

# Coupler, 17.3 dB

## 5 - 1800 MHz



MACP-011118

Rev. V1

### Features

- Coupling Ratio: 17.3 dB
- Excellent Temperature Stability
- Surface Mount Package
- Available on Tape & Reel
- RoHS\* Compliant

### Applications

- CATV / Broadband

### Description

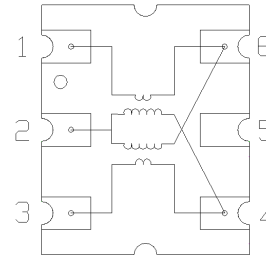
The MACP-011118 is a 17.3 dB broadband coupler in a surface mount package. It offers low loss, good isolation, good input/output matching.

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

Part Number	Package
MACP-011118	900 piece reel
MACP-011118-TB	Sample Board

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

### Functional Schematic



### Pin Configuration<sup>3</sup>

Pin #	Function
1	Coupled
2	Ground
3	Input
4	Output
5	Not Connected
6	Isolated

3. MACOM recommends connecting unused package pins to ground.

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**Electrical Specifications: Freq. = 5 - 1800 MHz,  $T_A = +25^\circ\text{C}$ ,  $Z_0 = 75 \Omega$ ,  $P_{IN} = 0 \text{ dBm}$**

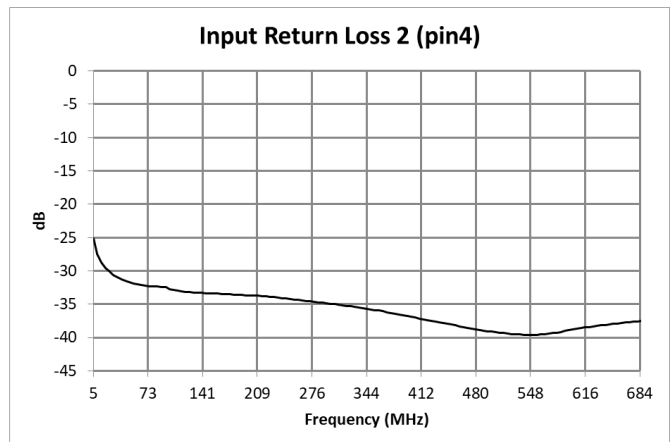
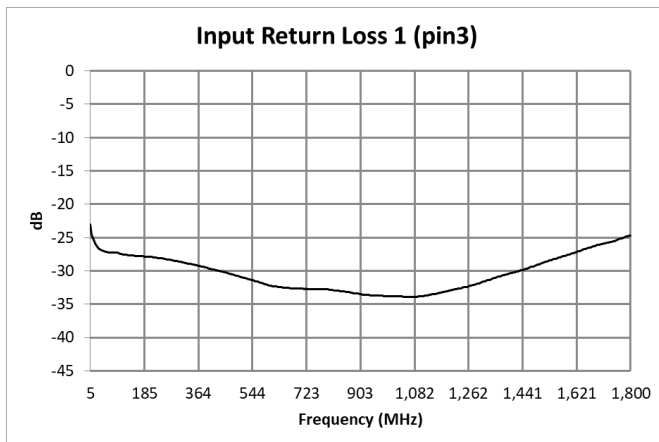
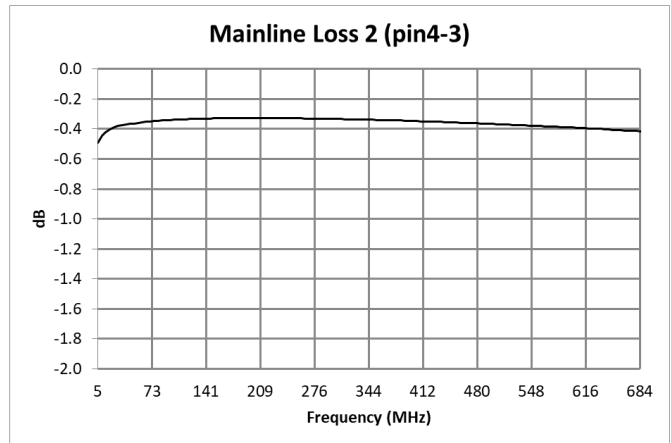
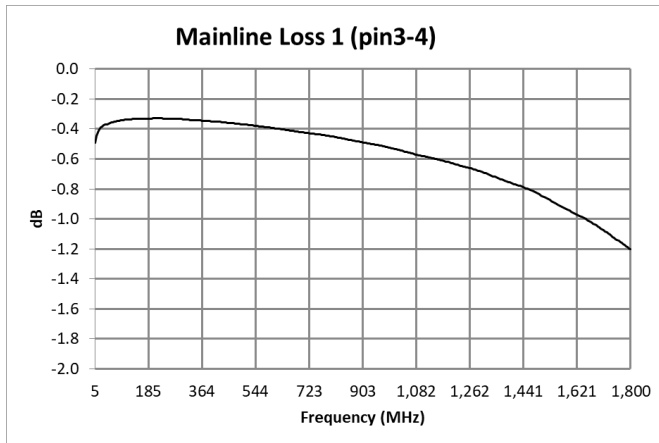
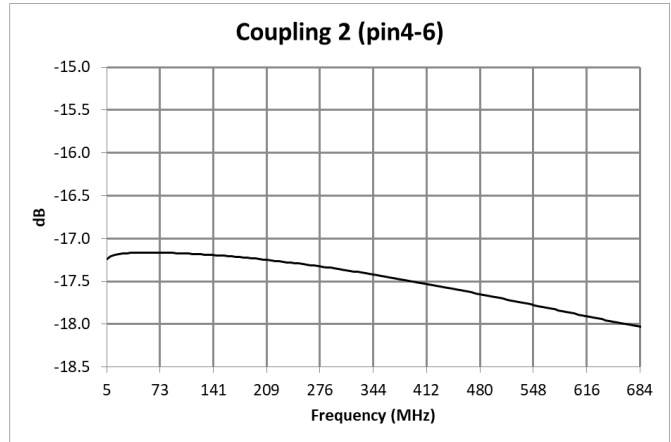
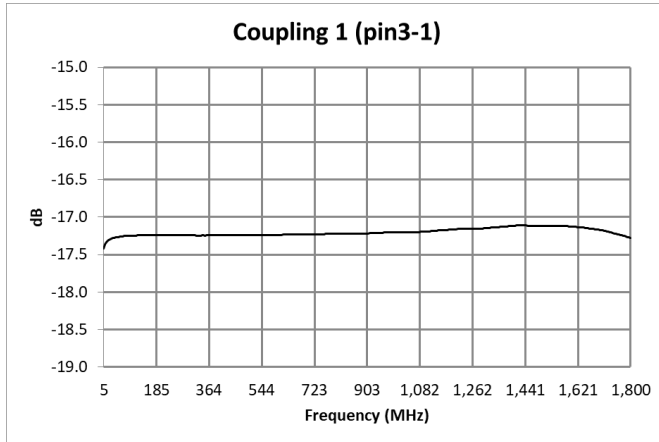
Parameter	Frequency Test Conditions (MHz)	Units	Min.	Typ.	Max.
Coupling 1 (pin 3-1)	5 - 1800	dB	16.8	17.3	17.8
Coupling 2 (pin 4-6)	5 - 684	dB	17.0	17.6	18.2
Main Line Loss 1 (pin 3-4)	5 - 1225 1225 - 1800	dB	—	0.5 1.1	0.8 1.4
Main Line Loss 2 (pin 4-3)	5 - 684	dB	—	0.4	0.7
Input Return Loss 1 (pin 3)	5 - 1225 1225 - 1800	dB	20 18	27 22	—
Input Return Loss 2 (pin 4)	5 - 684	dB	20	27	—
Output Return Loss 1 (pin 4)	5 - 1225 1225 - 1800	dB	18 15	27 20	—
Output Return Loss 2 (pin 3)	5 - 684	dB	18	27	—
Coupled Return Loss 1 (pin 1)	5 - 1225 1225 - 1800	dB	20 20	27 24	—
Coupled Return Loss 2 (pin 6)	5 - 684	dB	20	27	—
Isolation 1 (pin 3-6)	5 - 1225 1225 - 1800	dB	26 21	34 24	—
Isolation 2 (pin 4-1)	5 - 684	dB	26	37	—

### Absolute Maximum Ratings<sup>4,5</sup>

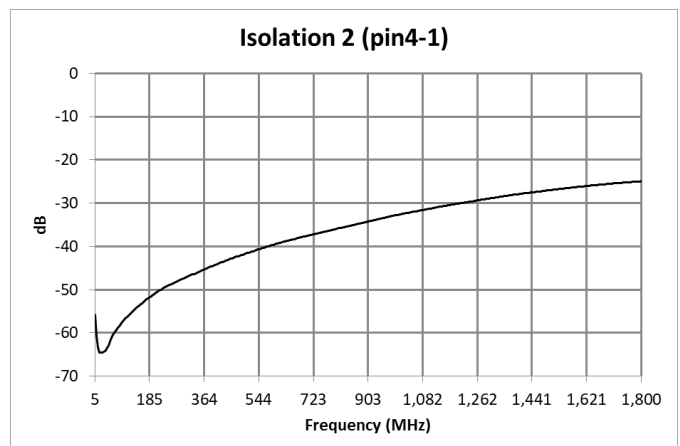
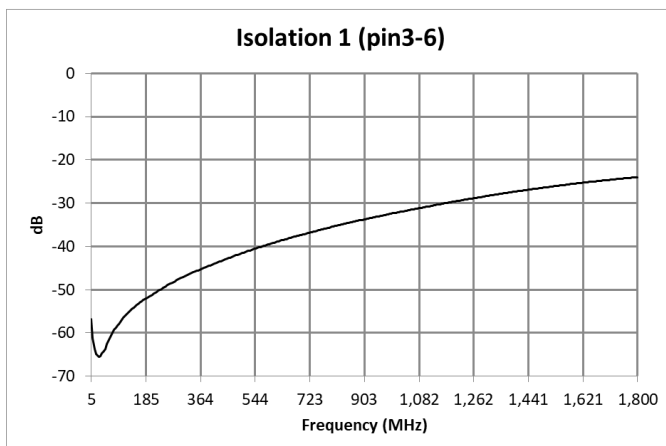
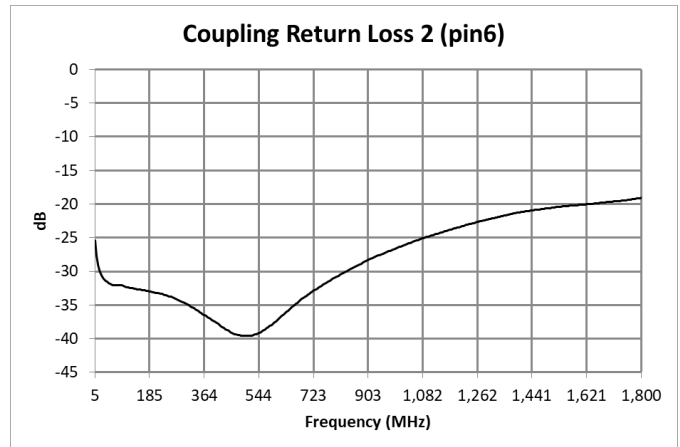
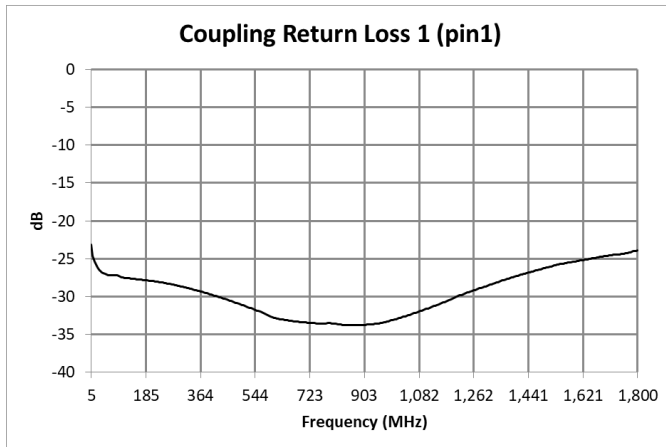
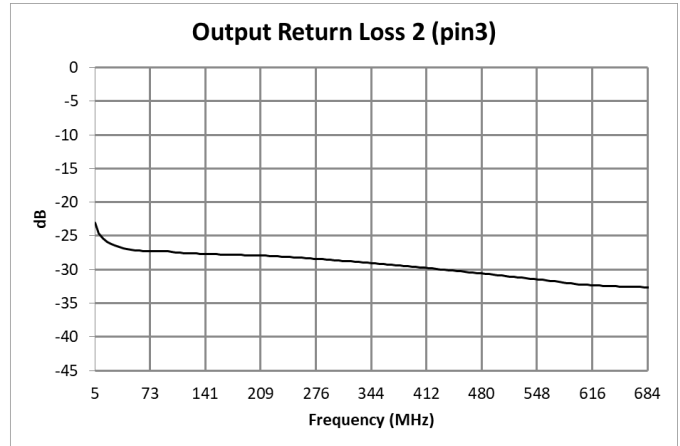
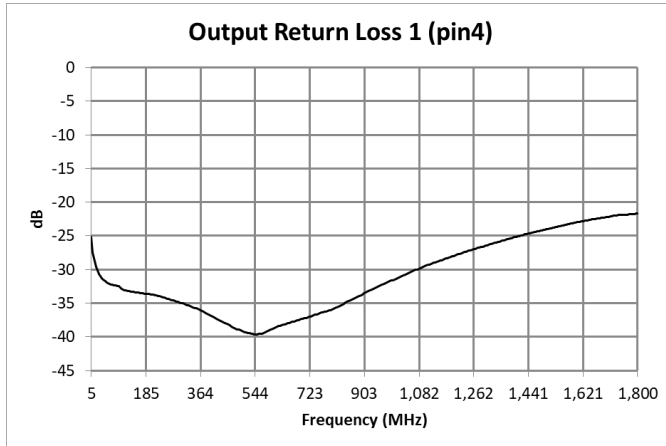
Parameter	Absolute Maximum
Input Power	2 W
DC Current	500 mA
Operating Temperature	-40°C to +85°C

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

Typical Performance Curves



Typical Performance Curves



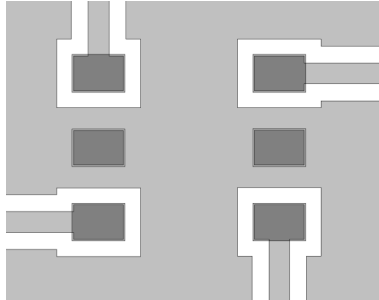
# Coupler, 17.3 dB 5 - 1800 MHz



MACP-011118

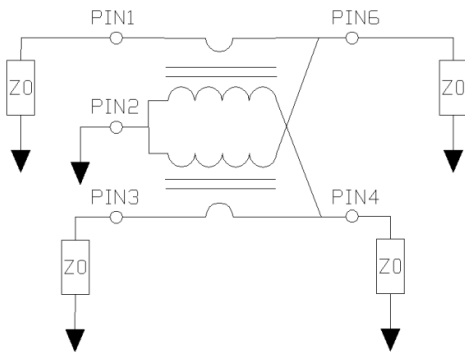
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## Recommended Board Layout<sup>6</sup>

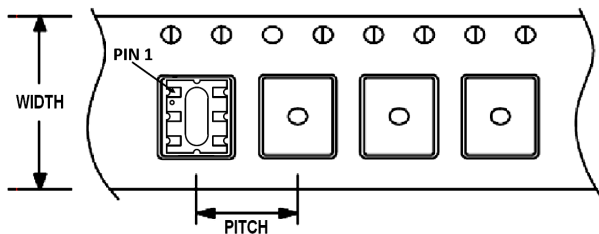


6. Recommended PCB layout shown above uses 1.6 mm FR4, Grounded coplanar wave guide, transmission line width 0.70 mm and gap 0.57 mm.

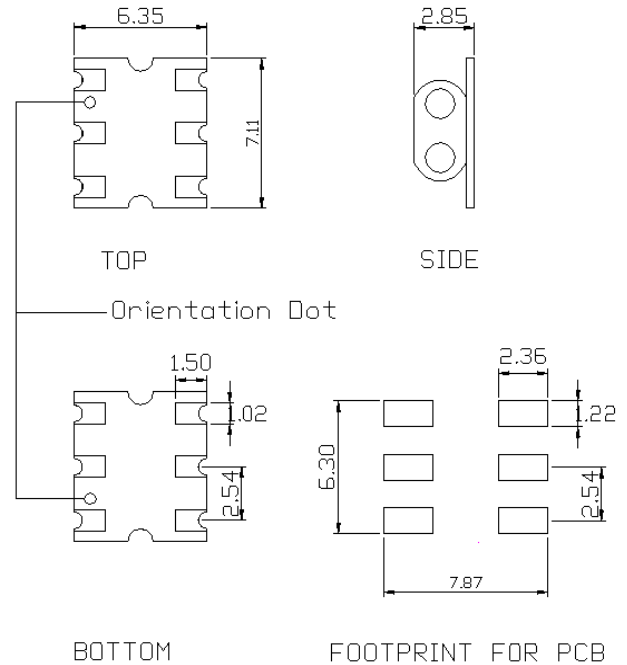
## Application Schematic



## Carrier Tape Orientation



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



- 7. Dimensions in mm.
- 8. Tolerance:  $\pm 0.2$  mm unless otherwise noted.
- 9. Model number and lot code printed on reel.
- 10. Finish: Electroless Nickel Immersion Gold.

## Tape & Reel Information

Parameter	Units	Value
Qty per reel	—	900
Reel Size	mm	330
Tape Width	mm	16
Pitch	mm	12
Orientation	—	F33
Reference Application Note ANI-019 for orientation		

Rev	Date	Change Description
V1	2024-February	Production Release

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