

2-Way 0° Power Divider

5 - 1800 MHz



MAPD-011105
Rev. V2

Features

- 2-way 0 Degree
- 40 dB isolation 100 - 684 MHz
- Surface Mount Package
- Tape & Reel Packaging Available
- 260°C Reflow Compatible
- RoHS* Compliant

Applications

- CATV

Description

The MAPD-011105 is a 2 way 0 degree power divider in a surface mount package.

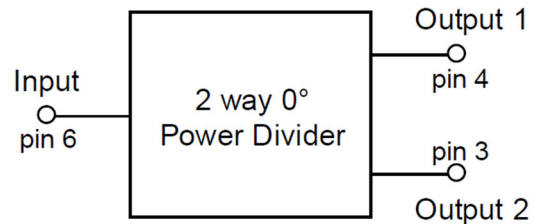
High isolation power divider for D4.0 Unified CATV applications.

Ordering Information^{1,2}

Part Number	Description
MAPD-011105	2000 piece reel
MAPD-011105-TB	Sample Board

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

Functional Schematic



Pin Configuration

Pin #	Function
1	Ground
2	External 0.3 pF shunt cap
3	Output 2 - Upstream
4	Output 1 - Downstream
5	External 0.5 pF shunt cap
6	Input

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

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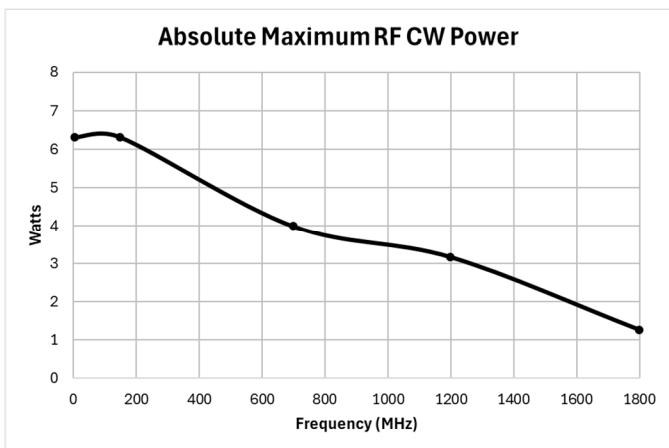
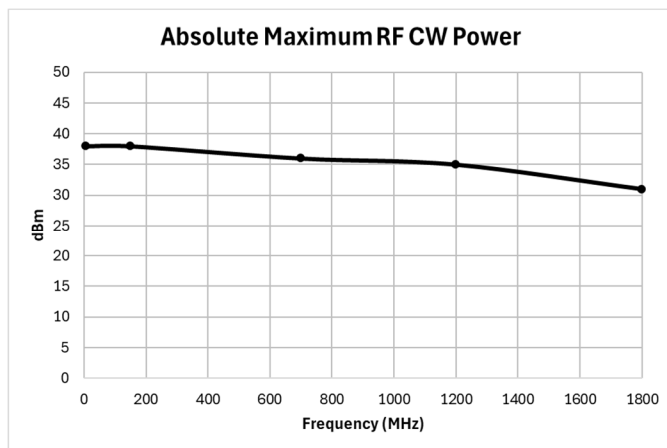
Electrical Specifications: $T_A = 25^\circ\text{C}$, $Z_0 = 75 \Omega$, $P_{IN} = 0 \text{ dBm}$

Parameter	Conditions	Units	Min.	Typ.	Max.
Power Split	-	dB	-	3	-
Insertion Loss 1 (pin 6 - pin 4)	5 - 700	dB	-	0.3	0.7
	700 - 1200			0.7	1.1
	1200 - 1800			1.1	2.2
Insertion Loss 2 (pin 6 - pin 3)	5 - 700	dB	-	0.5	1.2
	700 - 1200			1.0	1.8
	1200 - 1800			2.2	5.3
Amplitude Balance	5 - 1000	dB	-	0.2	1.0
	1000 - 1800		-	1.0	3.3
	5 - 1800		0.5	1.0	-
Phase Balance	5 - 1800	°	-	0.6	5
	5 - 1000		5	0.6	-
	1000 - 1800		14	1.0	-
Return Loss: Input (pin 6)	5 - 700	dB	16	22	-
	700 - 1800		12	20	-
Return Loss: Output 1 (pin 4)	5 - 700	dB	16	24	-
	700 - 1200		13	17	-
	1200 - 1800		11	16	-
Return Loss: Output 2 (pin 3)	5 - 700	dB	14	20	-
	700 - 1200		12	14	-
	1200 - 1800		8	13	-
Isolation (pin 3 - pin 4)	5 - 100	dB	27	45	-
	100 - 684		30	36	-
	684 - 1200		20	30	-
	1200 - 1800		8	15	-

Recommended Maximum Ratings

Parameter	Absolute Maximum
Input RF Power	See plots below ³
DC Current	500 mA
Operating Temperature	-40°C to +85°C

3. The dots on the charts are the points measured.



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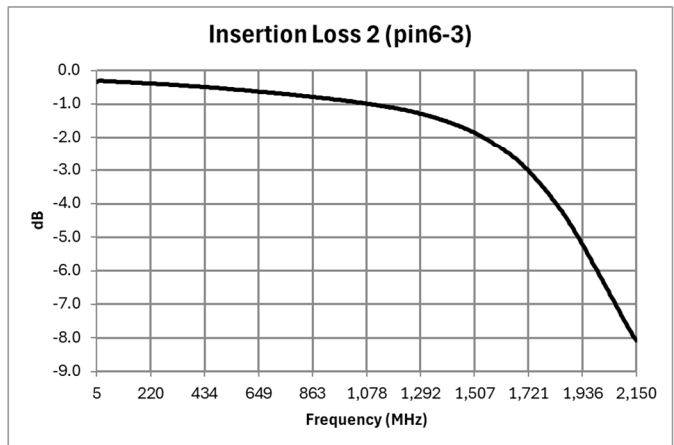
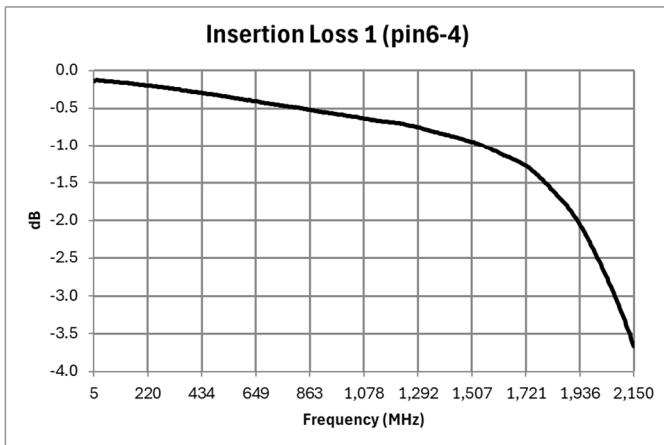
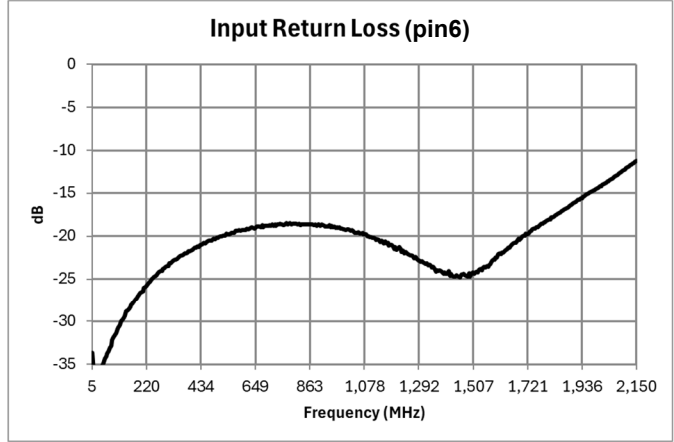
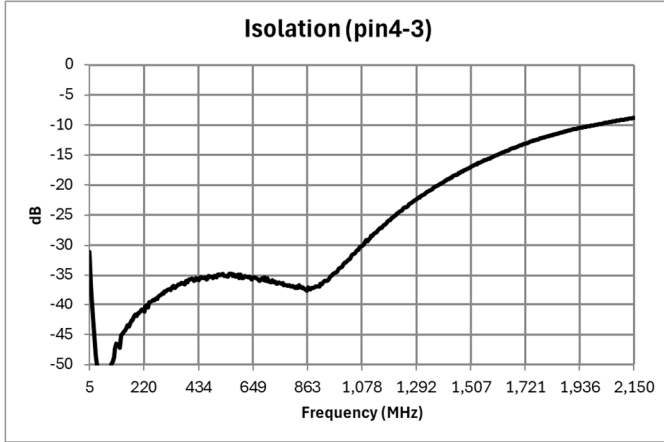
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Typical Performance Curves: $P_{IN} = 0 \text{ dBm}$, $T_A = 25^\circ\text{C}$, $Z_0 = 75 \Omega$



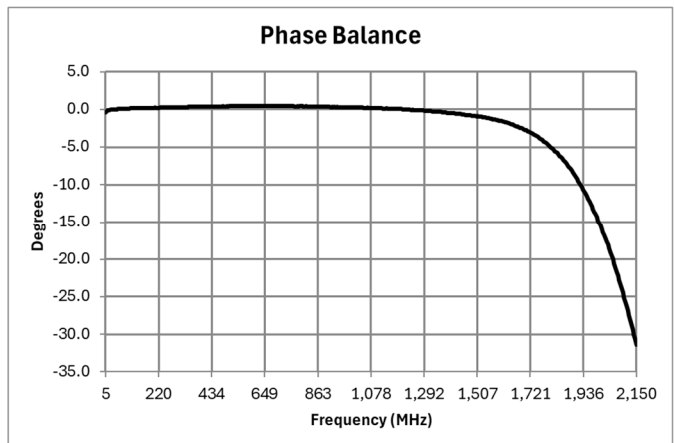
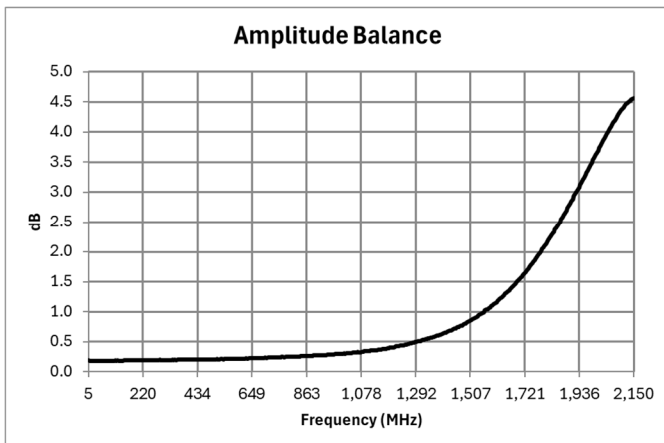
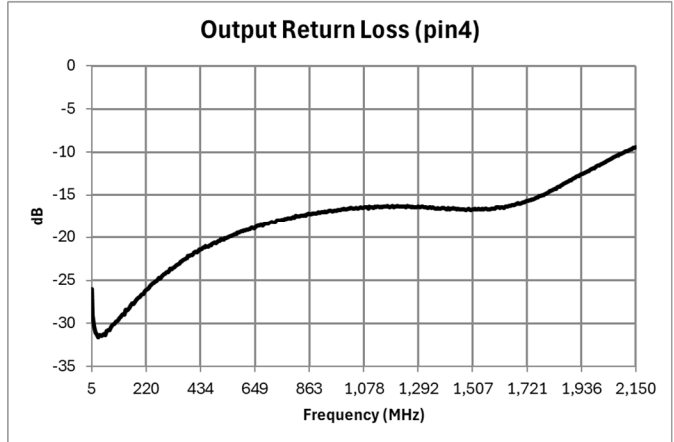
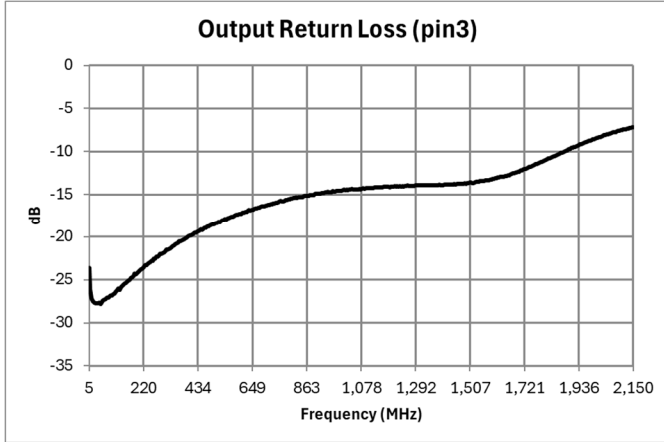
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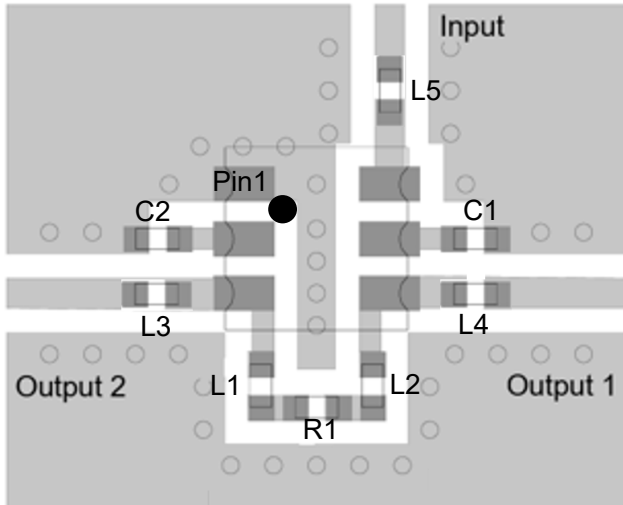


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Recommended Board Layout^{4,5}

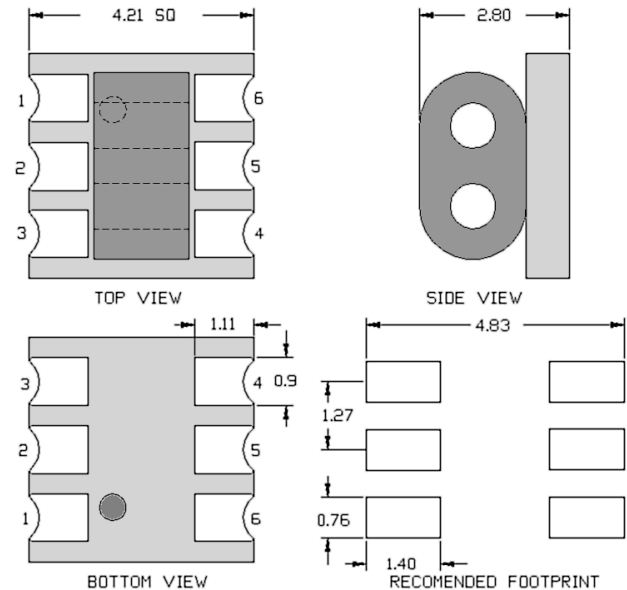


- 4. Tolerance: ± 0.2 mm unless otherwise noted
- 5. Recommended PCB layout shown above uses 1.6 mm FR4, CPWG transmission line. Width 0.70 mm, Gap 0.57 mm

Component List

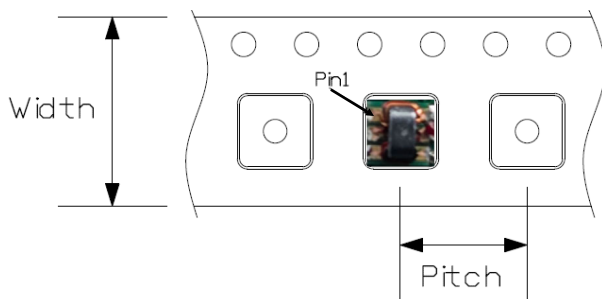
Ref. Des.	Value	Tolerance	Size
C1	0.5 pF	2%	0402
C2	0.3 pF	2%	0402
L1	120 Ω	1%	0402
L2	68 Ω	1%	0402
R1	18 nH	5%	0402
L3-L5	3.0 nH	10%	0402

Outline Drawing^{6,7,8,9}



- 6. Dimensions in mm
- 7. Tolerance: ± 0.2 mm unless otherwise noted
- 8. Model number and lot code are printed on the reel
- 9. Plating finish: ENIG on both sides, 0.05 to 0.1 μ m gold over 3 to 6 μ m nickel

Carrier Tape Orientation



Tape & Reel Information

Parameter	Units	Value
Qty per reel	-	2000
Reel Size	mm	330
Tape Width	mm	12
Pitch	mm	8

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