

# Coupler, 12.7 dB

## 5 - 1800 MHz



MACP-011083

Rev. V1

### Features

- Coupling Ratio: 12.7 dB
- Excellent Temperature Stability
- Surface Mount Package
- Available on Tape & Reel
- RoHS\* Compliant

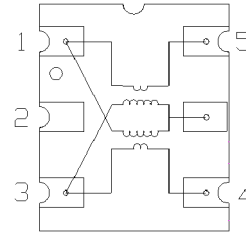
### Applications

- CATV / Broadband

### Description

The MACP-011083 is a 12.7 dB broadband coupler in a surface mount package.

### Functional Schematic



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

Pin #	Function	Pin #	Function
1	Input	4	External 75 $\Omega$
2	Ground	5	Output
3	Coupled		

3. MACOM recommends connecting unused package pins to ground.

### 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 (pin 1-3)	5 - 1800	dB	12.2	12.7	13.2
Main Line Loss (pin 1-5)	5 - 500 500 - 1225 1225 - 1800	dB	—	0.7 0.8 1.3	0.9 1.1 1.6
Input Return Loss (pin 1)	5 - 1225 1225 - 1800	dB	18 15	25 19	—
Output Return Loss (pin 5)	5 - 1225 1225 - 1800	dB	18 16	24 20	—
Coupled Return Loss (pin 3)	5 - 1225 1225 - 1800	dB	17 15	19 17	—
Isolation (Pin 1-4)	5 - 1225 1225 - 1800	dB	20 17	24 20	—

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

Part Number	Package
MACP-011083	900 piece reel
MACP-011083-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	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.

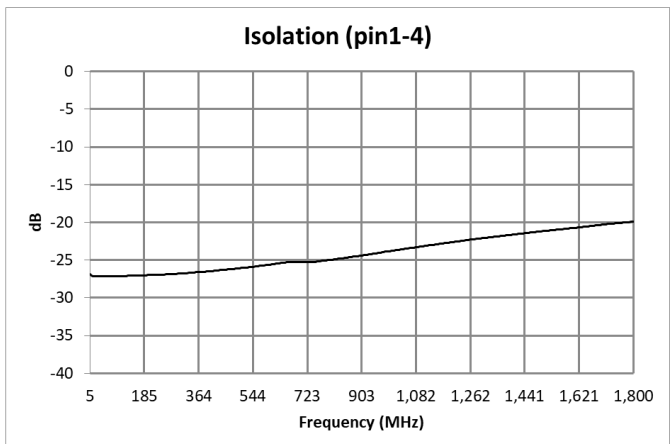
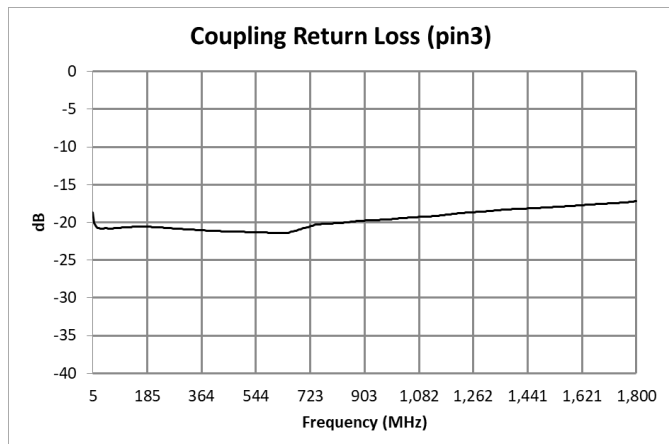
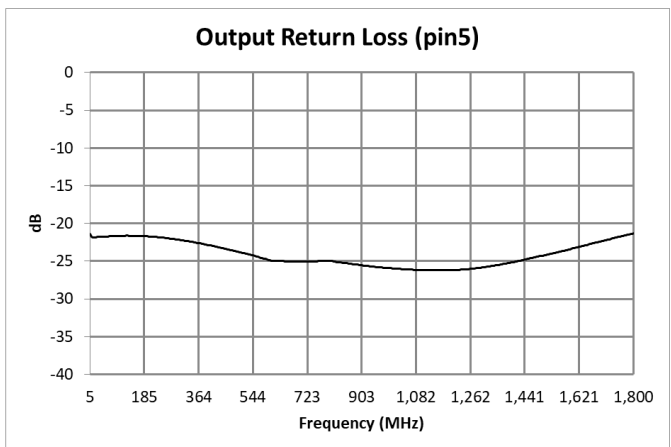
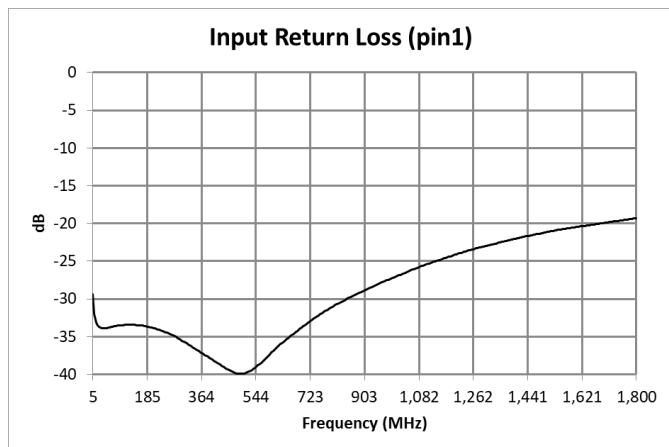
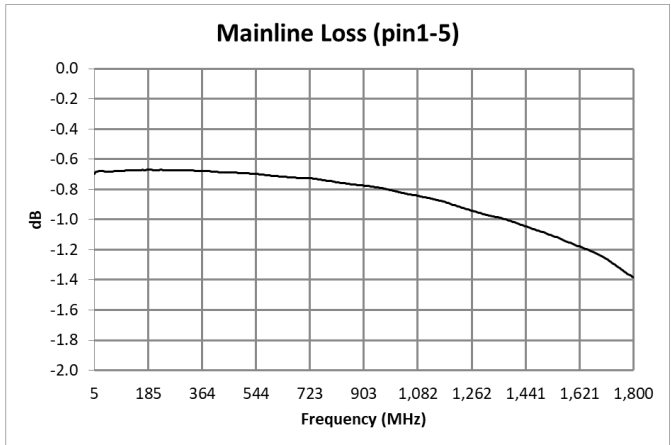
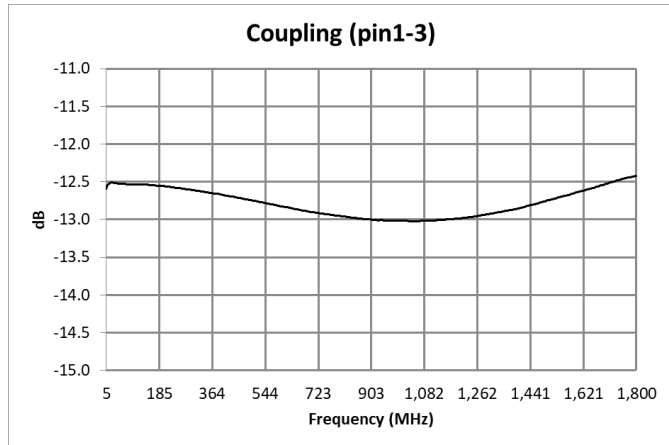
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## Typical Performance Curves



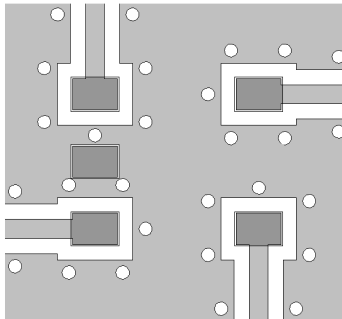
# Coupler, 12.7 dB 5 - 1800 MHz



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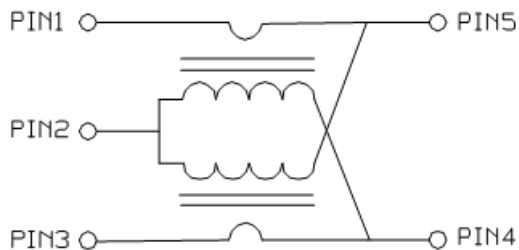
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## Recommended Board Layout<sup>6</sup>

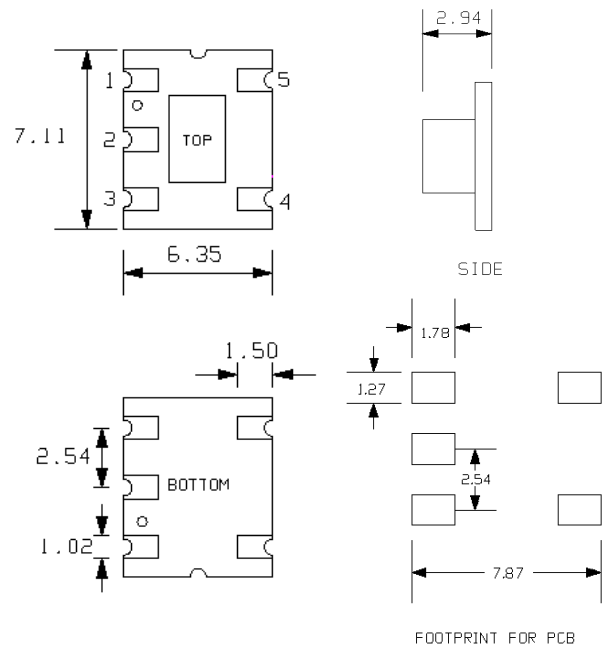


6. Recommended PCB layout shown above uses 1.6 mm FR4, Grounded coplanar wave guide, transmission line width 0.70 mm and gap 0.57 mm.

## Application Schematic

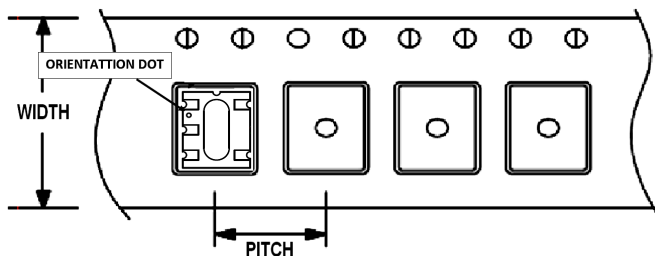


## Outline Drawing<sup>7,8,9,10</sup>



- 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.

## Carrier Tape Orientation



## Tape & Reel Information

Parameter	Units	Value
Qty per reel	—	900
Reel Size	mm	330
Tape Width	mm	16.0
Pitch	mm	12.0
Orientation	—	F33
Reference Application Note ANI-019 for orientation		

Rev	Date	Change Description
V1	2024-May	Production Release

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