

Coupler, 8 dB

5 - 1800 MHz



MACP-011117

Rev. V1

Features

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

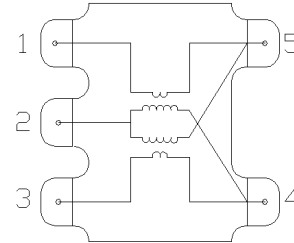
Applications

- CATV / Broadband

Description

The MACP-011117 is a 8 dB broadband coupler in a surface mount package.

Functional Schematic



Pin Configuration³

Pin #	Function	Pin #	Function
1	Input	4	External 75 Ω
2	Ground	5	Output
3	Coupled		

3. MACOM recommends connecting unused package pins to ground.

Electrical Specifications: Freq. = 5 - 1800 MHz, T_A = +25°C, Z₀ = 75 Ω, P_{IN} = 0 dBm

Parameter	Test Conditions Frequency (MHz)	Units	Min.	Typ.	Max.
Coupling (pin 1-3)	5 - 1800	dB	7.5	8.0	8.5
Main Line Loss (pin 1-5)	5 - 1225 1225 - 1800	dB	—	1.7 1.9	1.9 2.2
Input Return Loss (pin 1)	5 - 50 50 - 1800	dB	13 14	15 17	—
Output Return Loss (pin 5)	5 - 1225 1225 - 1800	dB	18 15	23 18	—
Coupled Return Loss (pin 3)	5 - 50 50 - 700 700 - 1800	dB	13 14 16	15 16 21	—
Isolation (pin1-4)	5 - 1225 1225 - 1800	dB	22 19	26 23	—

Ordering Information^{1,2}

Part Number	Package
MACP-011117	2000 piece reel
MACP-011117-TB	Sample Board

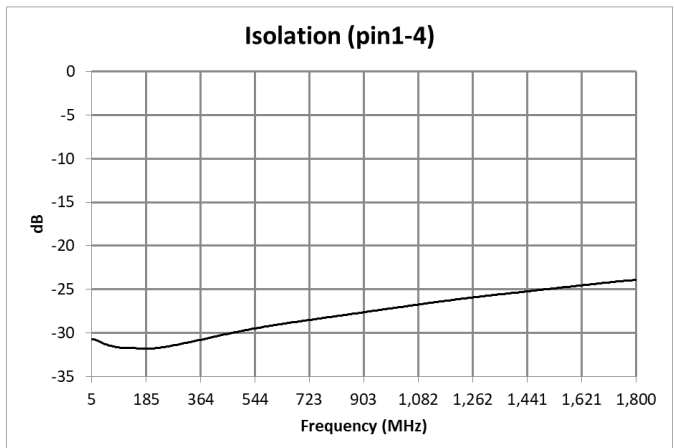
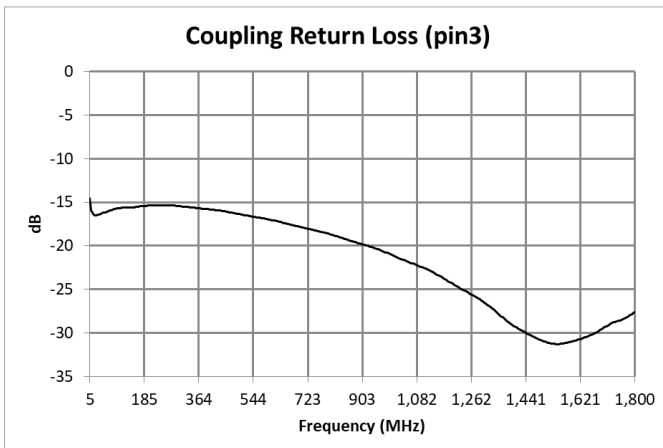
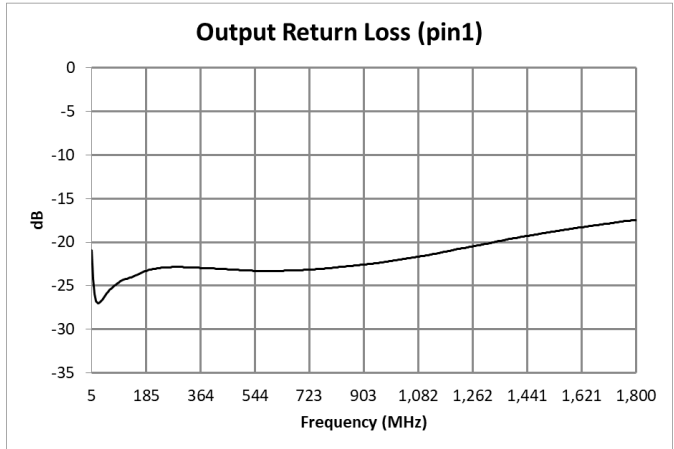
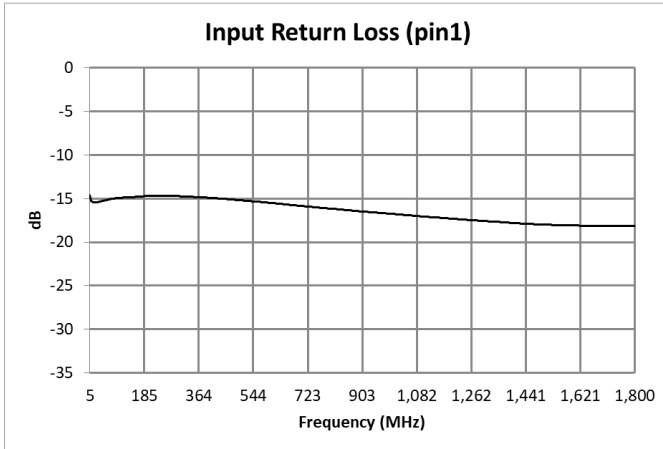
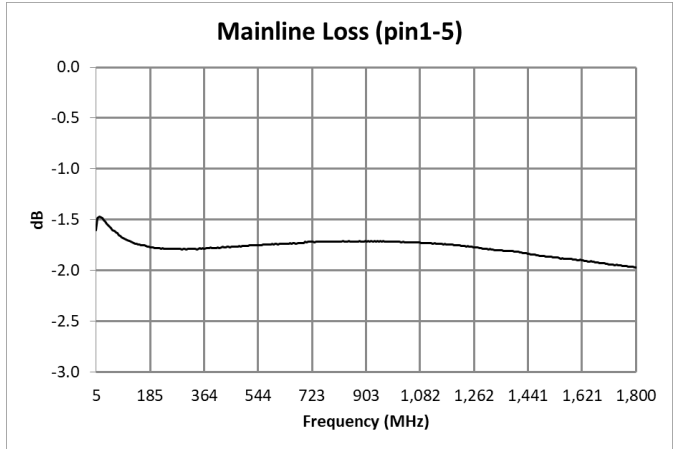
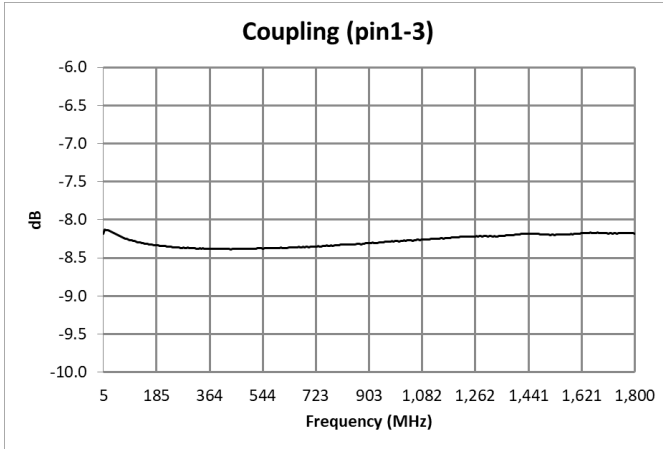
1. Reference Application Note M513 for reel size information.
2. All sample boards include 5 loose parts.

Absolute Maximum Ratings^{4,5}

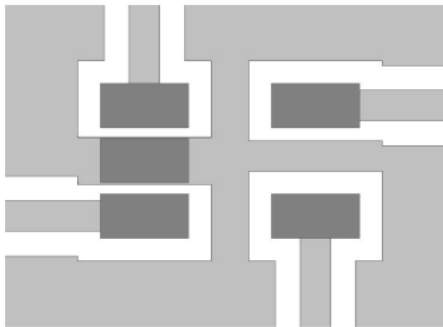
Parameter	Absolute Maximum
Input Power	2 W
DC Current	500 mA
Operating Temperature	-40°C to +85°C

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.

Typical Performance Curves

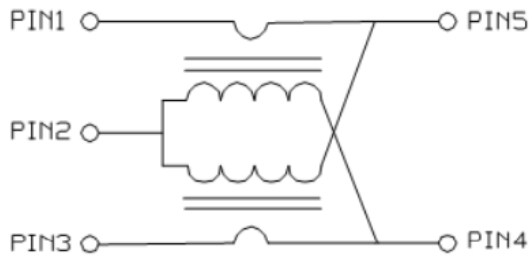


Recommended Board Layout⁶

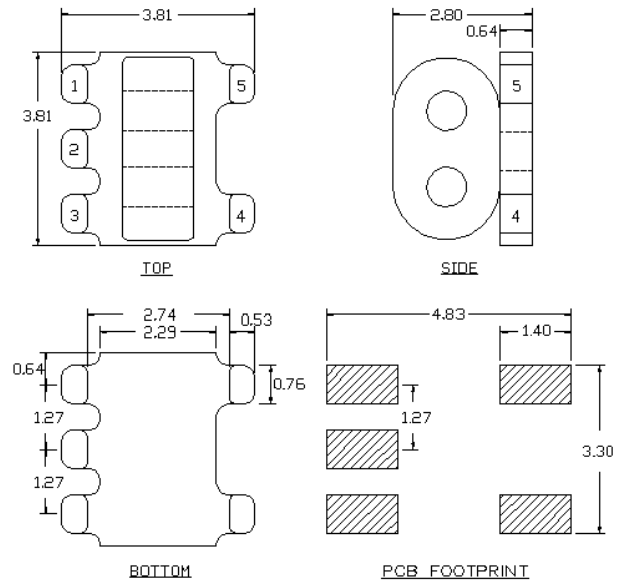


6. Recommended PCB layout shown above uses 1.6 mm FR4, Grounded coplanar wave guide, transmission line width 0.70 mm and gap 0.57 mm.

Application Schematic

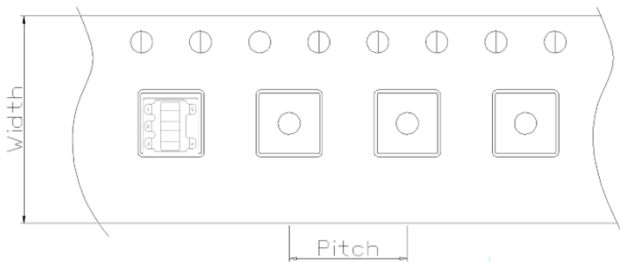


Outline Drawing^{7,8,9,10}



- 7. Dimensions in mm.
- 8. Tolerance: ± 0.2 mm unless otherwise noted.
- 9. Model number and lot code printed on reel.
- 10. 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	12
Pitch	mm	8
Orientation	—	F33
Reference Application Note ANI-019 for orientation		

Rev	Date	Change Description
V1	2024-February	Production Release

MACOM Technology Solutions Inc. ("MACOM"). All rights reserved.

These materials are provided in connection with MACOM's products as a service to its customers and may be used for informational purposes only. Except as provided in its Terms and Conditions of Sale or any separate agreement, MACOM assumes no liability or responsibility whatsoever, including for (i) errors or omissions in these materials; (ii) failure to update these materials; or (iii) conflicts or incompatibilities arising from future changes to specifications and product descriptions, which MACOM may make at any time, without notice. These materials grant no license, express or implied, to any intellectual property rights.

THESE MATERIALS ARE PROVIDED "AS IS" WITH NO WARRANTY OR LIABILITY, EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF MACOM PRODUCTS INCLUDING FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHT, ACCURACY OR COMPLETENESS, OR SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES WHICH MAY RESULT FROM 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.