

## 12.5 dB Coupler 5 - 1225 MHz

Rev. V1

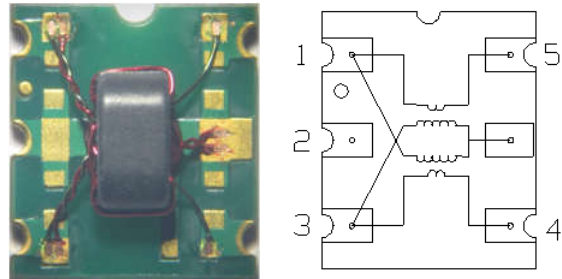
### Features

- 12.5 dB Coupling Ratio
- Surface Mount Package
- Available on Tape and Reel
- High Isolation from 100 - 700 MHz
- Excellent Temperature Stability
- RoHS Compliant and Pb Free
- 260°C Reflow Compatible

### Description

The MACP-011062 is a 12.5 dB coupler in a surface mount package. Ideally suited for CATV, Full Duplex and DOCSIS 3.1 applications.

### Functional Schematic



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

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

3. MACOM recommends connecting unused package pins to ground.

### Electrical Specifications: $T_A = 25^\circ\text{C}$ , $Z_0 = 75 \Omega$ , $P_{IN} = 0 \text{ dBm}$

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Coupling Ratio	-	dB	—	12.5	—
Coupling (Pin 1 - Pin 3)	5 - 1225 MHz	dB	12.0	12.5	13.0
Main Line Loss (Pin 1 - Pin 5)	5 - 700 MHz 700 - 1225 MHz	dB	—	0.75 0.95	0.9 1.2
Isolation (Pin 5 - Pin 3)	5 - 100 MHz 100 - 700 MHz 700 - 1225 MHz	dB	38 40 35	41 42 38	—
Input Return Loss (Pin 1)	5 - 700 MHz 700 - 1225 MHz	dB	20 16	26 19	--
Output Return Loss (Pin 5)	5 - 1225 MHz	dB	18	23	—
Coupling Return Loss (Pin 3)	5 - 1225 MHz	dB	18	23	—

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

Part Number	Package
MACP-011062	900 piece reel
MACP-011062-TB	Sample Board

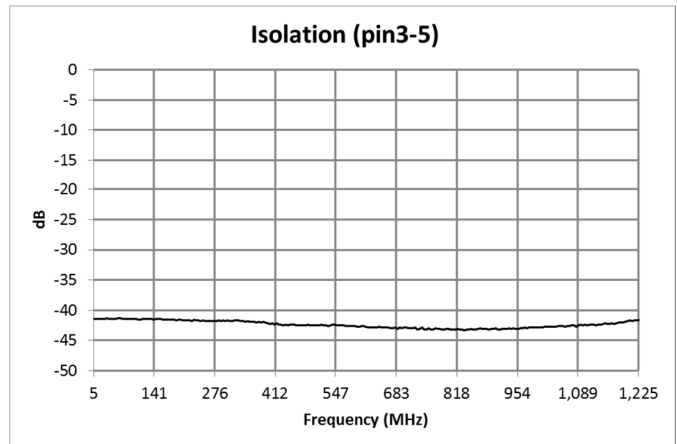
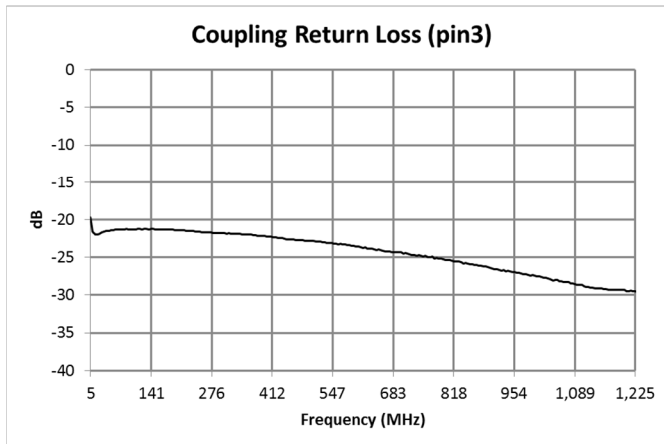
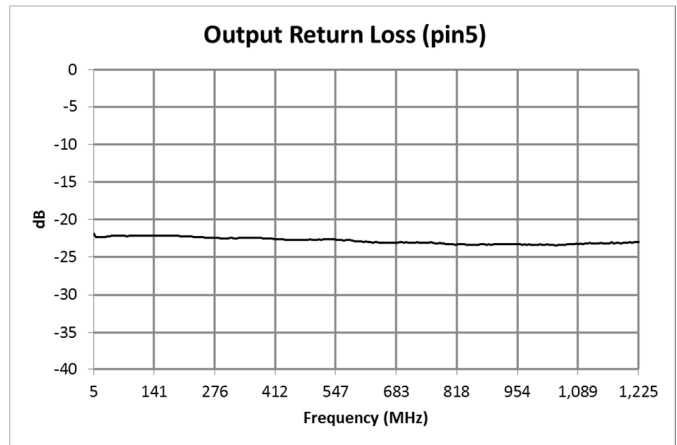
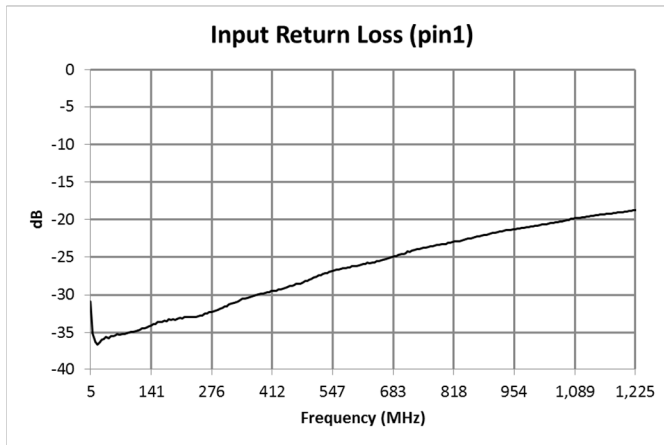
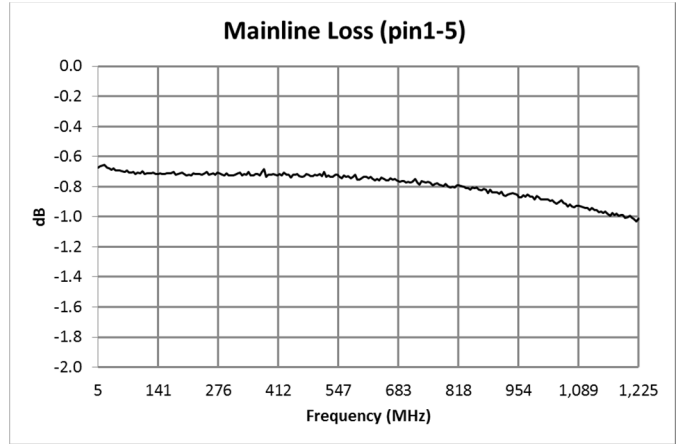
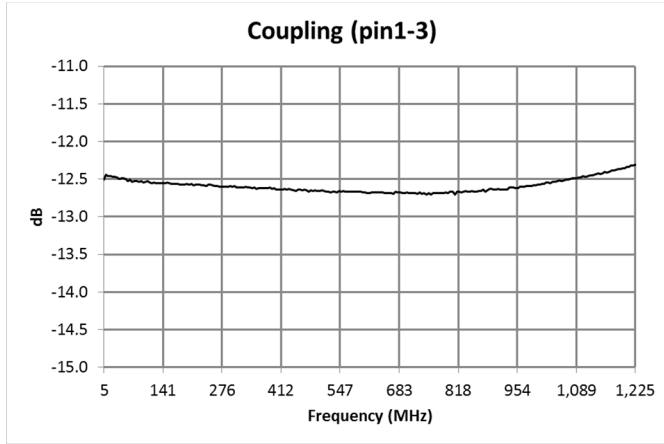
1. Reference Application Note M513 for reel size information.
2. All sample boards include 5 loose parts.

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

Parameter	Absolute Maximum
Input Power	2.0 W
DC Current	500 mA
Operating Temperature	-40°C to +85°C

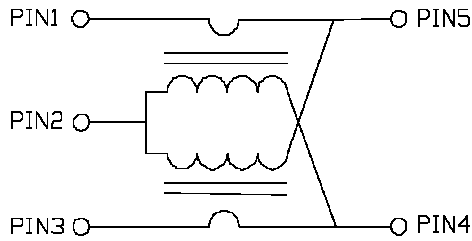
4. Exceeding any one or combination of these limits may cause permanent damage to this device.
5. MACOM does not recommend sustained operation near these survivability limits.

## Typical Performance Curves<sup>6</sup>

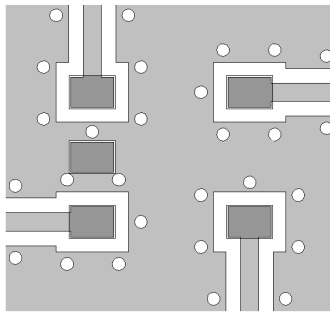


6. Full temperature plots available on request.

## Application Schematic

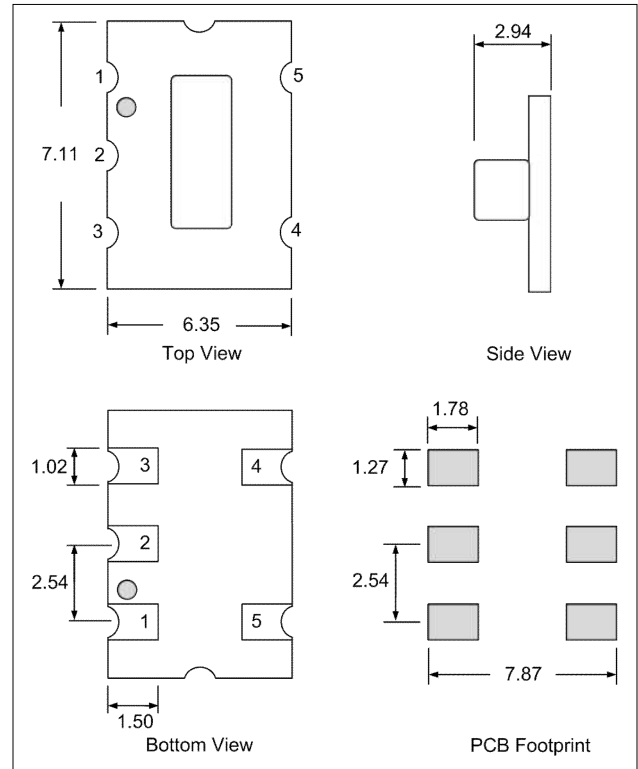


## Recommended Board Layout<sup>7</sup>



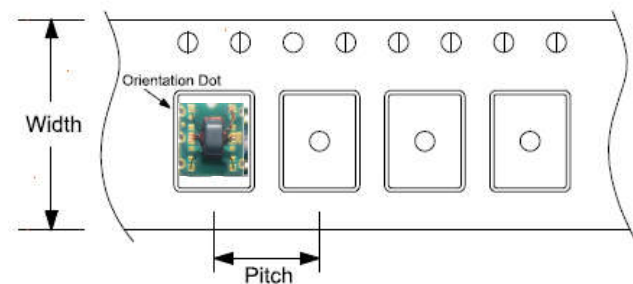
7. Recommended PCB layout shown above uses 1.6 mm FR4, rounded coplanar wave guide, transmission line width 0.70 mm and gap 0.57 mm.

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



8. Dimensions in mm.  
9. Tolerance:  $\pm 0.2$  mm unless otherwise noted.  
10. Model number and lot code printed on reel.  
11. Plating 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	16.00
Pitch	mm	12.00
Orientation	-	F62
Reference Application Note ANI-019 for orientation		

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