

17.3 dB Coupler 5 - 2000 MHz



MACP-011068

Rev. V3

Features

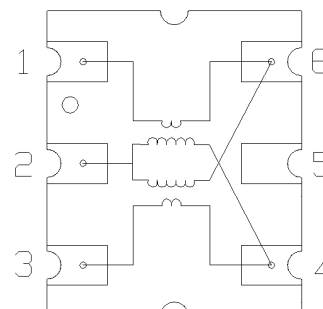
- Surface Mount Package
- 17.3 dB Coupler
- 260°C Reflow Compatible
- RoHS Compliant and Lead Free
- Available on Tape and Reel

Description

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

Ideally suited for 75 Ω power monitoring in CATV DOCSIS 3.1 nodes and line extenders.

Functional Schematic



Pin Configuration³

| 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.

Ordering Information^{1,2}

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

1. Reference Application Note M513 for reel size information.

2. All sample boards include 5 loose parts.

* Restrictions on Hazardous Substances, compliant to current RoHS EU directive.

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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 | — |

Absolute Maximum Ratings^{4,5}

| Parameter | Absolute Maximum |
|--------------------------|------------------|
| Input Power ⁶ | 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.
6. Specified at +25°C only and measured at 800 MHz.

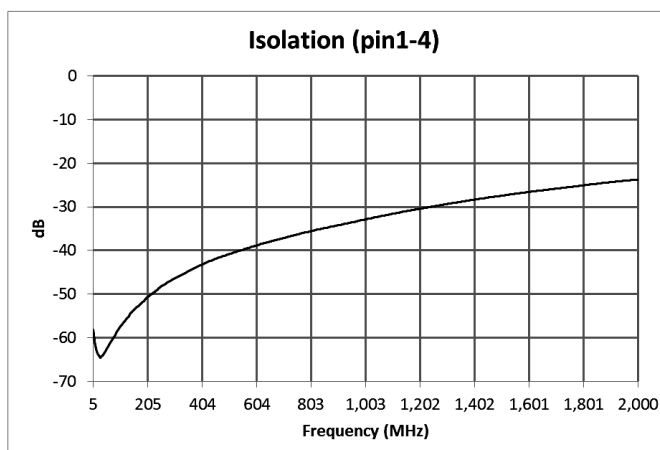
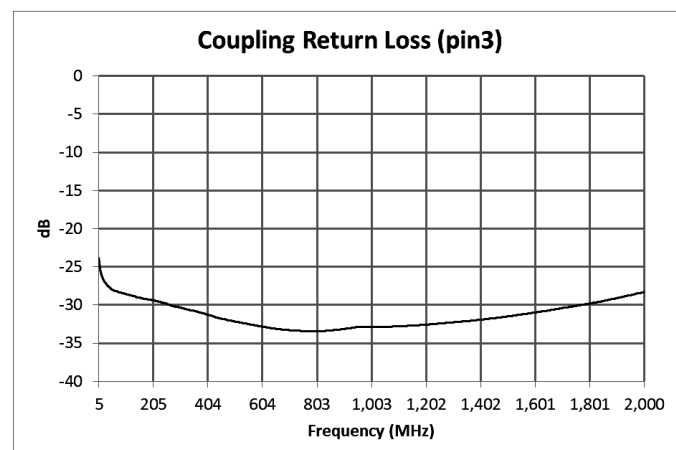
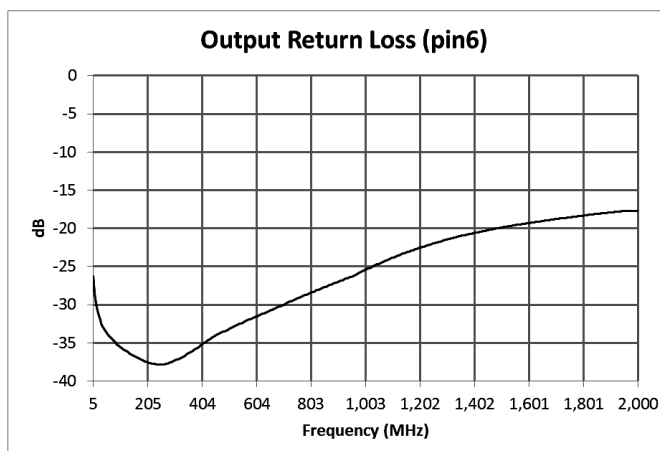
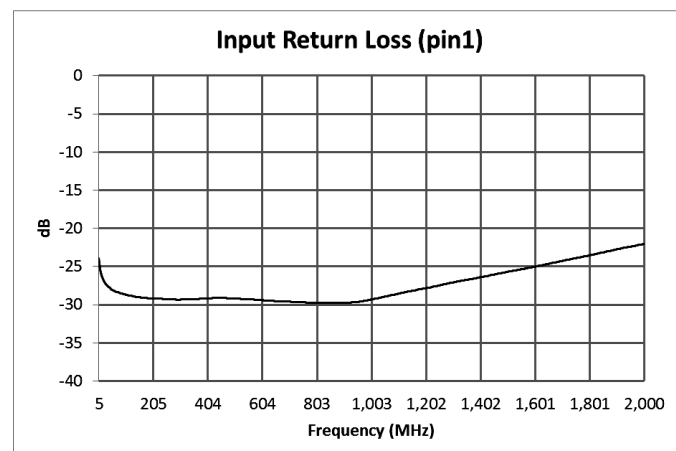
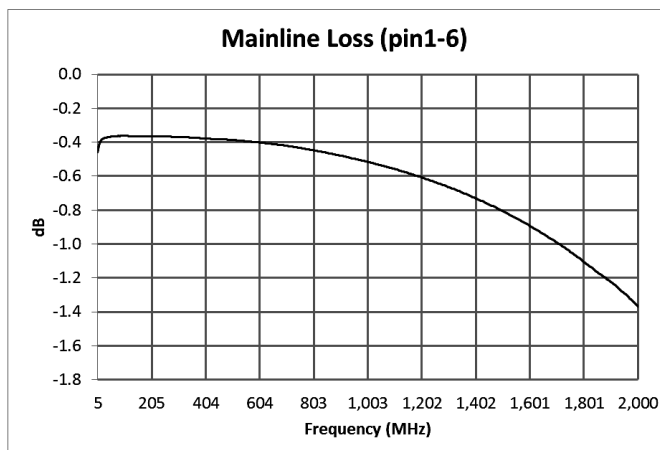
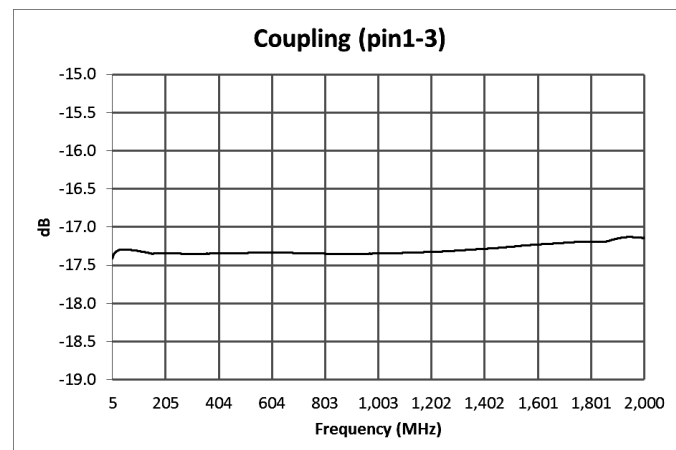
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Electrical Specifications: $T_A = 25^\circ\text{C}$, 0 $Z_0 = 75 \Omega$, $P_{in} = 0 \text{ dBm}$



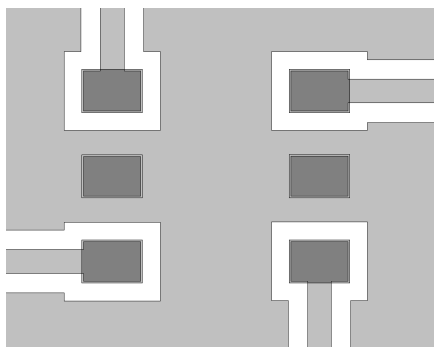
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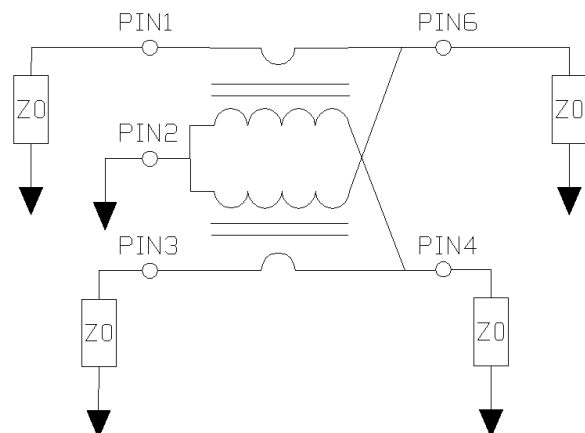
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PCB Layout⁷

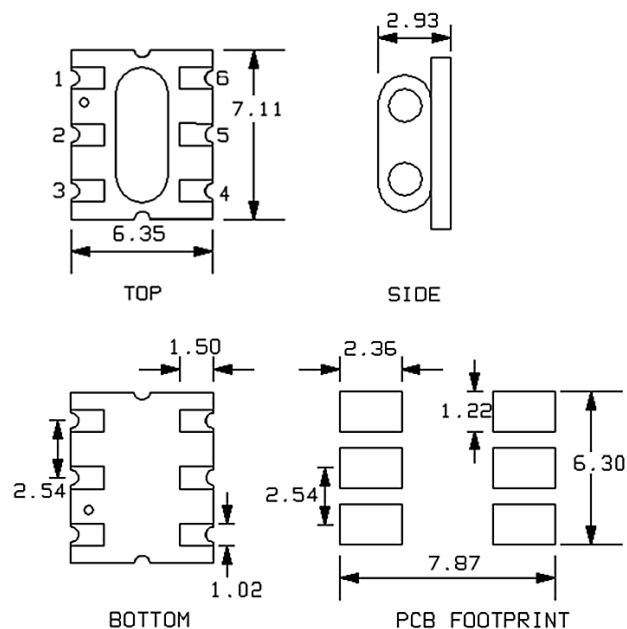


7. Recommended PCB layout shown above uses 1.6 mm FR4, Grounded coplanar wave guide, transmission line width 0.70 mm and gap 0.57 mm.

Application Schematic

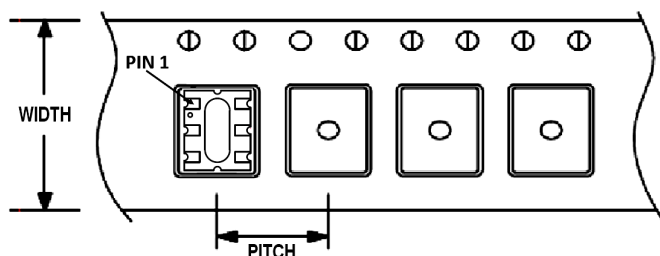


Outline Drawing^{8,9,10,11}



8. Dimensions in mm.
9. Tolerance: ± 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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