

Coupler 17.3 dB

5 MHz - 2 GHz



MACP-011098

Rev. V1

Features

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

Applications

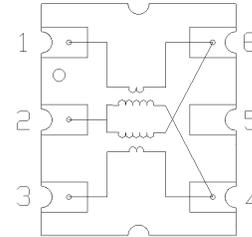
- CATV

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	Coupled	4	Output
2	Ground	5	Not Connected
3	Input	6	External 75 Ω

3. MACOM recommends connecting unused package pins to ground.

Electrical Specifications: Freq. = 5 - 2000 MHz, T_A = 25°C, Z₀ = 75 Ω , P_{IN} = 0 dBm

Parameter	Frequency Test Conditions (MHz)	Units	Min.	Typ.	Max.
Coupling (pin3-1)	5 - 2000	dB	16.8	17.3	17.8
Main Line Loss (pin 3-4)	5 - 1225 1225 - 1800 1800 - 2000	dB	—	0.6 1.1 1.4	0.7 1.25 1.6
Input Return Loss (pin 3)	5 - 1225 1225 - 2000	dB	20 18	27 23	—
Output Return Loss (pin 4)	5 - 1225 1225 - 1800 1800 - 2000	dB	18 15 14	26 19 17	—
Coupled Return Loss (pin 1)	5 - 870 870 - 1200 1200 - 2000	dB	20 18 14	26 24 20	—
Isolation (Pin 3-6)	5 - 1225 1225 - 1800 1800 - 2000	dB	26 21 20	34 26 23	—

Ordering Information^{1,2}

Part Number	Package
MACP-011098	900 piece
MACP-011098-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.

Absolute Maximum Ratings @ +25°C^{4,5}

Parameter	Absolute Maximum
Input Power	2 W @ 800 MHz
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.

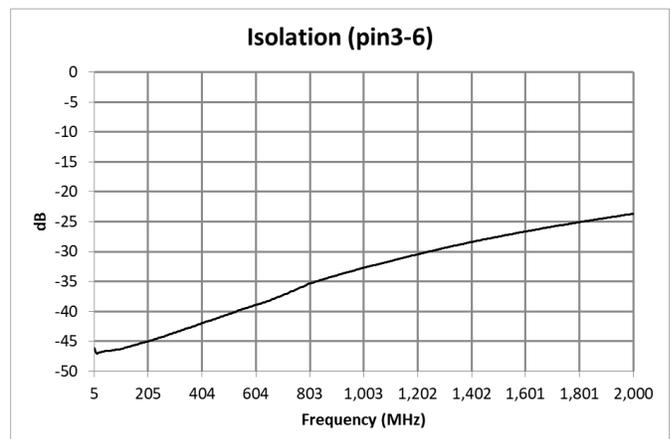
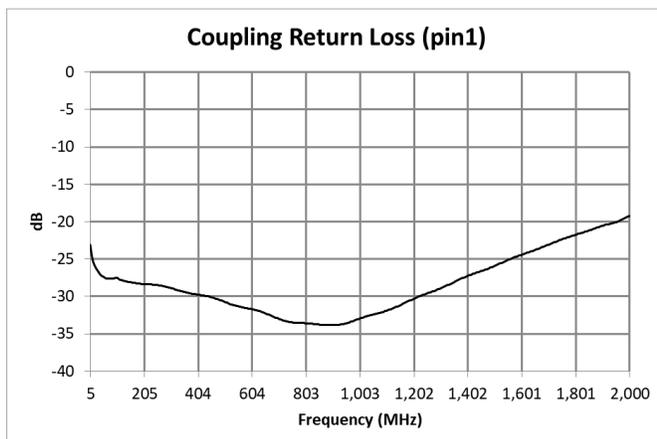
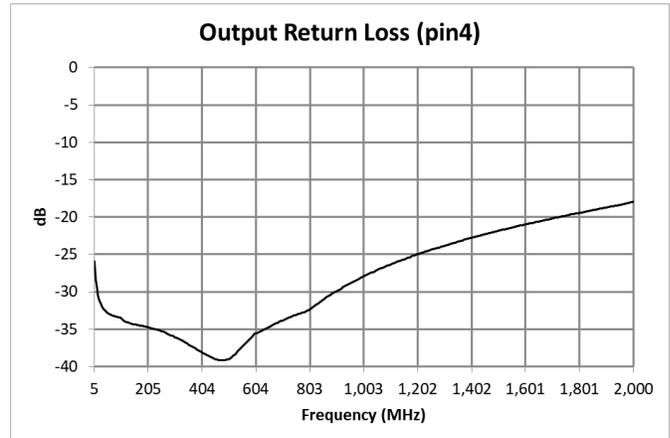
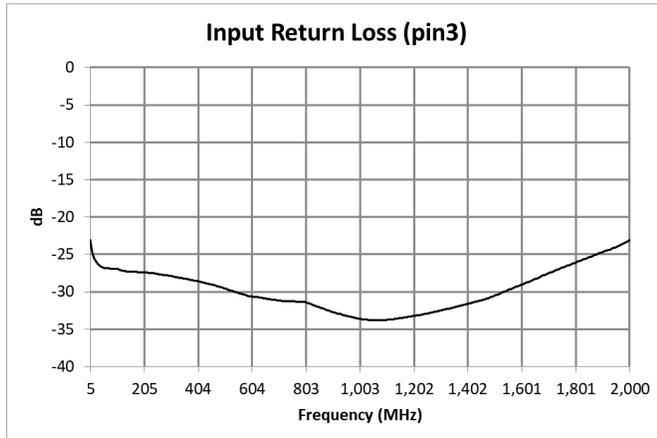
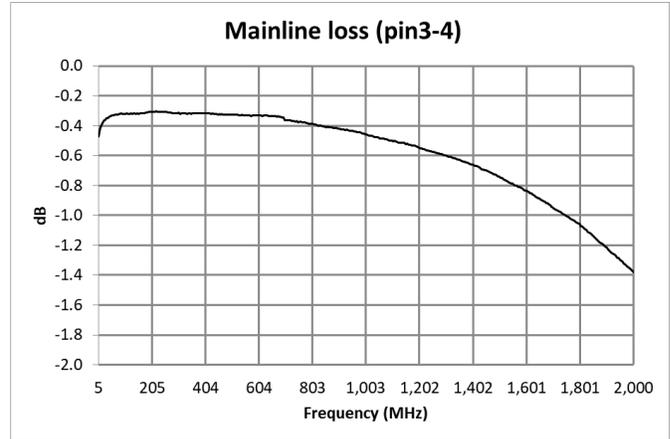
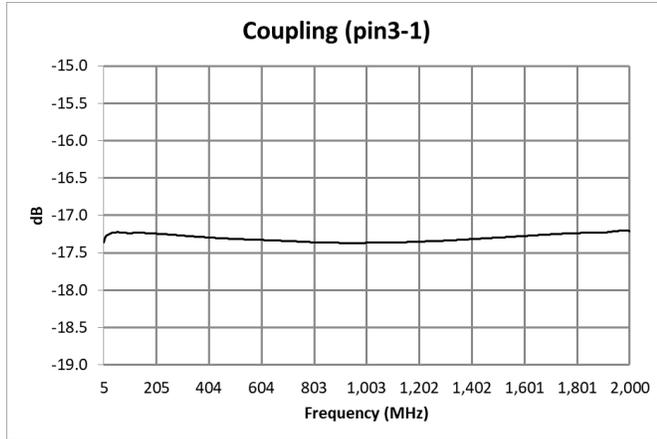
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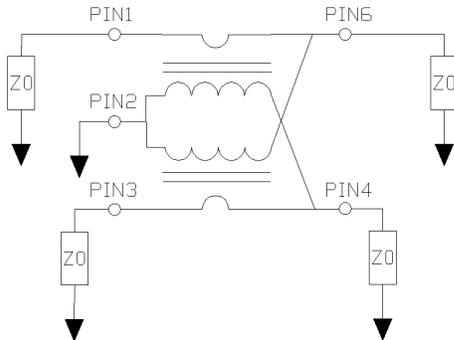
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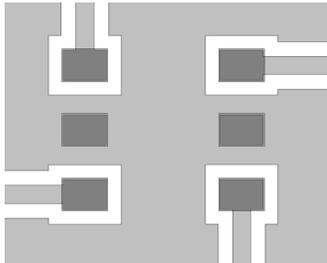
Electrical Specifications: $T_A = 25^\circ\text{C}$, $Z_0 = 75 \Omega$, $P_{IN} = 0 \text{ dBm}$



Application Schematic

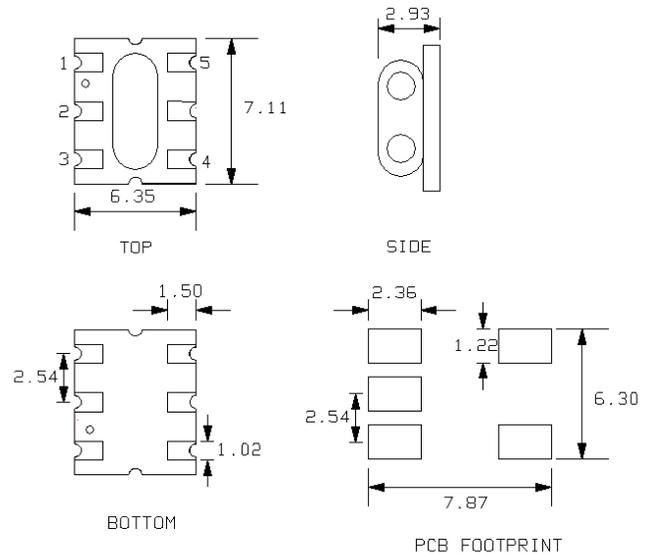


PCB Layout⁶



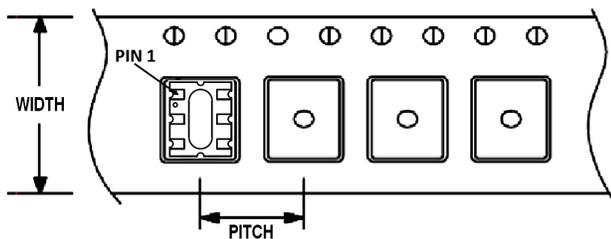
6. Recommended PCB layout shown above uses 1.6 mm FR4, Grounded coplanar wave guide, transmission line width 0.70 mm and gap 0.57 mm.

Outline Drawing^{7,8,9,10}



- 7. Dimensions in mm.
- 8. Tolerance: ± 0.2 mm unless otherwise noted.
- 9. Model number and lot code are printed on the reel.
- 10. 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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