

# Coupler, 16 dB 5 - 1200 MHz



MACP-011090

Rev. V1

## Features

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

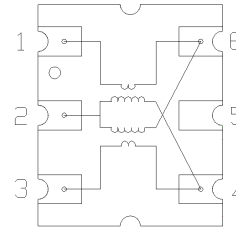
## Applications

- CATV, Broadband

## Description

The MACP-011090 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 Ω
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<sub>A</sub> = +25°C, Z<sub>0</sub> = 75 Ω, P<sub>IN</sub> = 0 dBm

Parameter	Freq. Test Conditions (MHz)	Units	Min.	Typ.	Max.
Coupling Ratio	—	dB	—	16	—
Coupling (Pin 1 - Pin 3)	5 - 40 40 - 870 870 - 1200	dB	15.3 15.3 15.3	15.7 16.4 17.0	16.2 17.0 18.0
Main Line Loss (Pin 1 - Pin 6)	5 - 40 40 - 870 870 - 1200	dB	—	0.4 1.0 1.6	0.8 1.4 2.0
Input Return Loss (Pin 1)	5 - 40 40 - 870 870 - 1200	dB	20 19 15	27 24 18	—
Output Return Loss (Pin 6)	5 - 40 40 - 870 870 - 1200	dB	20 16 12	32 23 15	—
Coupling Return Loss (Pin 3)	5 - 40 40 - 870 870 - 1200	dB	—	27 20 17	—
Isolation (Pin 1 - Pin 4)	5 - 40 40 - 870 870 - 1200	dB	—	41 32 27	—

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

Part Number	Package
MACP-011090	900 piece reel
MACP-011090-TB	Sample Board

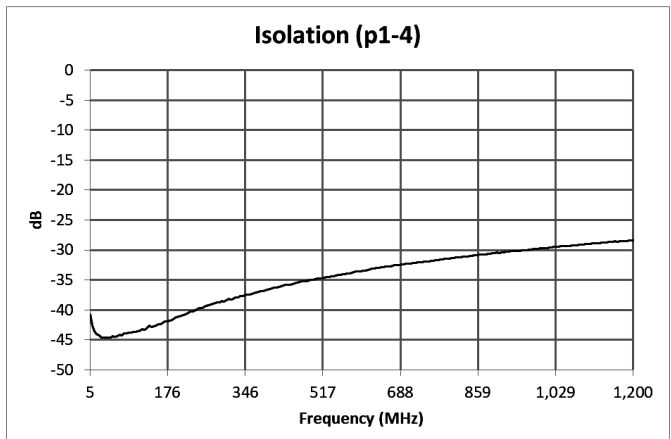
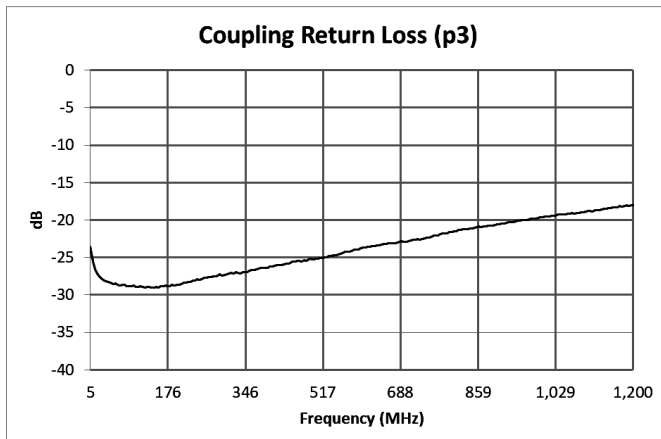
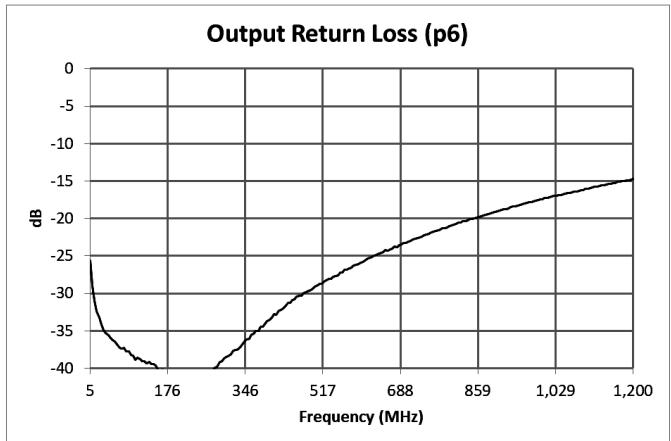
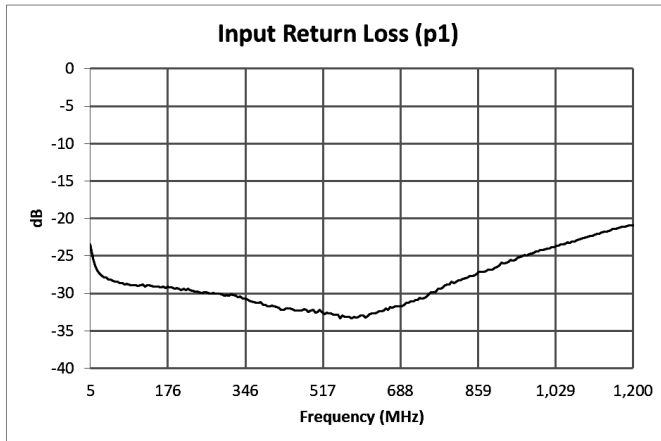
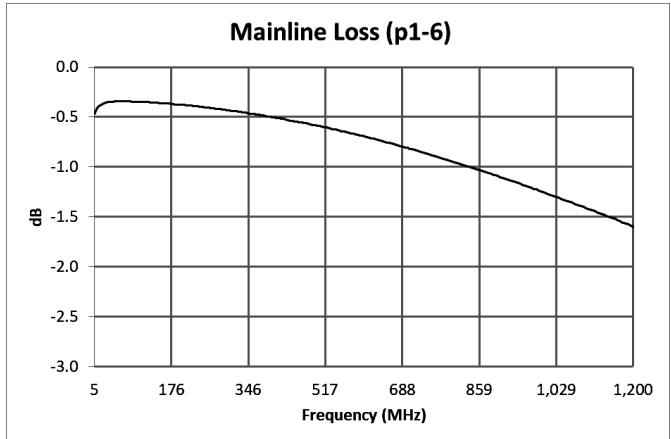
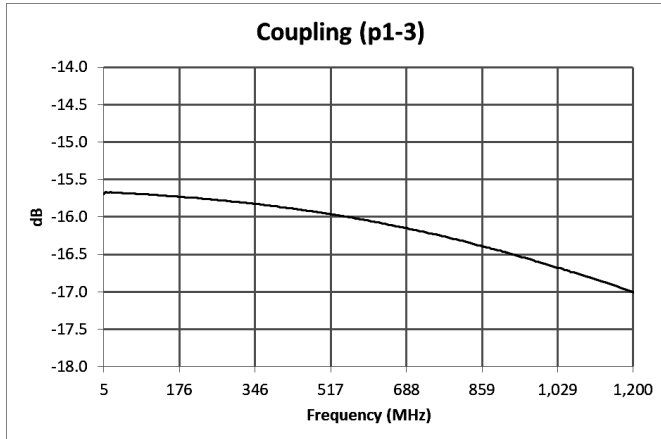
1. Reference Application Note M513 for reel size information.
2. All sample boards include 5 loose parts.

## 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.

Typical Performance Curves



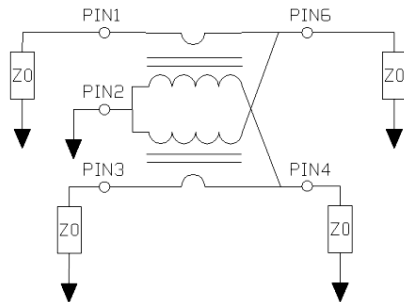
# Coupler, 16 dB 5 - 1200 MHz



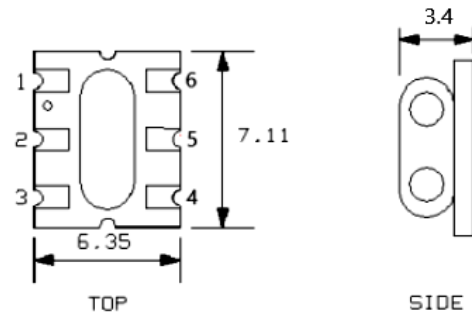
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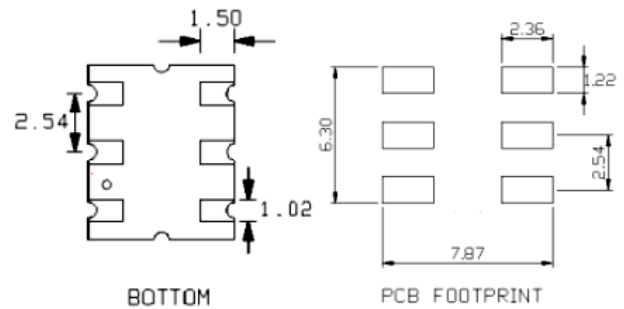
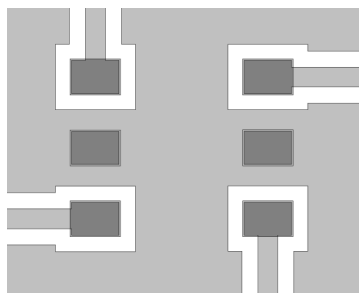
## Application Schematic<sup>6</sup>



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



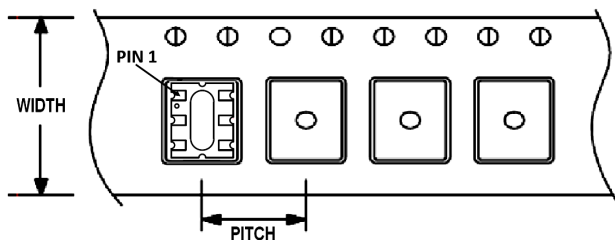
## Recommended Board Layout<sup>7</sup>



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	—	F15
Reference Application Note ANI-019 for orientation		

# Coupler, 16 dB

## 5 - 1200 MHz



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