

## Features

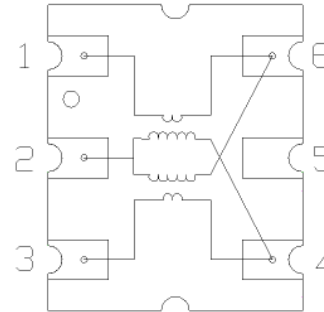
- Surface Mount Package
- 17.3 dB Coupler
- 260°C Reflow Compatible
- RoHS Compliant and Lead Free
- Available on Tape and Reel

## Description

The MACP-011068 is a 17.3 dB coupler offered in a surface mount package.

Ideally suited for 75  $\Omega$  power monitoring in CATV DOCSIS 3.1 nodes and line extenders.

## Functional Schematic



## Pin Configuration<sup>1</sup>

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

1. MACOM recommends connecting unused package pins to ground.

## Electrical Specifications: Freq. = 5 - 2000 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 (pin1-3)	5 - 2000	dB	16.8	17.3	17.8
Main Line Loss (pin 1-6)	5 - 1225 1225 - 1800 1800 - 2000	dB	—	0.6 1.1 1.4	0.7 1.25 1.6
Input Return Loss (pin 1)	5 - 1225 1225 - 1800 1800 - 2000	dB	20 18 16	26 24 20	—
Output Return Loss (pin 6)	5 - 1225 1225 - 1800 1800 - 2000	dB	18 15 14	26 19 17	—
Coupled Return Loss (pin 3)	5 - 1225 1225 - 1800 1800 - 2000	dB	20 20 20	27 25 23	—
Isolation (Pin 1-4)	5 - 1225 1225 - 1800 1800 - 2000	dB	26 21 20	34 26 23	—

## Ordering Information<sup>2,3</sup>

Part Number	Package
MACP-011068	900 piece reel
MACP-011068-TB	Sample Board

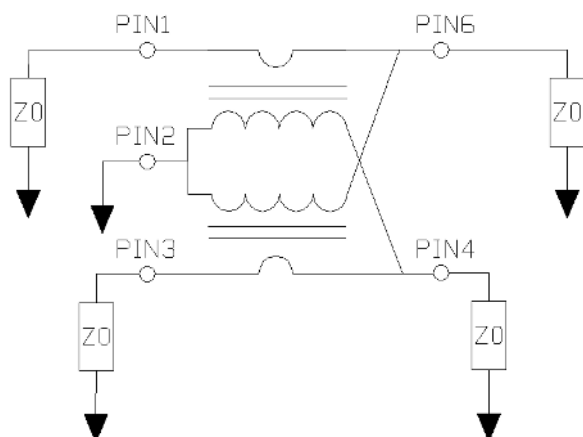
- Reference Application Note M513 for reel size information.
- All sample boards include 5 loose parts.

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

Parameter	Absolute Maximum
Input Power <sup>6</sup>	2 W
DC Current	500 mA
Operating Temperature	-40°C to +85°C

- Exceeding any one or combination of these limits may cause permanent damage to this device.
- MACOM does not recommend sustained operation near these survivability limits.
- Specified at +25°C only and measured at 800 MHz.

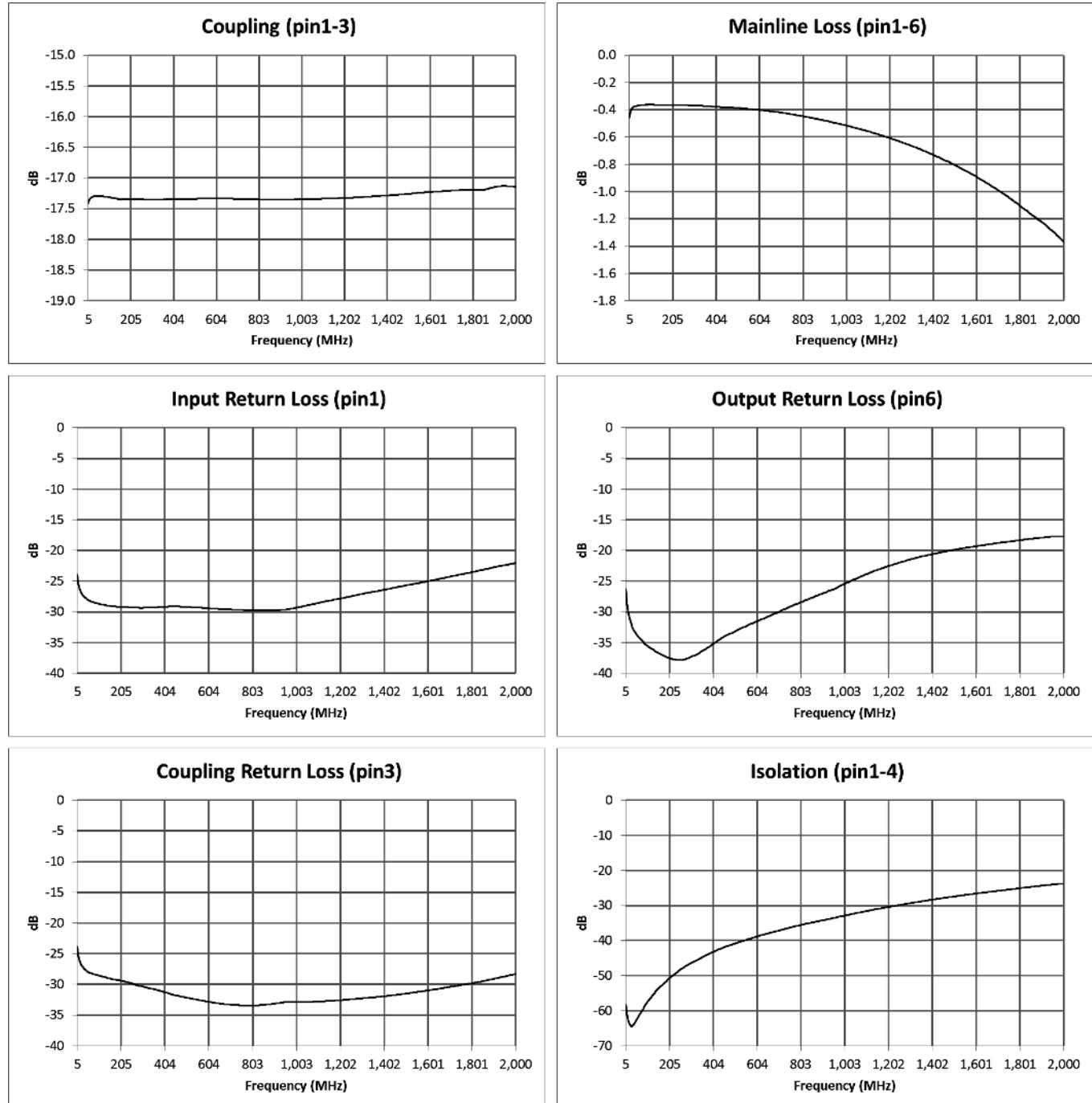
## Application Schematic



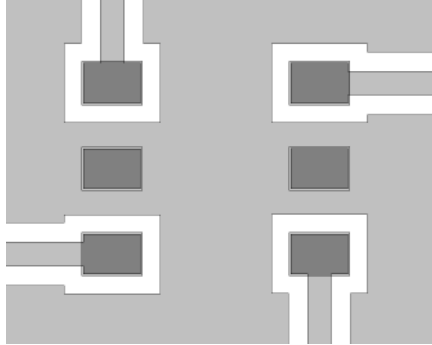
## 17.3 dB Coupler 5 - 2000 MHz

Rev. V2

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

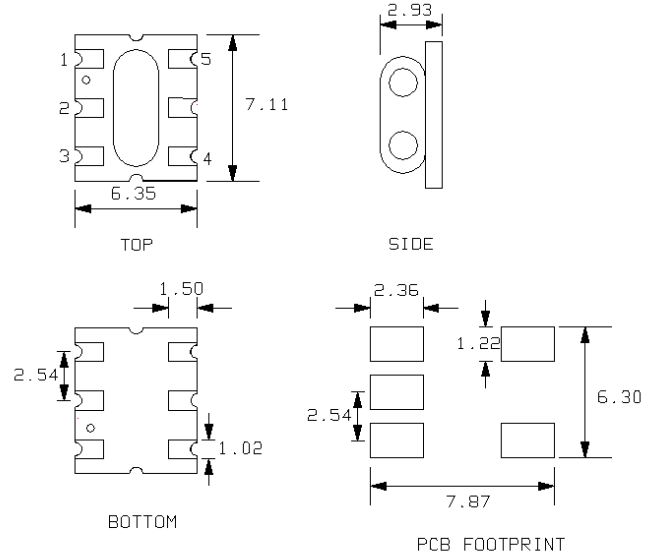


## PCB Layout<sup>7</sup>



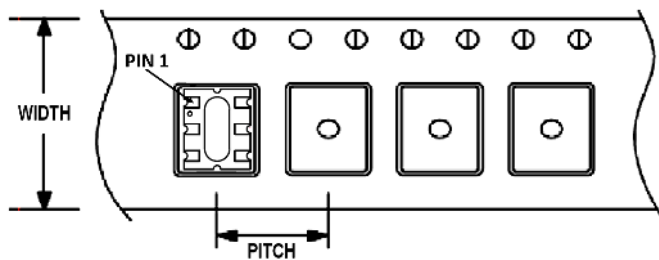
7. Recommended PCB layout shown above uses 1.6 mm FR4, Grounded coplanar wave guide, transmission line width 0.70 mm and gap 0.57 mm.

## 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 are printed on the reel.  
 11. Finish: Electroless nickel immersion gold (ENIG).

## 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		

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