

14dB Coupler 5 - 3250 MHz

Rev. V1

Features

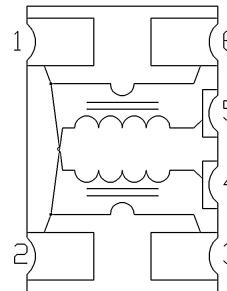
- Coupling 14 dB Typical
- Very Wide Bandwidth
- Excellent RF Performance & Temperature Stability
- Surface Mount Package
- Available on Tape and Reel
- RoHS* Compliant and Lead Free
- 260°C Reflow Compatible
- Suitable for DOCSIS 3.1

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.

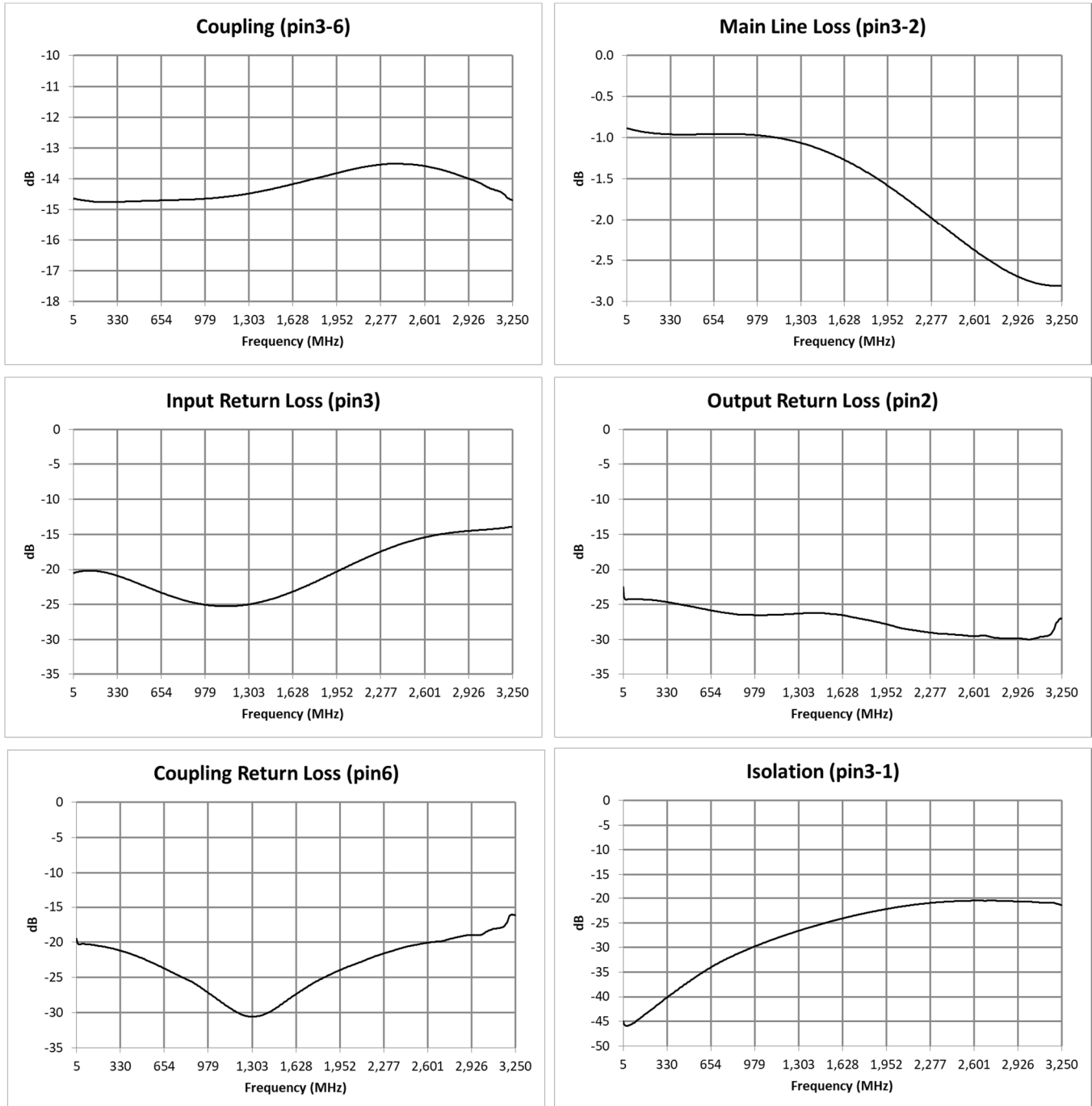
* Restrictions on Hazardous Substances, compliant to current RoHS EU directive.

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.

MACOM Technology Solutions Inc. (MACOM) and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.

For further information and support please visit: <https://www.macom.com/support>

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



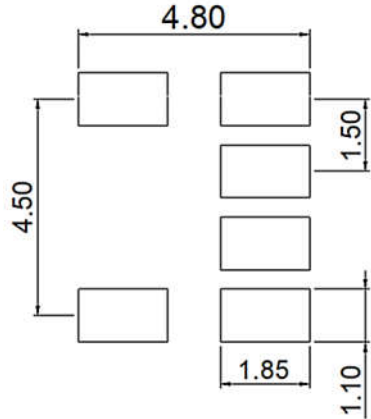
7. Temperature plots available on request

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.

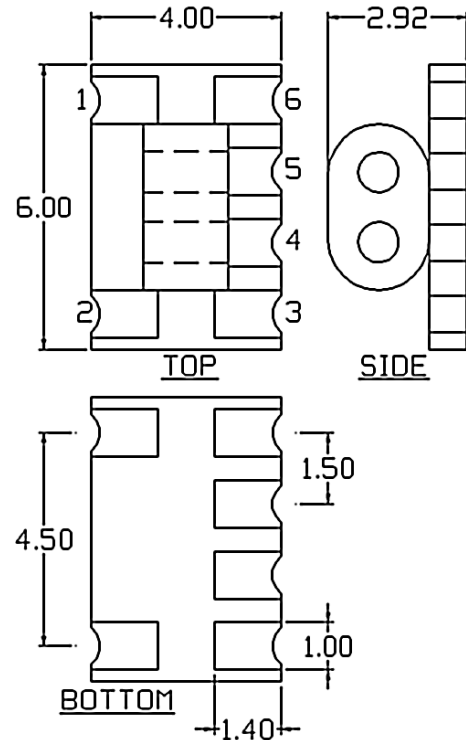
MACOM Technology Solutions Inc. (MACOM) and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.

For further information and support please visit: <https://www.macom.com/support>

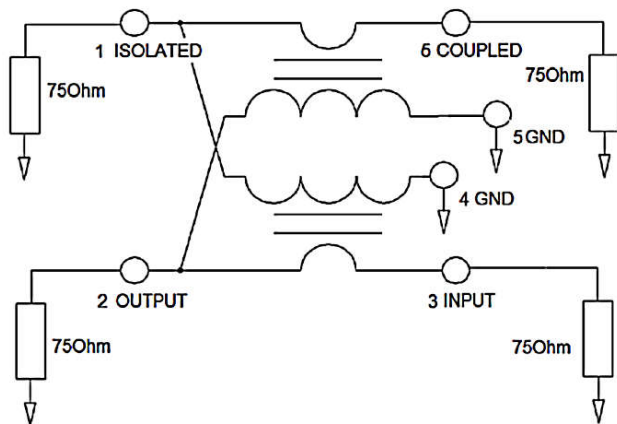
Recommended PCB Footprint



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

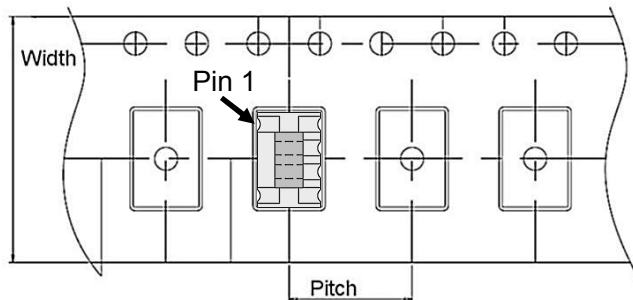


Application Schematic



- 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		

MACOM Technology Solutions Inc. All rights reserved.

Information in this document is provided in connection with MACOM Technology Solutions Inc ("MACOM") products. These materials are provided by MACOM as a service to its customers and may be used for informational purposes only. Except as provided in MACOM's Terms and Conditions of Sale for such products or in any separate agreement related to this document, MACOM assumes no liability whatsoever. MACOM assumes no responsibility for errors or omissions in these materials. MACOM may make changes to specifications and product descriptions at any time, without notice. MACOM makes no commitment to update the information and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to its specifications and product descriptions. No license, express or implied, by estoppels or otherwise, to any intellectual property rights is granted by this document.

THESE MATERIALS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF MACOM PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, CONSEQUENTIAL OR INCIDENTAL DAMAGES, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. MACOM FURTHER DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. MACOM SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS, WHICH MAY RESULT FROM THE USE OF THESE MATERIALS.

MACOM products are not intended for use in medical, lifesaving or life sustaining applications. MACOM customers using or selling MACOM products for use in such applications do so at their own risk and agree to fully indemnify MACOM for any damages resulting from such improper use or sale.