

Coupler, 17.1 dB

5 - 1800 MHz



MACP-011128

Rev. V1

Features

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

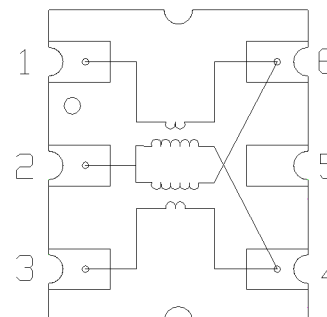
Applications

- CATV / Broadband

Description

The MACP-011128 is a 17.1 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
1	Input
2	Ground
3	Coupled
4	Isolated
5	Not connected
6	Output

3. MACOM recommends connecting unused package pins to ground.

Ordering Information^{1,2}

Part Number	Package
MACP-011128	900 piece reel
MACP-011128-TB	Sample Board

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

Coupler, 17.1 dB

5 - 1800 MHz



MACP-011128

Rev. V1

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

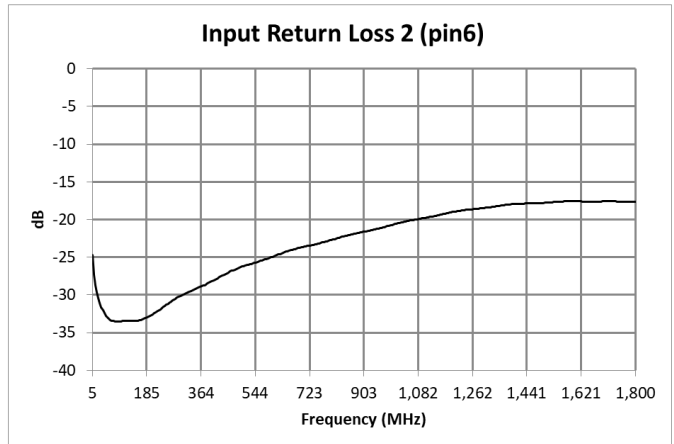
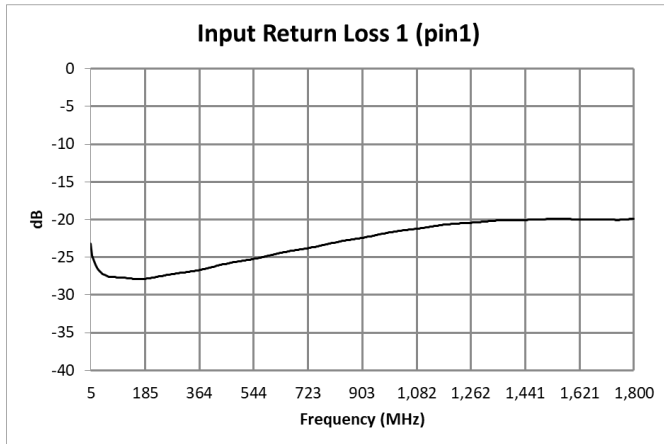
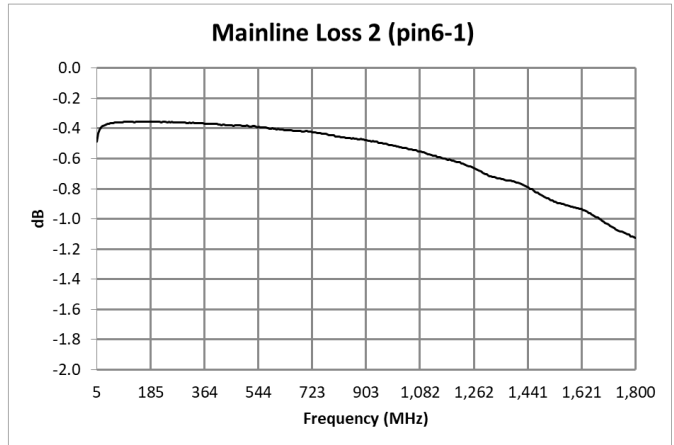
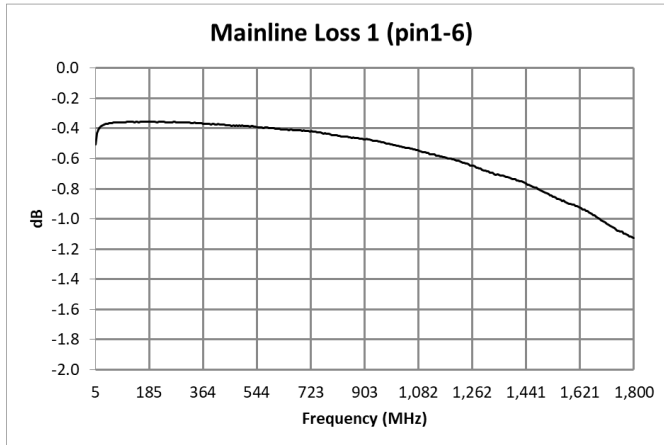
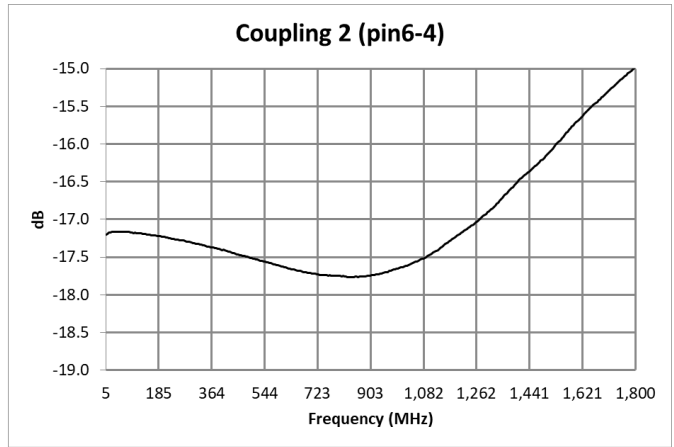
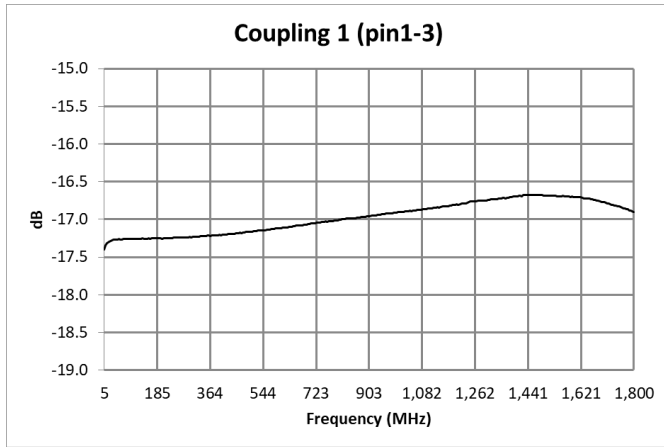
Parameter	Test Conditions	Units	Min.	Typ.	Max.
Coupling 1 (pin1-3)	5 - 102 MHz	dB	16.9	17.4	17.9
	102 - 900 MHz		16.5	17.0	17.5
	900 - 1225 MHz		16.3	16.8	17.3
	1225 - 1700 MHz		16.2	16.7	17.2
	1700 - 1800 MHz		16.3	16.8	17.3
Coupling 2 (pin6-4)	5 - 684 MHz	dB	17.0	17.5	18.2
Main Line Loss 1 (pin1-6)	5 - 900 MHz	dB	—	0.4	0.7
	900 - 1225 MHz			0.6	0.9
	1225 - 1500 MHz			0.9	1.2
	1500 - 1800 MHz			1.2	1.4
Main Line Loss 2 (pin6-1)	5 - 684 MHz	dB	—	0.4	0.7
Input Return Loss 1 (pin1)	5 - 900 MHz	dB	18	22	—
	900 - 1800 MHz		15	19	
Input Return Loss 2 (pin6)	5 - 684 MHz	dB	20	26	—
Output Return Loss 1 (pin6)	5 - 900 MHz	dB	18	22	—
	900 - 1800 MHz		14	17	
Output Return Loss 2 (pin1)	5 - 684 MHz	dB	18	26	—
Coupled Return Loss 1 (pin3)	5 - 900 MHz	dB	20	24	—
	900 - 1225 MHz		18	22	
	1225 - 1800 MHz		16	19	
Coupled Return Loss 2 (pin4)	5 - 684 MHz	dB	20	27	—
Isolation 1 (pin1-4)	5 - 900 MHz	dB	26	32	—
	900 - 1800 MHz		21	26	
Isolation 2 (pin6-3)	5 - 684 MHz	dB	26	34	—

Absolute Maximum Ratings^{4,5}

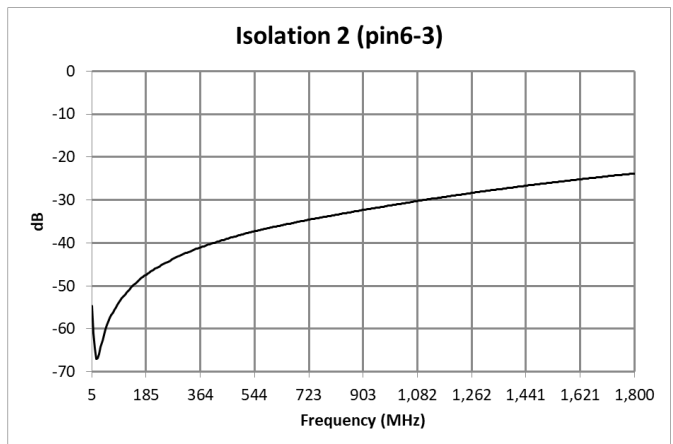
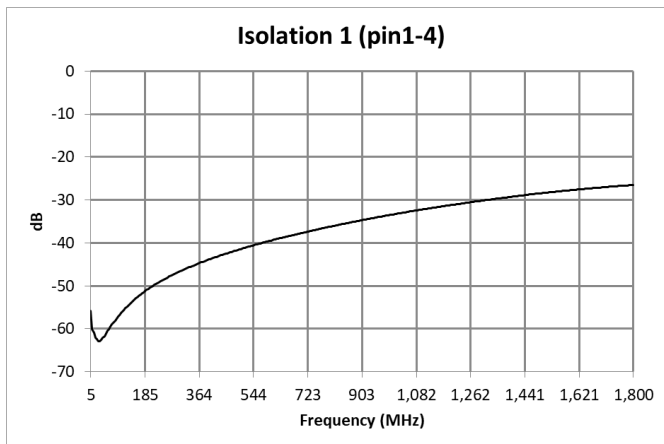
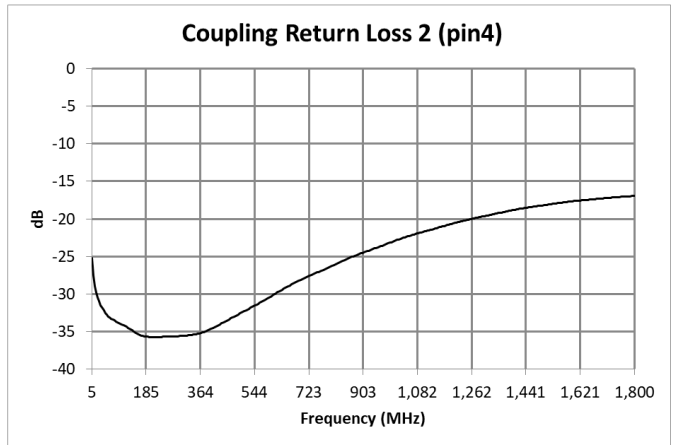
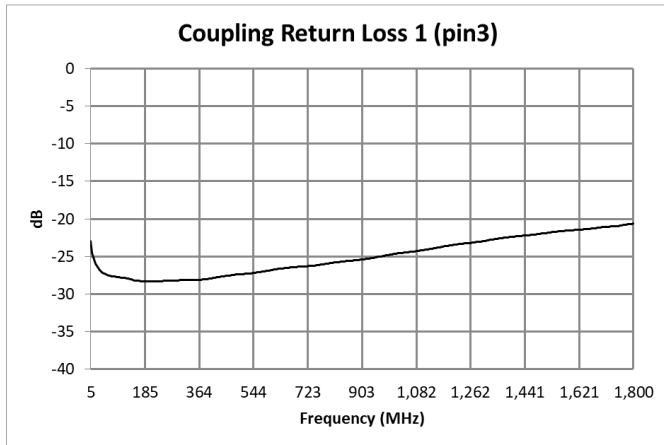
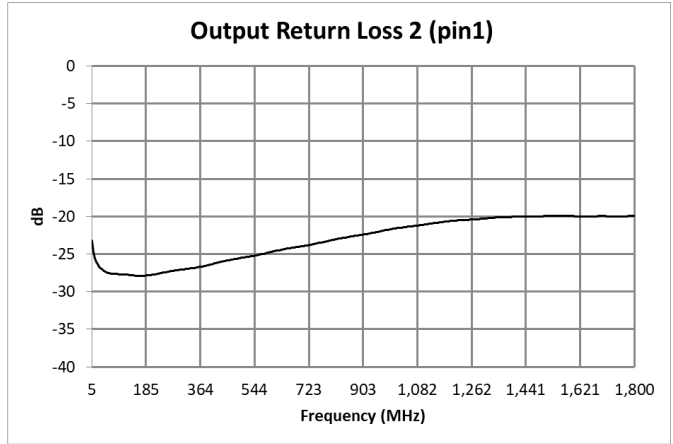
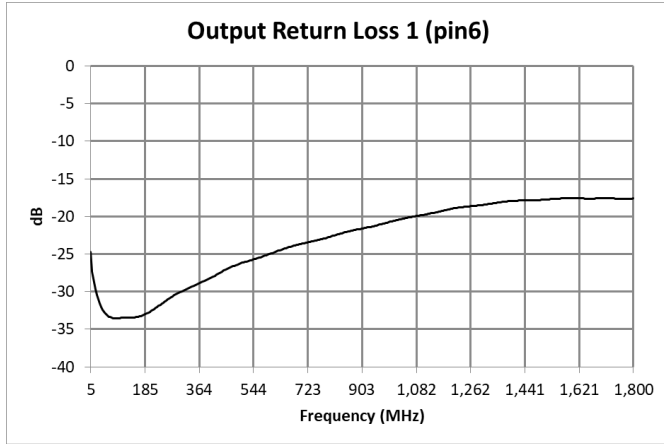
Parameter	Absolute Maximum
Input Power	2 W
DC Current	500 mA
Operating Temperature	-40°C to +85°C

- Exceeding any one or combination of these limits may cause permanent damage to this device.
- MACOM does not recommend sustained operation near these survivability limits.

Typical Performance Curves



Typical Performance Curves



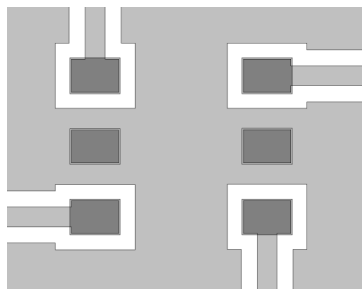
Coupler, 17.1 dB 5 - 1800 MHz



MACP-011128

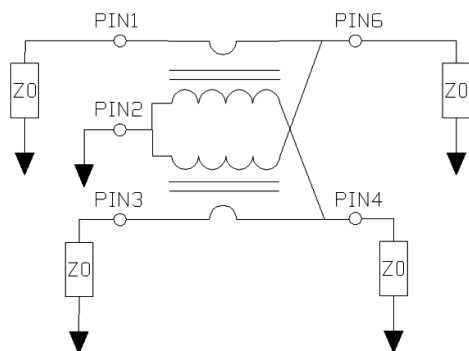
Rev. V1

Recommended Board Layout⁶

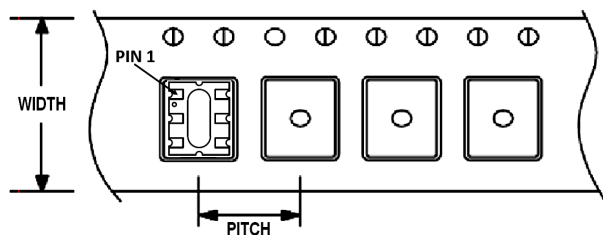


6. Recommended PCB layout shown above uses 1.6 mm FR4, Grounded coplanar wave guide, transmission line width 0.70 mm and gap 0.57 mm.

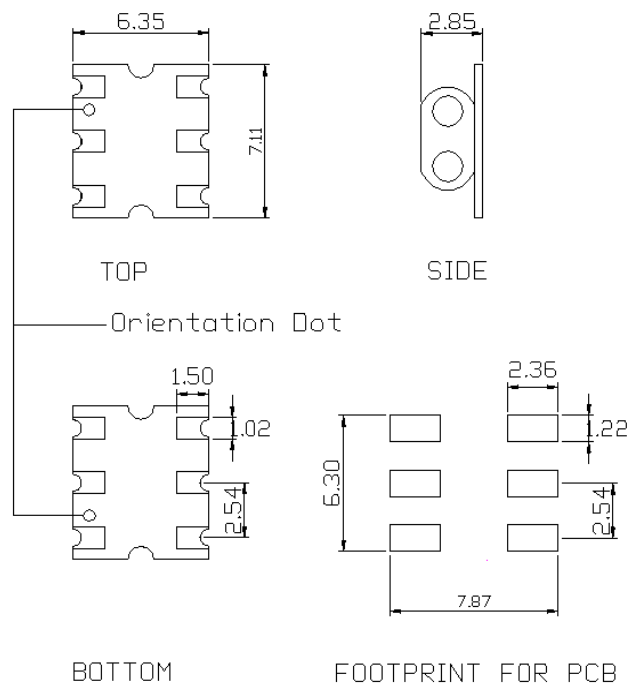
Application Schematic



Carrier Tape Orientation



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.

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	2024-August-15	Production Release

Coupler, 17.1 dB

5 - 1800 MHz



MACP-011128

Rev. V1

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.