

# Coupler, 14.5 dB 5 - 1800 MHz



MACP-011099

Rev. V1

## Features

- 14.5 dB Coupling Ratio
- Mirrored version of MACP-011081
- Surface Mount Package
- Available on Tape & Reel
- Excellent Temperature Stability
- RoHS Compliant

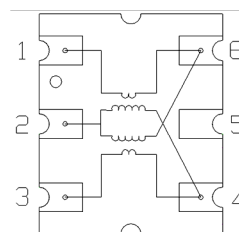
## Applications

- High Volume CATV / Broadband

## Description

The MACP-011099 is a 14.5 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	Coupled	4	Output
2	Ground	5	Not connected
3	Input	6	External 75 $\Omega$

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	Test Conditions	Units	Min.	Typ.	Max.
Coupling (pin3-1)	5 - 1225 MHz 1225 - 1800 MHz	dB	14	14.5	15
Main Line Loss (pin3-4)	5 - 1225 MHz 1225 - 1800 MHz	dB	—	0.9 1.1	0.9 1.3
Input Return Loss (pin3)	5 - 1225 MHz 1225 - 1800 MHz	dB	18 17	21 22	—
Output Return Loss (pin4)	5 - 1225 MHz 1225 - 1800 MHz	dB	18 16	24 22	—
Coupled Return Loss (pin1)	5 - 1225 MHz 1225 - 1800 MHz	dB	18 17	21 22	—
Isolation (pin3-6)	5 - 1225 MHz 1225 - 1800 MHz	dB	28 24	35 25	—

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

Part Number	Package
MACP-011099	900 piece
MACP-011099-TB	Sample Board

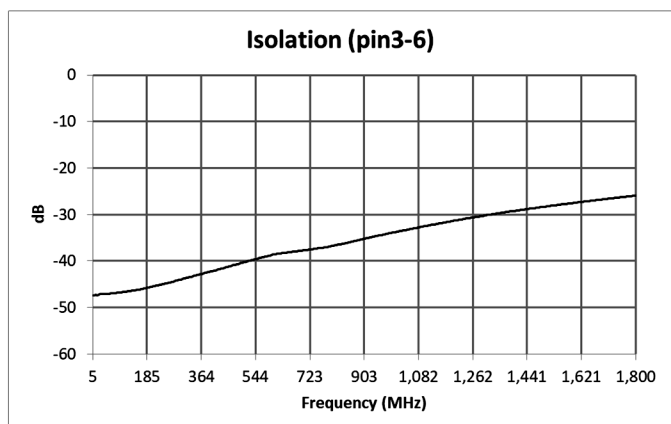
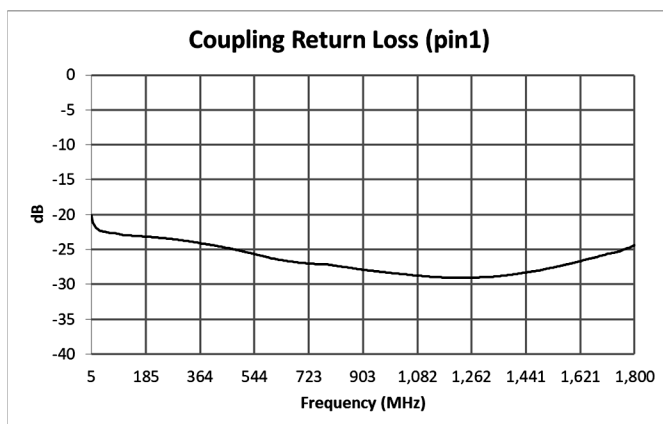
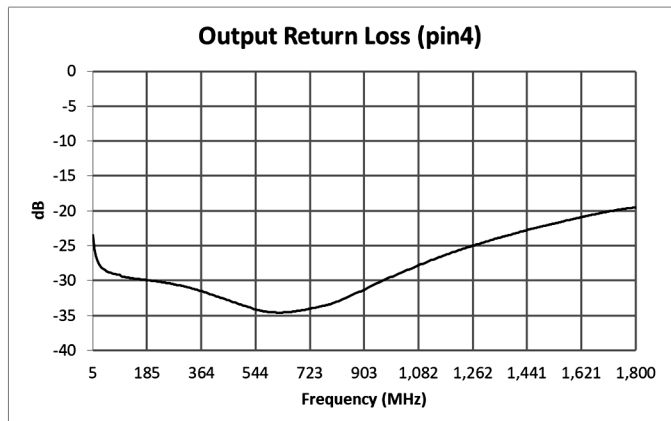
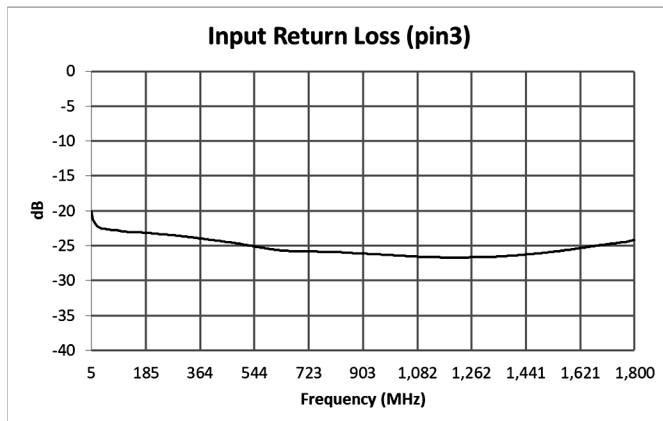
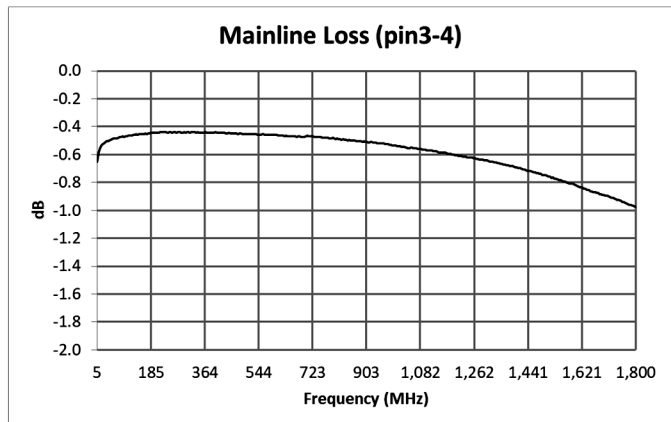
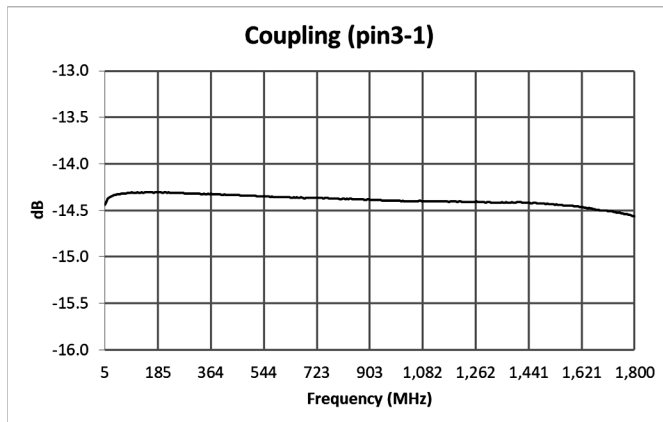
1. Reference Application Note M513 for reel size information.
2. All sample boards include 5 loose parts.

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

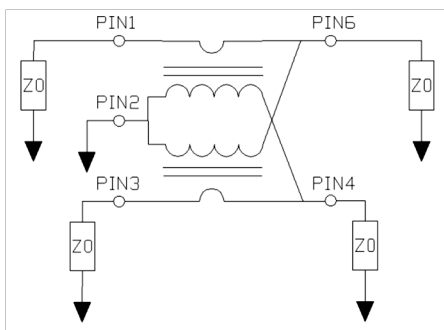
Parameter	Absolute Maximum
Input Power	2 W
DC Current	500 mA
Operating Temperature	-40°C to +85°C

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.

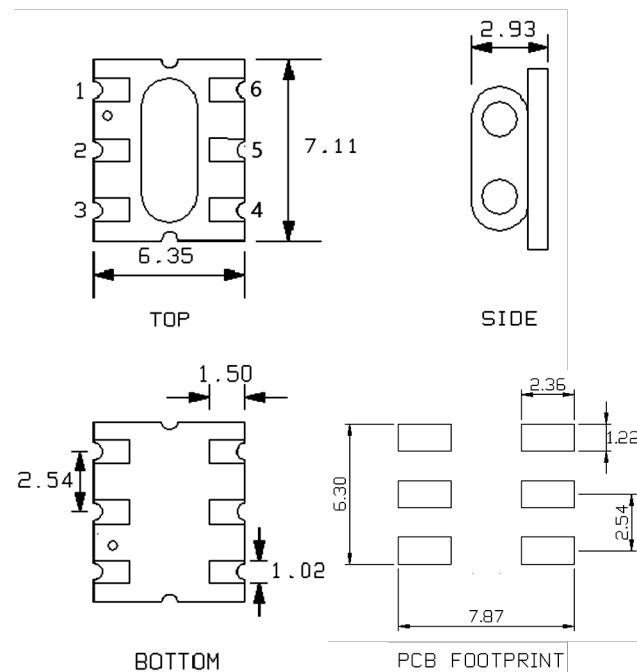
## Typical Performance Curves



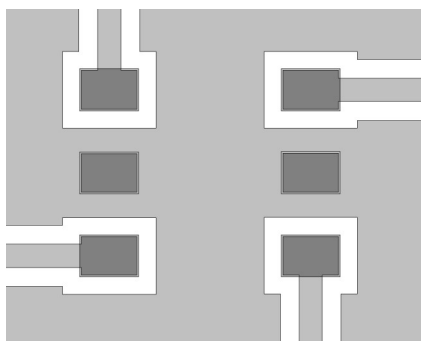
## Application Schematic<sup>6</sup>



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



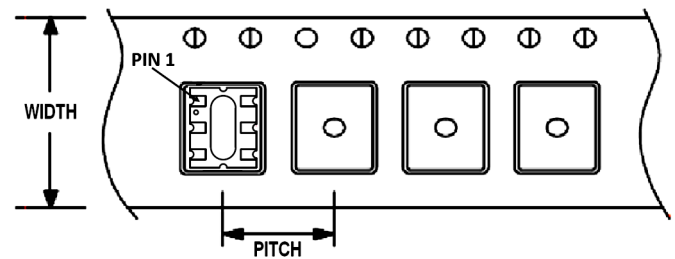
## Recommended Board Layout<sup>7</sup>



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		

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