

Coupler, 8 dB

5 - 1800 MHz



MACP-011079

Rev. V1

Features

- 8 dB Coupling Ratio
- Surface Mount Package
- Available on Tape & Reel
- Excellent Temperature Stability
- RoHS* Compliant

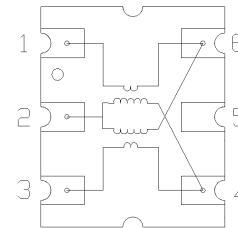
Applications

- CATV / Broadband

Description

The MACP-011079 is a 8 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 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.

Electrical Specifications: Freq. = 5 - 1800 MHz, $T_A = +25^\circ\text{C}$, $Z_0 = 75 \Omega$, $P_{IN} = 0 \text{ dBm}$

| Parameter | Test Conditions | Units | Min. | Typ. | Max. |
|----------------------------|---------------------------------|-------|----------|------------|------------|
| Coupling (pin1-3) | 5 - 1800 MHz | dB | 7.5 | 8.0 | 8.5 |
| Main Line Loss (pin1-6) | 5 - 1225 MHz 1225 - 1800 MHz | dB | — | 1.5 1.9 | 1.8 2.3 |
| Input Return Loss (pin1) | 5 - 100 MHz 100 - 1800 MHz | dB | 13 15 | 15 18 | — |
| Output Return Loss (pin6) | 5 - 100 MHz 100 - 1800 MHz | dB | 18 16 | 24 19 | — |
| Coupled Return Loss (pin3) | 5 - 100 MHz 100 - 1800 MHz | dB | 12 15 | 15 18 | — |
| Isolation (pin1-4) | 5 - 1225 MHz 1225 - 1800 MHz | dB | 24 20 | 28 24 | — |

Ordering Information^{1,2}

| Part Number | Package |
|----------------|----------------|
| MACP-011079 | 900 piece reel |
| MACP-011079-TB | Sample Board |

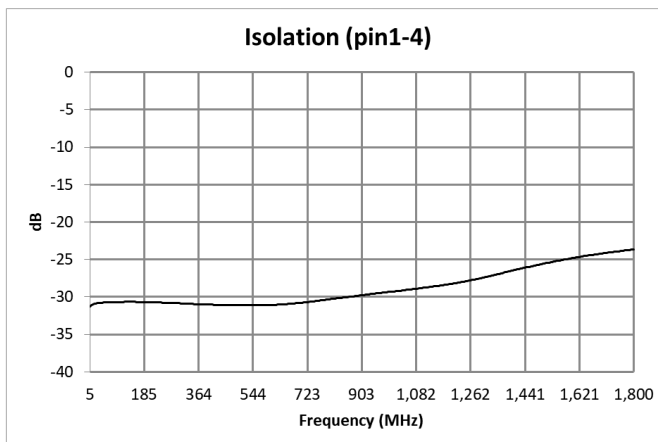
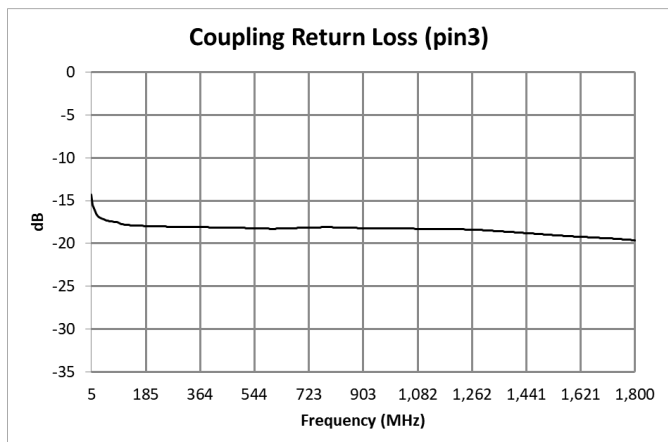
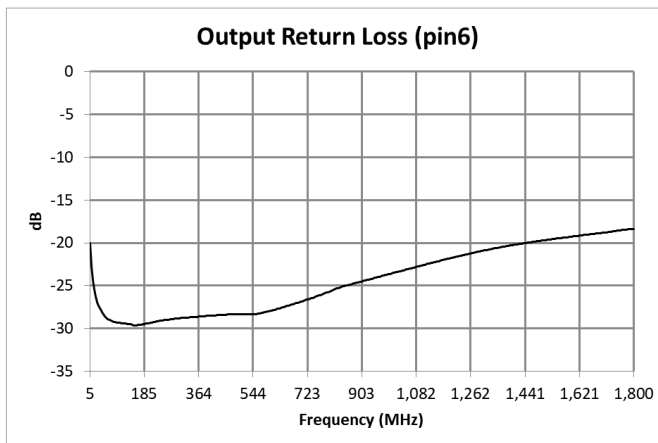
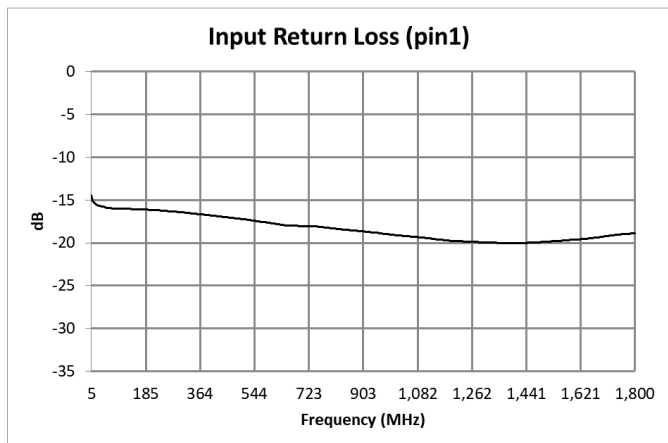
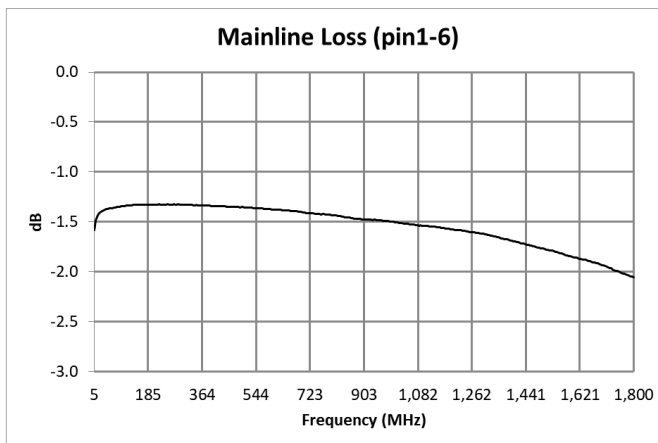
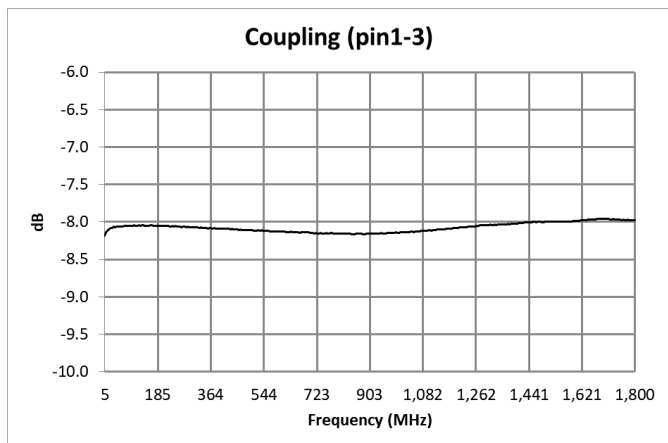
1. Reference Application Note M513 for reel size information.
2. All sample boards include 5 loose parts.

Absolute Maximum Ratings^{4,5}

| Parameter | Absolute Maximum |
|-----------------------|------------------|
| Input Power | 2W |
| 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



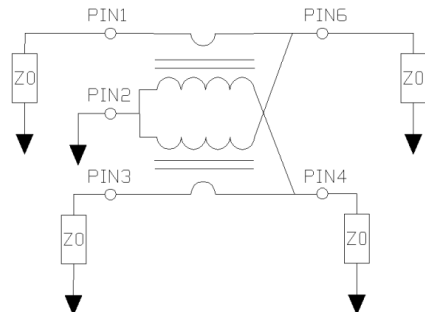
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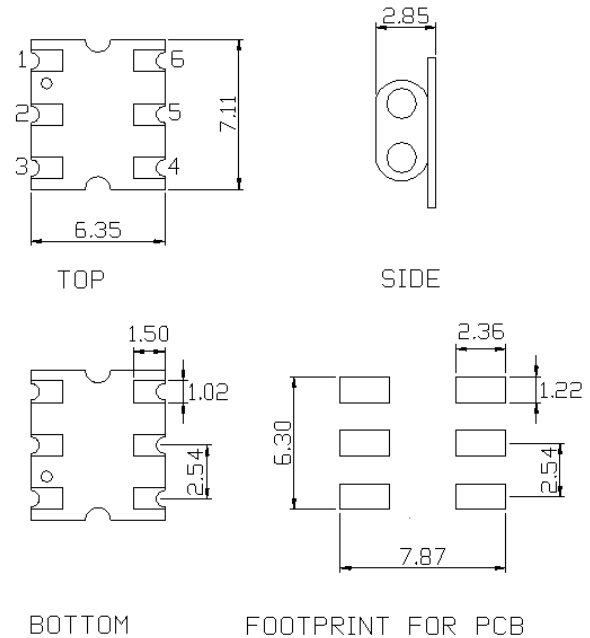
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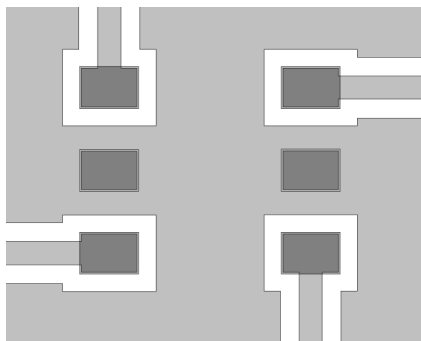
Application Schematic⁶



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



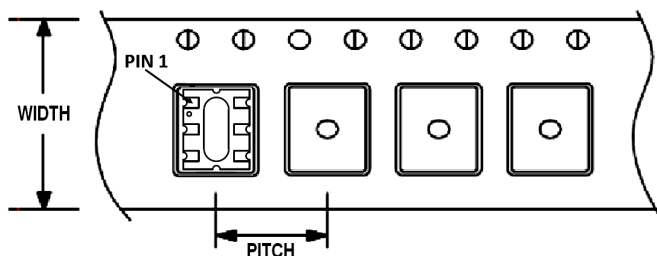
Recommended Board Layout⁷



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.

- 8. Dimensions in mm.
- 9. Tolerance: ± 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 | — | F33 |
| Reference Application Note ANI-019 for orientation | | |

| Rev | Date | Change Description |
|-----|---------------|-----------------------------|
| V1 | 2023-December | Production Release |
| V2 | 2024-January | Update Ordering Information |

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