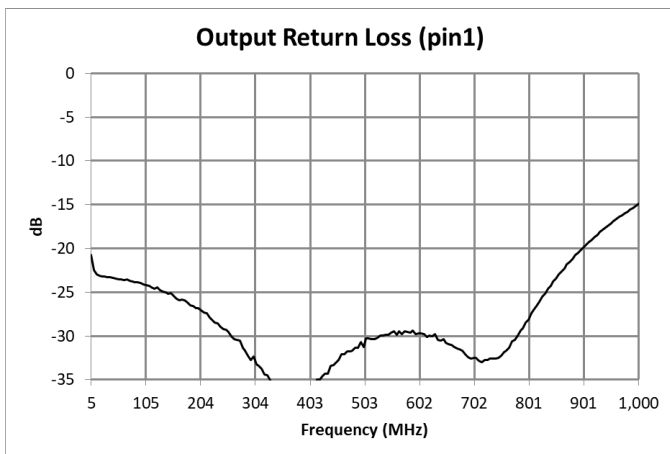
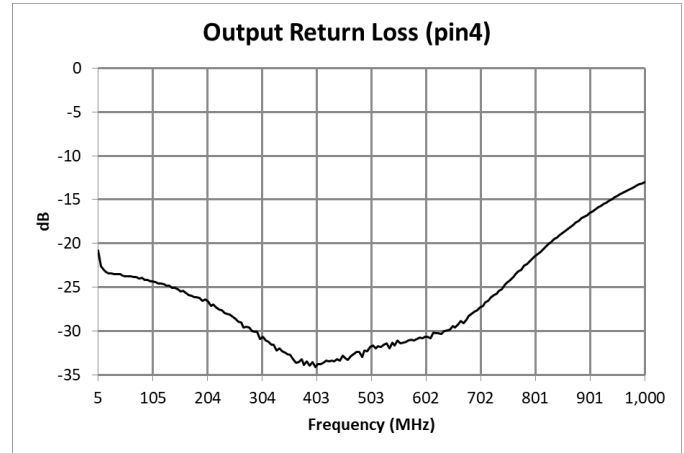
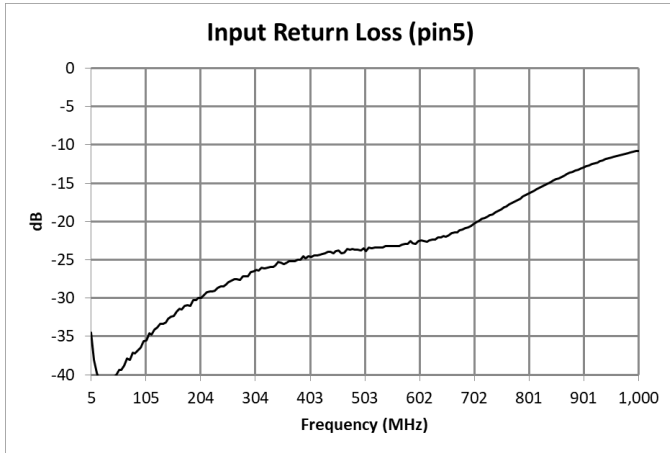


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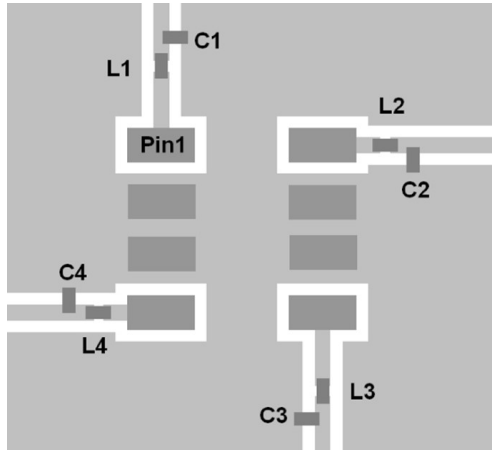
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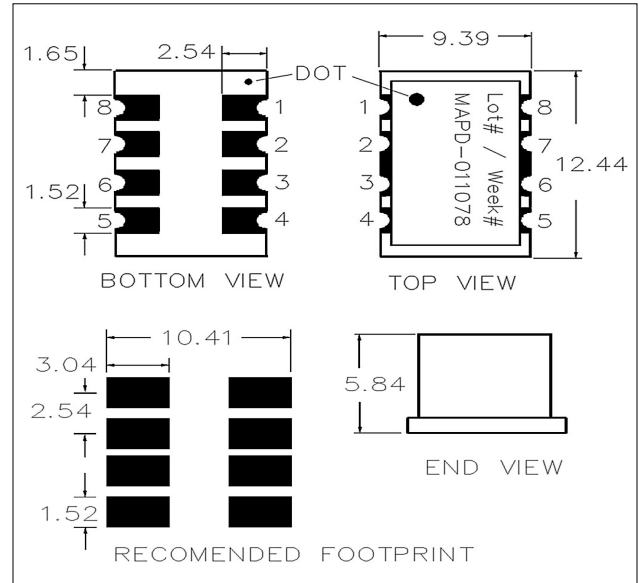


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Recommended PCB footprint



Outline Drawing^{4,5,6,7}



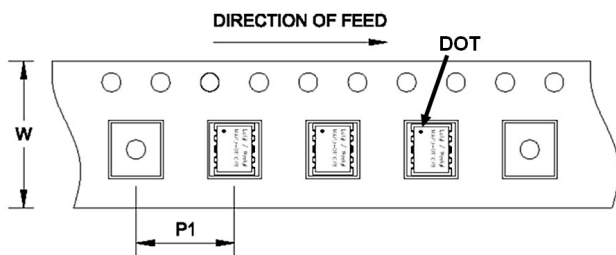
External SMT values

Component	Units	Value
C2, C3, C4	pF	1.2
C3	-	Not used
L1	nH	3.3
L2	nH	10
L3	nH	8.2
L4	nH	12

4. Dimensions in mm.
5. Tolerance: ± 0.2 mm unless otherwise noted.
6. Model number and lot code are printed on the reel.
7. Lead plating: ENIG.

† Reference Application Note J-STD-020E for lead-free solder reflow recommendations.
Meets JEDEC moisture sensitivity level 1 requirements.
Plating is gold

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		

Revision History

Rev	Date	Change Description
V1P	2023-June-20	Engineering Release V1P after ETRR
V1	2023-June-28	Correct L1&L3, Production Release V1

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