

# Coupler, 16 dB

## 5 - 1200 MHz



MACP-011109

Rev. V1

### Features

- Coupling Ratio: 16 dB
- Surface Mount Package
- Excellent Temperature Stability
- Available on Tape & Reel
- RoHS\* Compliant

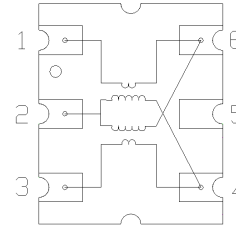
### Applications

- CATV / Broadband

### Description

The MACP-011109 is a 16 dB broadband coupler in a surface mount package. It offers low loss, good isolation, good input/output matching and exceptional matching in return loss.

### Functional Schematic



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

Pin #	Function	Pin #	Function
1	Input	4	External 75 $\Omega$
2	Ground	5	Not Connected
3	Coupled	6	Output

3. MACOM recommends connecting unused package pins to ground.

### Electrical Specifications: Freq. = 5 - 1200 MHz, $T_A = +25^\circ\text{C}$ , $Z_0 = 75 \Omega$ , $P_{IN} = 0 \text{ dBm}$

Parameter	Units	Min.	Typ.	Max.
Coupling, (pin 1-3)	dB	14.75	15.5	16.25
Main Line Loss, (pin 1-6)	dB	—	0.5	0.8
Input Return Loss, (pin 1)	dB	20	23	—
Output Return Loss, (pin 6)	dB	20	23	—
Coupled Return Loss, (pin 3)	dB	17	23	—
Isolation, (pin 3-6)	dB	23	28	—

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

Part Number	Package
MACP-011109	900 piece reel
MACP-011109-TB	Sample Board

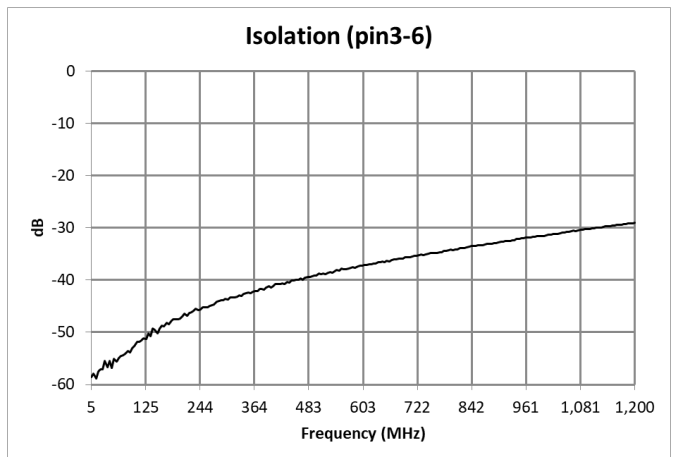
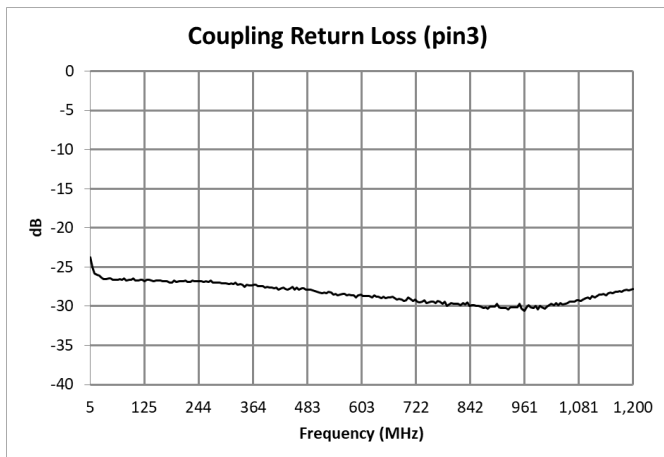
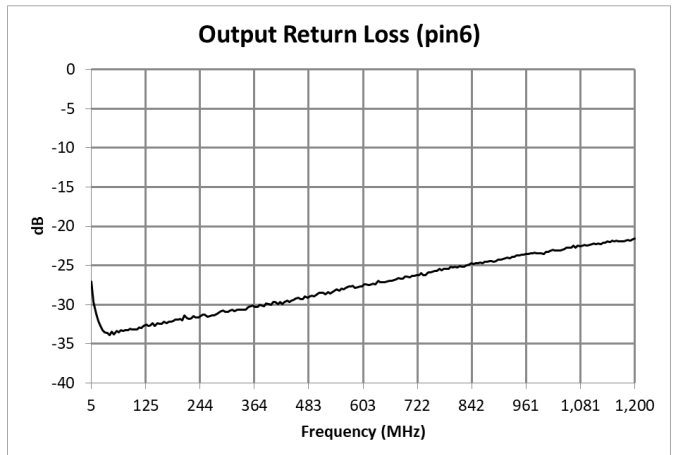
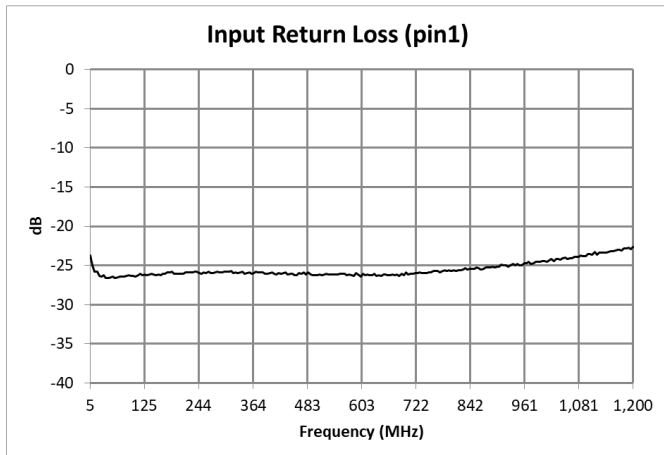
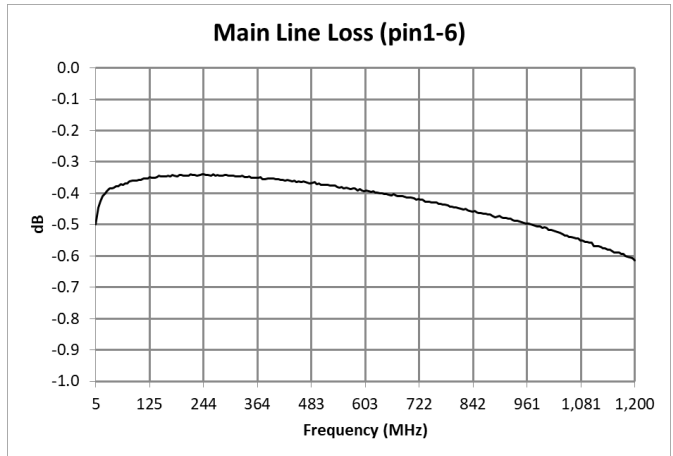
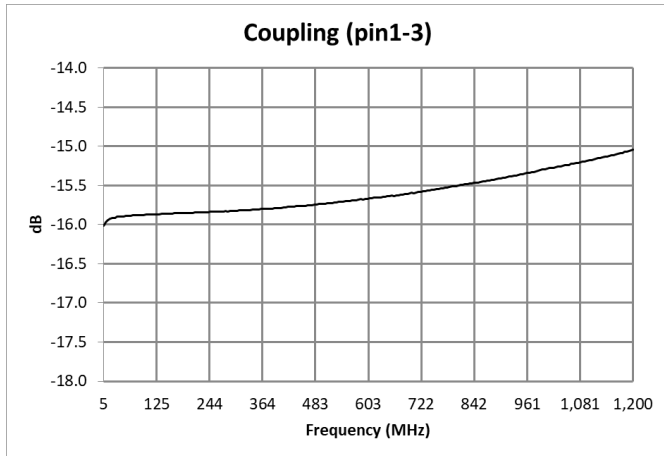
1. Reference Application Note M513 for reel size information.
2. All sample boards include 5 loose parts.

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

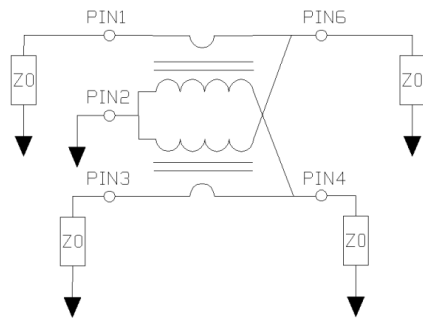
Parameter	Absolute Maximum
Input Power	2 W
DC Current	500 mA
Operating Temperature	-40°C to +85°C

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.

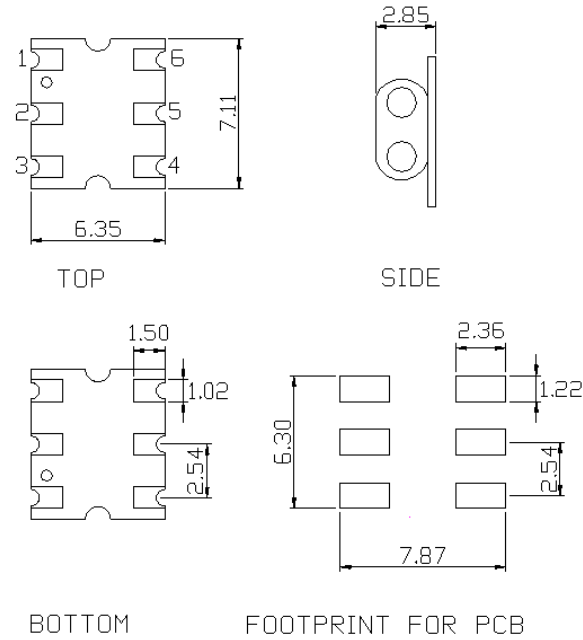
Typical Performance Curves



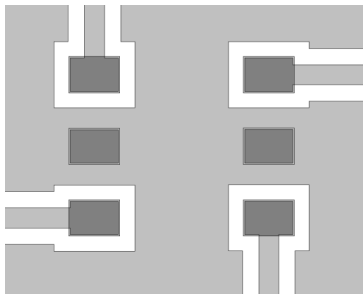
### Application Schematic<sup>6</sup>



### Outline Drawing<sup>8,9,10,11</sup>



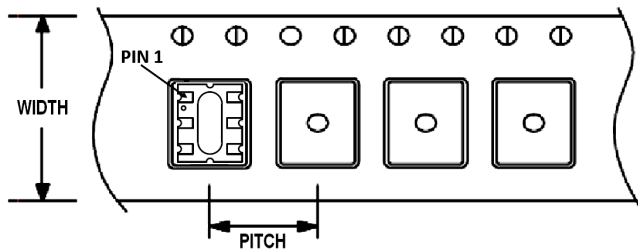
### Recommended Board Layout<sup>7</sup>



7. 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.

- 8. Dimensions in mm.
- 9. Tolerance:  $\pm 0.2$  mm unless otherwise noted.
- 10. Model number and lot code printed on reel.
- 11. 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		

### Revision History

Rev	Date	Change Description
V1	2023-Sep-15	Production Release

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