

## 14 dB Coupler 5 - 300 MHz

Rev. V1

### Features

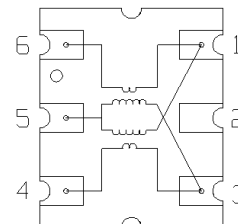
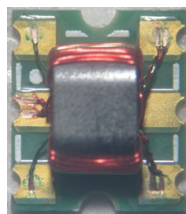
- 14 dB Coupling Ratio
- Surface Mount
- Available on Tape and Reel
- Excellent Temperature Stability
- RoHS Compliant and Pb Free
- 260°C Reflow Compatible

### Description

The MACP-011047 is a 14 dB coupler featuring excellent temperature stability assembled in a surface mount package.

Ideally suited for CATV applications.

### Functional Schematic



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

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

3. MACOM recommends connecting unused package pins to ground.

### Electrical Specifications: Freq. = 5 - 300 MHz, $T_A = 25^\circ\text{C}$ , $Z_0 = 75 \Omega$ , $P_{in} = 0 \text{ dBm}$

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Coupling (pin6-pin4)	5 - 300 MHz	dB	13.6	14.0	14.4
Main Line Loss (pin6-pin1)	5 - 300 MHz	dB	—	0.35	0.45
Main Line Loss (pin4-pin3)	5 - 300 MHz	dB	—	0.35	0.45
Input Return Loss (pin6)	5 - 300 MHz	dB	25	28	—
Output Return Loss (pin1)	5 - 300 MHz	dB	28	30	—
Coupled Return Loss (pin4)	5 - 300 MHz	dB	25	27	—
Isolation (pin6-3)	5 - 300 MHz	dB	27	30	—

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

Part Number	Package
MACP-011047	900 piece reel
MACP-011047-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>

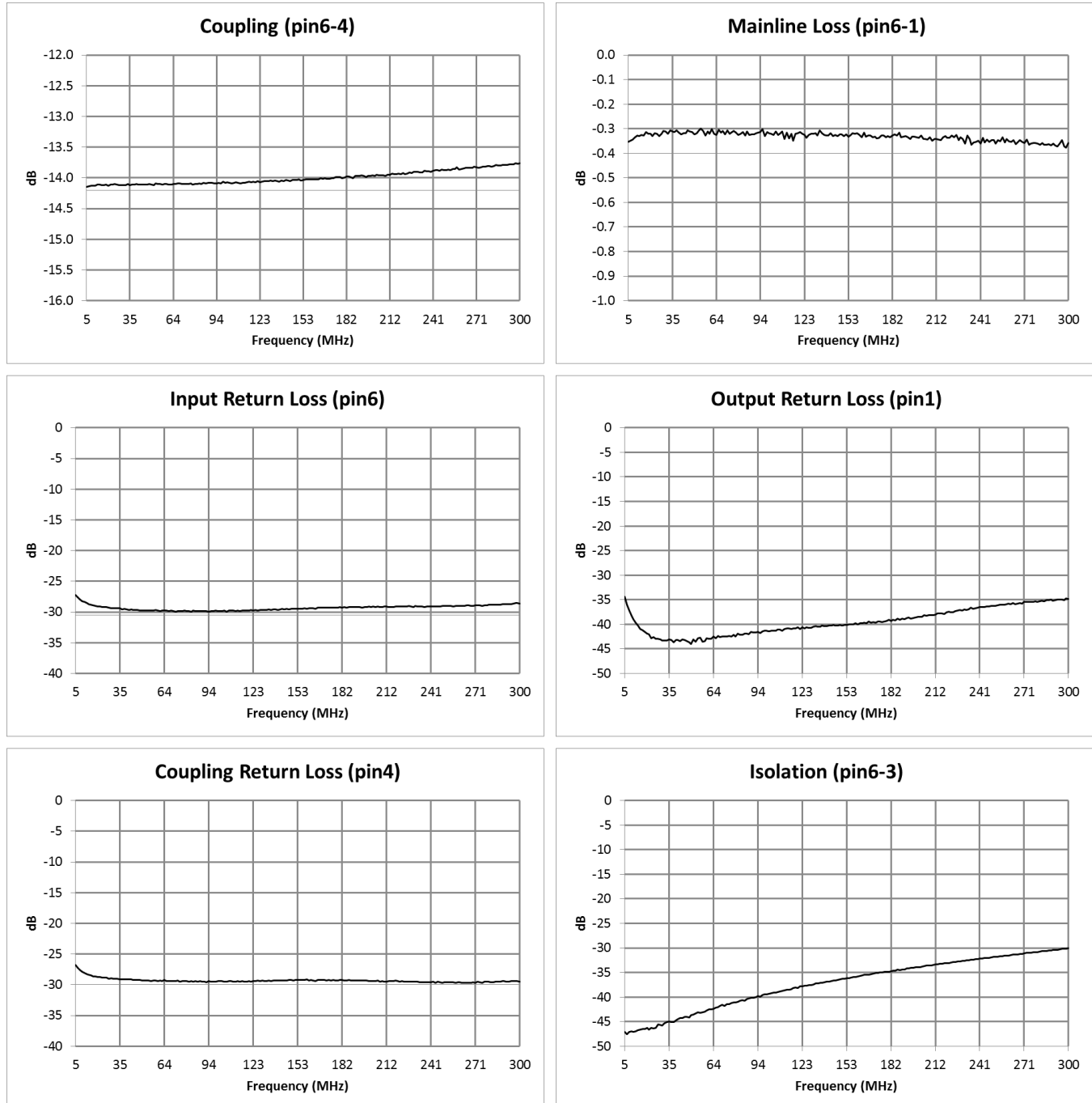
Parameter	Absolute Maximum
Input Power	0.5 W
DC Current	500 mA
Operating Temperature	-40°C to +85°C

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.

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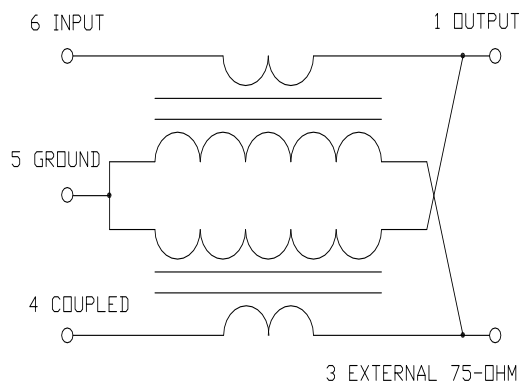
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### Typical Performance Curves<sup>6</sup>

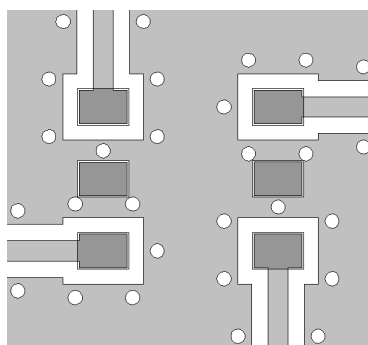


6. Full temperature plots available on request.

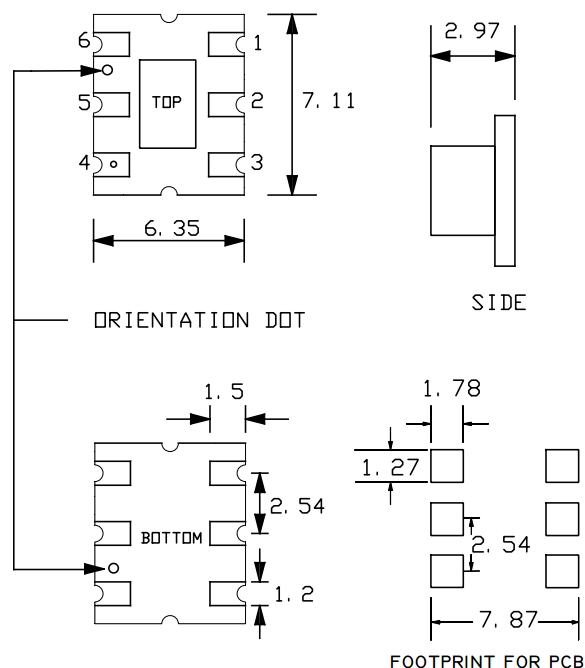
## Application Schematic



## Recommended Board Layout

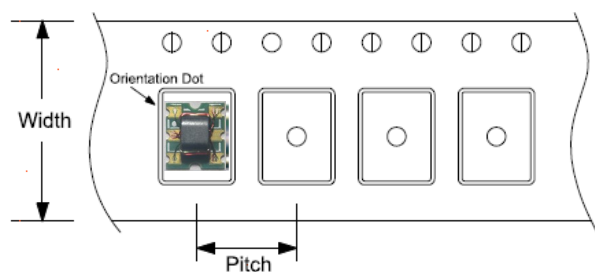


## Outline Drawing<sup>7,8,9,10,11</sup>



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

## 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
Ao	mm	6.7
Bo	mm	7.4
Ko	mm	3.3
Orientation	-	F15
Reference Application Note ANI-019 for orientation		

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