

# Coupler, 10.5 dB

## 5 - 1800 MHz



MACP-011120

Rev. V1

### Features

- 10.5 dB Coupling Ratio
- Surface Mount Package
- Available on Tape & Reel
- Excellent Temperature Stability
- RoHS Compliant and Pb Free
- 260°C Reflow Compatible

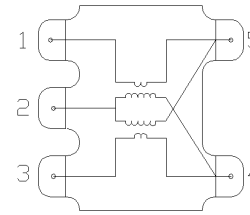
### Applications

- CATV/Broadband

### Description

The MACP-011120 is a 10.5 dB broadband coupler in a surface mount package.

### Functional Schematic



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

Pin #	Function	Pin #	Function
1	Input	4	External 75 Ω
2	Ground	5	Output
3	Coupled		

3. MACOM recommends connecting unused package pins to ground.

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

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Coupling (pin1-3)	5 - 1800 MHz	dB	10	10.5	11
Main Line Loss (pin1-5)	5 - 1800 MHz	dB	—	1.4	1.6
Input Return Loss (pin1)	5 - 50 MHz 50 - 1225 MHz 1225 - 1800 MHz	dB	14 15 17	16 18 20	—
Output Return Loss (pin5)	5 - 1225 MHz 1225 - 1800 MHz	dB	18 15	22 19	—
Coupled Return Loss (pin3)	5 - 50 MHz 50 - 1225 MHz 1225 - 1800 MHz	dB	14 15 17	16 19 21	—
Isolation (pin1-4)	5 - 1225 MHz 1225 - 1800 MHz	dB	22 20	25 23	—

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

Part Number	Package
MACP-011120	2000 piece reel
MACP-011120-TB	Sample Board

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

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

Parameter	Absolute Maximum
Input Power	1 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.

# Coupler, 10.5 dB

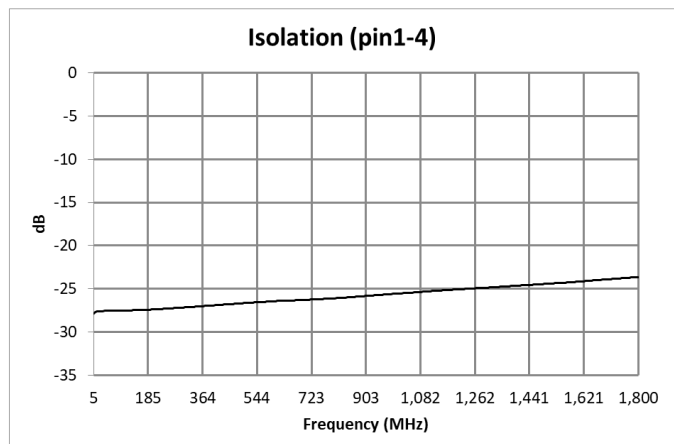
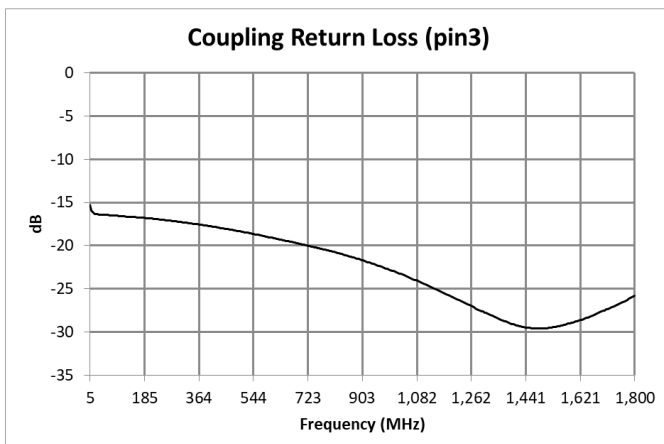
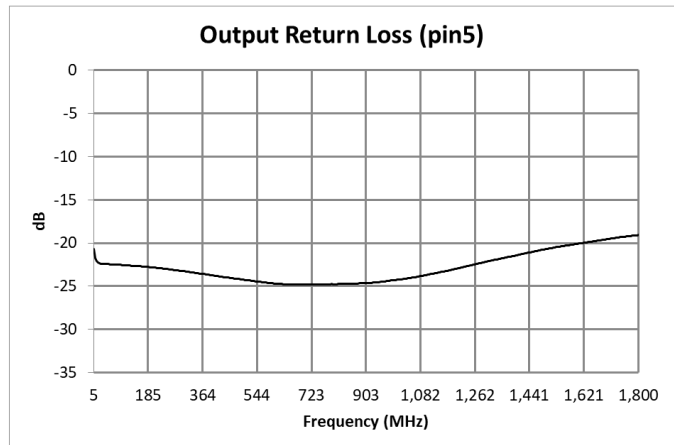
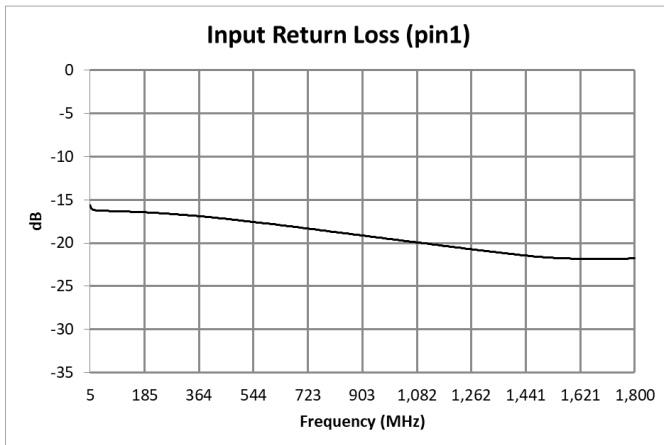
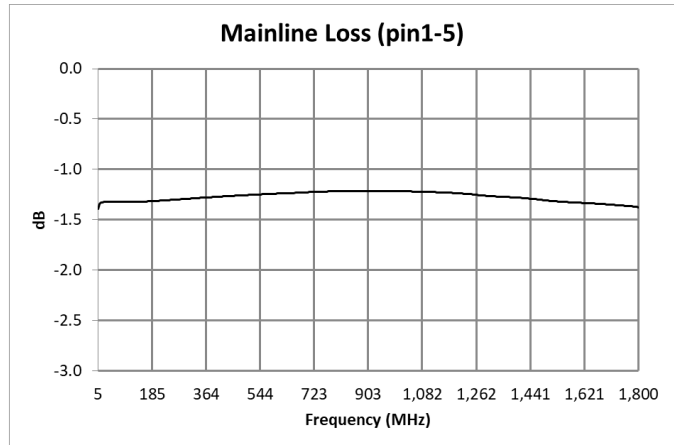
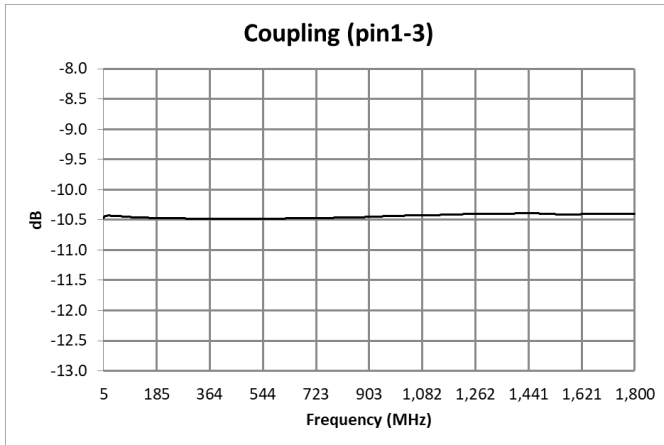
## 5 - 1800 MHz



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### Typical Performance Curves



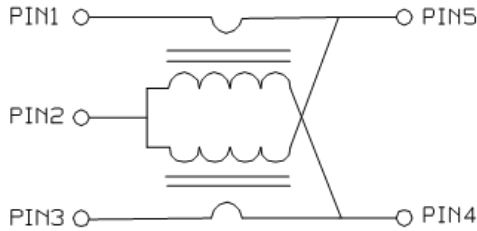
# Coupler, 10.5 dB 5 - 1800 MHz



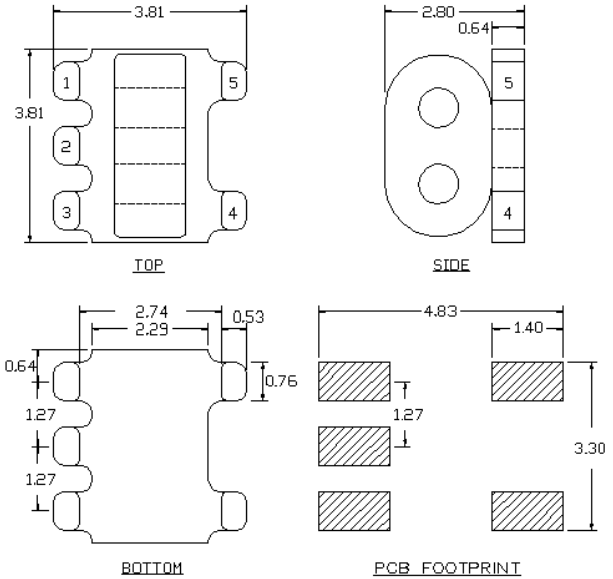
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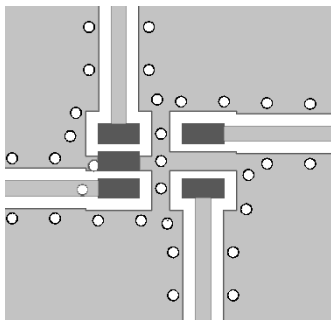
## Application Schematic



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



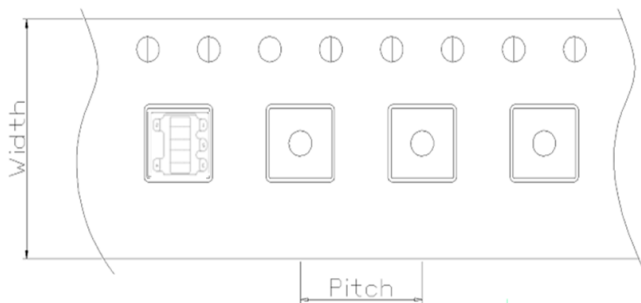
## Recommended Board Layout<sup>6</sup>



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.

- 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.

## Carrier Tape Orientation



## Tape & Reel Information

Parameter	Units	Value
Qty per reel	—	2000
Reel Size	mm	330
Tape Width	mm	12.0
Pitch	mm	8.0
Orientation	—	F33
Reference Application Note ANI-019 for orientation		

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