

14dB Coupler 5 - 3250 MHz

Rev. V1

Features

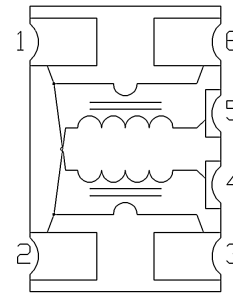
- Coupling 14 dB Typical
- Very Wide Bandwidth
- Excellent RF Performance & Temperature Stability
- Surface Mount Package
- Available on Tape and Reel
- RoHS* Compliant and Lead Free
- 260°C Reflow Compatible
- Suitable for DOCSIS 3.1

Description

The MACP-011074 is a wire wound ferrite based 14 dB coupler on a compact surface mount package.

Ideally suited for CATV Broadband applications.

Functional Schematic



Pin Configuration³

Pin #	Function	Pin #	Function
1	Isolated	4,5	Ground
2	Output	6	Coupled
3	Input		

3. MACOM recommends connecting unused package pins to ground.

Electrical Specifications: Freq. = 5 - 3250 MHz, T_A = 25°C, Z₀ = 75 Ω, P_{IN} = 0 dBm

Parameter	Frequency Test Conditions (MHz)	Units	Min.	Typ.	Max.
Coupling (pin 3-6)	5 - 3250	dB	13	14.0	15.6
Main Line Loss (pin 3-2)	5 - 1500 1500 - 3250	dB	—	1.0 2.0	1.4 3.6
Input Return Loss (pin 3)	5 - 1000 1000 - 3250	dB	17 10	22 19	—
Output Return Loss (pin 2)	5 - 1000 1000 - 3250	dB	17 11	25 28	—
Coupling Return Loss (pin 6)	5 - 1000 1000 - 3250	dB	15 7	22 23	—
Isolation (pin 3-1)	5 - 1000 1000 - 3250	dB	27 15	36 22	—

Ordering Information^{1,2}

Part Number	Package
MACP-011074	bulk
MACP-011074-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 RF Power ⁶	1 W
DC Current	0.5 A
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.

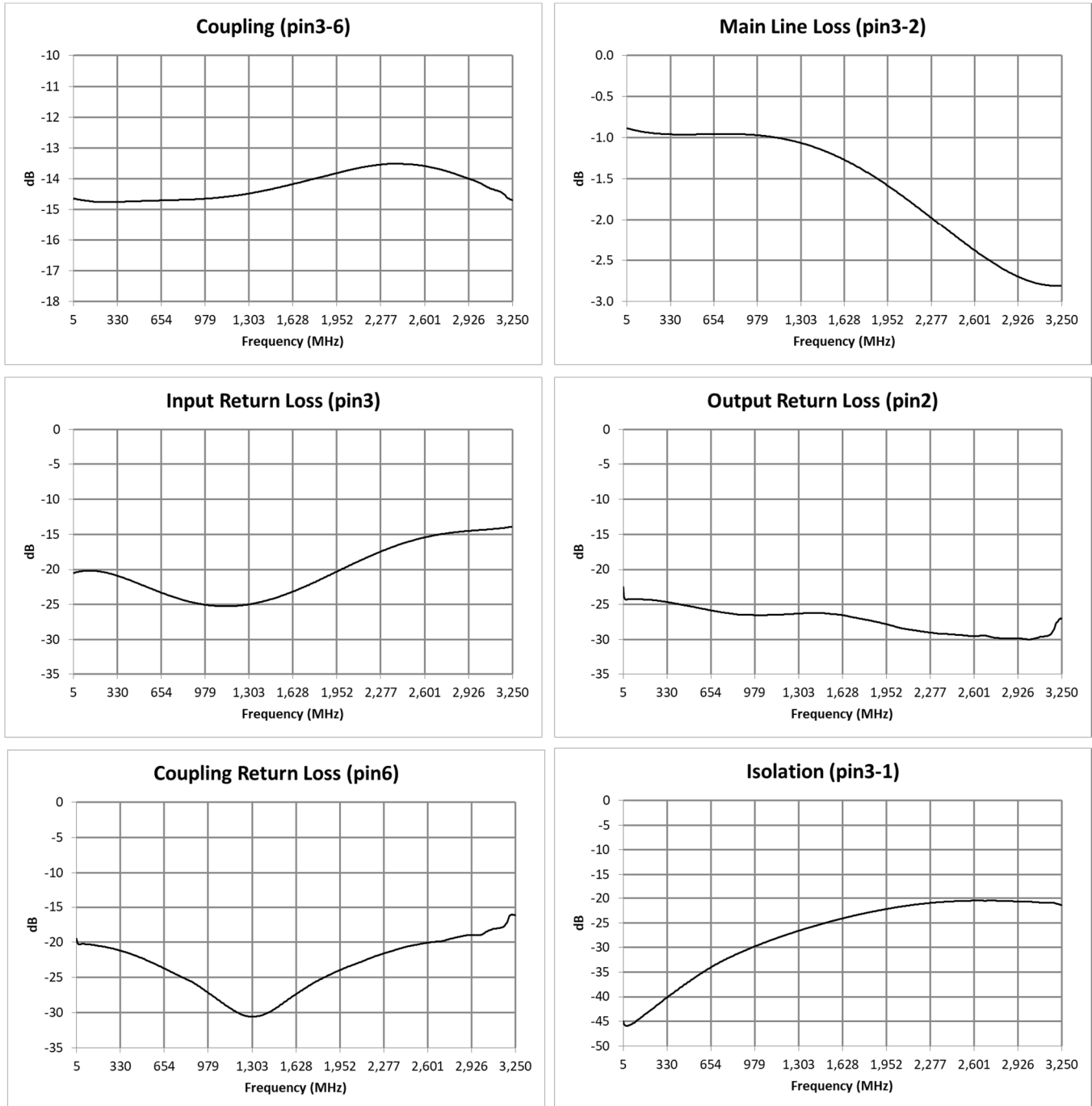
* Restrictions on Hazardous Substances, compliant to current RoHS EU directive.

ADVANCE: Data Sheets contain information regarding a product MACOM is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

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Typical Performance Curves:⁷ $P_{IN} = 0 \text{ dBm}$, $T_A = 25^\circ\text{C}$, $Z_0 = 75 \Omega$



7. Temperature plots available on request

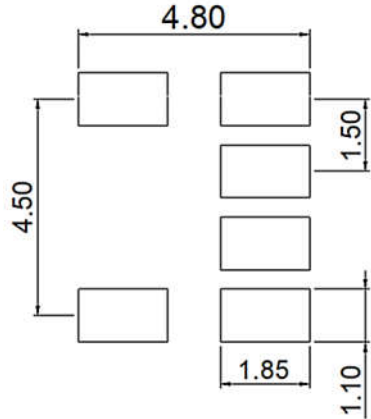
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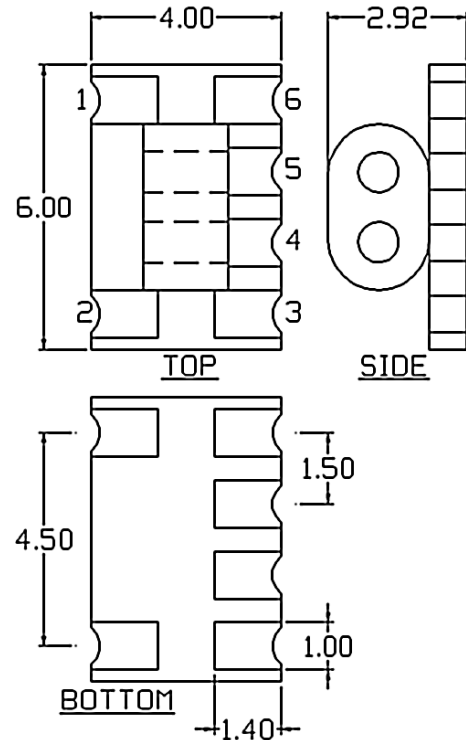
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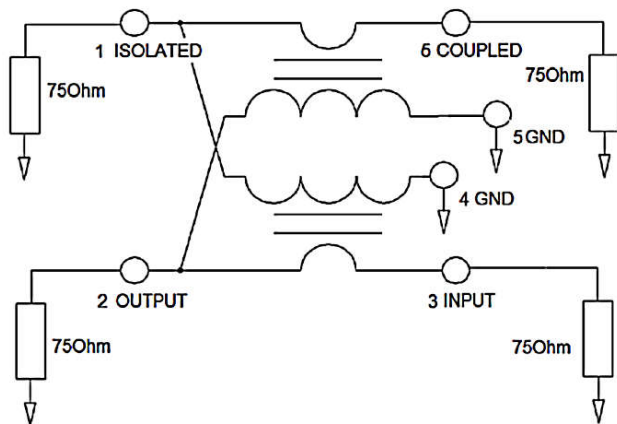
Recommended PCB Footprint



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

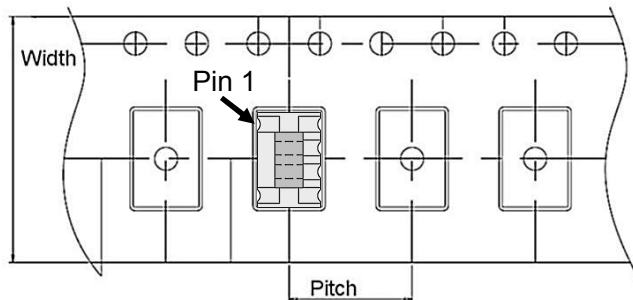


Application Schematic



- 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	-	2000
Reel Size	mm	330
Tape Width	mm	16.0
Pitch	mm	8.0
Orientation	-	F45
Reference Application Note ANI-019 for orientation		