

Coupler, 17.1 dB

5 - 1800 MHz



MACP-011129

Rev. V1

Features

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

Applications

- CATV / Broadband

Description

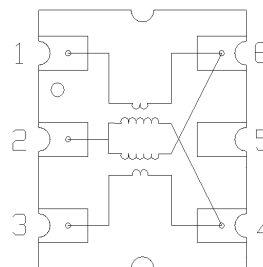
The MACP-011129 is a 17.1 dB broadband coupler in a surface mount package. It offers low loss, good isolation, good input/output matching.

Ordering Information^{1,2}

Part Number	Package
MACP-011129	900 piece reel
MACP-011129-TB	Sample Board

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

Functional Schematic



Pin Configuration³

Pin #	Function
1	Coupled
2	Ground
3	Input
4	Output
5	Not Connected
6	Isolated

3. MACOM recommends connecting unused package pins to ground.

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Electrical Specifications: Freq. = 5 - 1800 MHz, $T_A = +25^\circ\text{C}$, $Z_0 = 75 \Omega$, $P_{IN} = 0 \text{ dBm}$

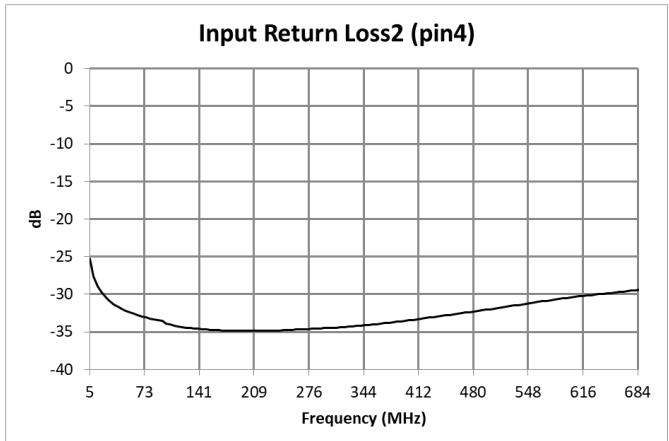
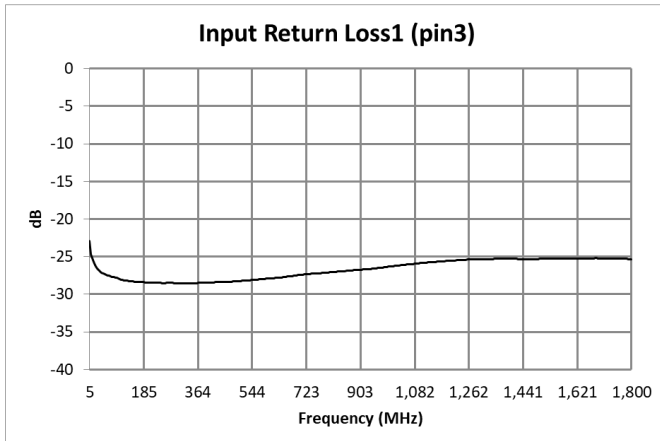
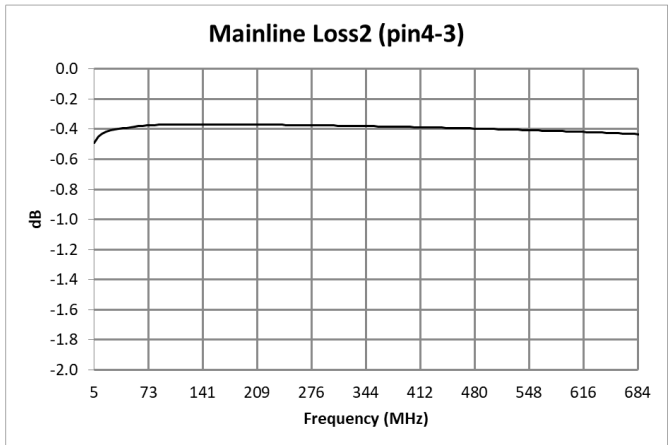
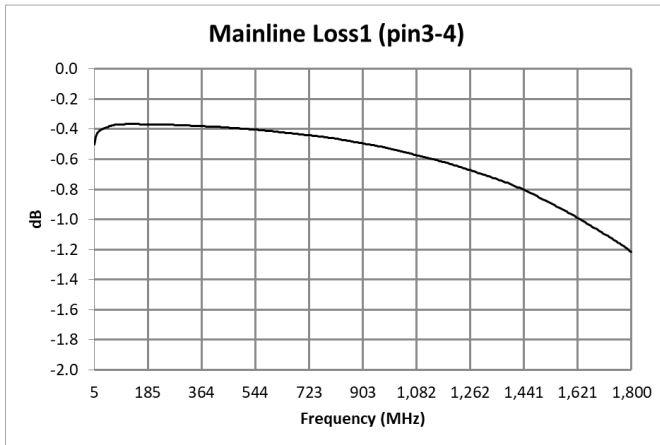
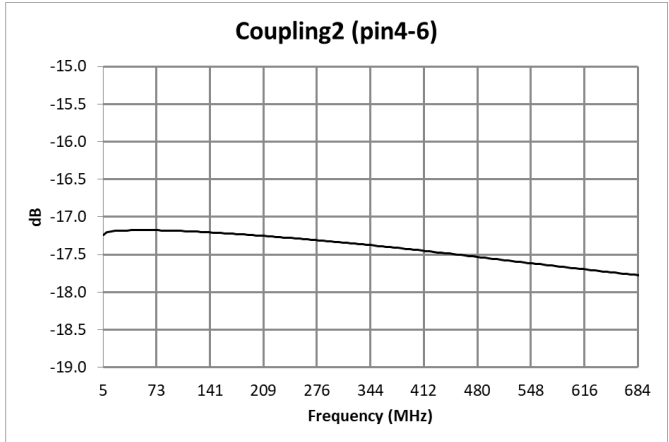
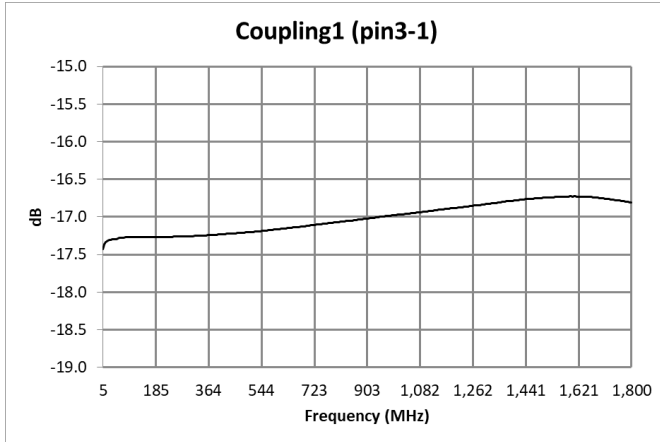
Parameter	Test Conditions	Units	Min.	Typ.	Max.
Coupling 1 (pin 3-1)	5 - 102 MHz	dB	16.9	17.4	17.9
	102 - 900 MHz		16.5	17.0	17.5
	900 - 1225 MHz		16.3	16.8	17.3
	1225 - 1700 MHz		16.2	16.7	17.2
	1700 - 1800 MHz		16.3	16.8	17.3
Coupling 2 (pin 4-6)	5 - 684	dB	17.0	17.6	18.2
Main Line Loss 1 (pin 3-4)	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 (pin 4-3)	5 - 684	dB	—	0.4	0.7
Input Return Loss 1 (pin 3)	5 - 900 MHz	dB	18	26	—
	900 - 1800 MHz		15	21	—
Input Return Loss 2 (pin 4)	5 - 684	dB	20	27	—
Output Return Loss 1 (pin 4)	5 - 900 MHz	dB	18	26	—
	900 - 1800 MHz		14	19	—
Output Return Loss 2 (pin 3)	5 - 684	dB	18	27	—
Coupled Return Loss 1 (pin 1)	5 - 900 MHz	dB	20	25	—
	900 - 1225 MHz		18	20	—
	1225 - 1800 MHz		16	19	—
Coupled Return Loss 2 (pin 6)	5 - 684	dB	20	27	—
Isolation 1 (pin 3-6)	5 - 900 MHz	dB	26	34	—
	900 - 1800 MHz		21	26	—
Isolation 2 (pin 4-1)	5 - 684	dB	26	37	—

Absolute Maximum Ratings^{4,5}

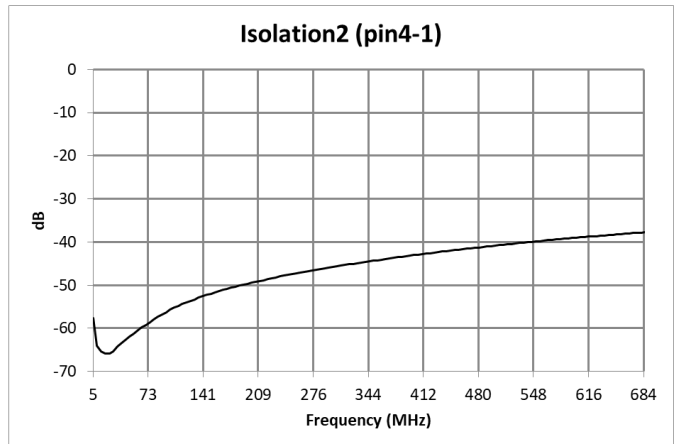
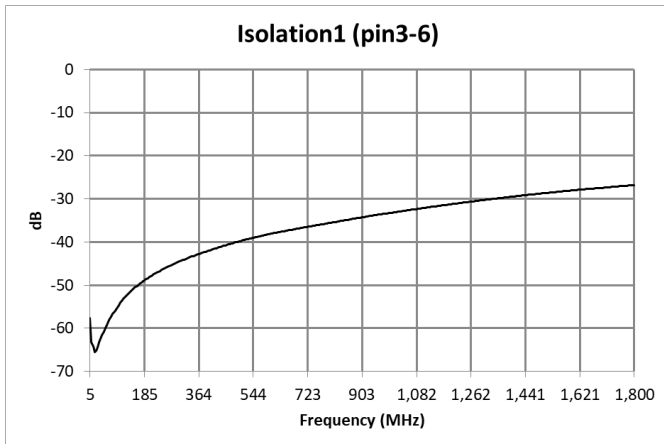
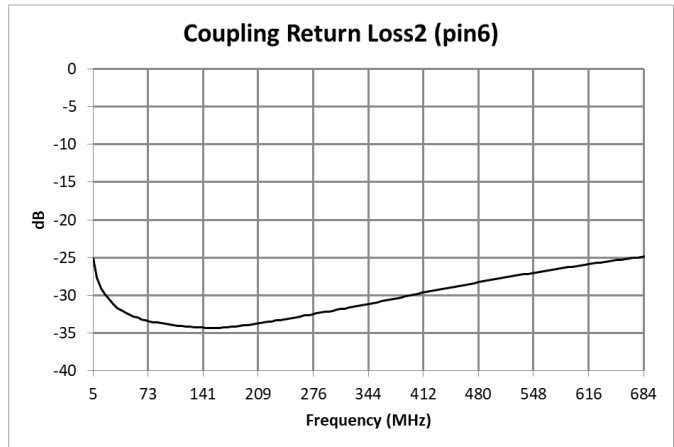
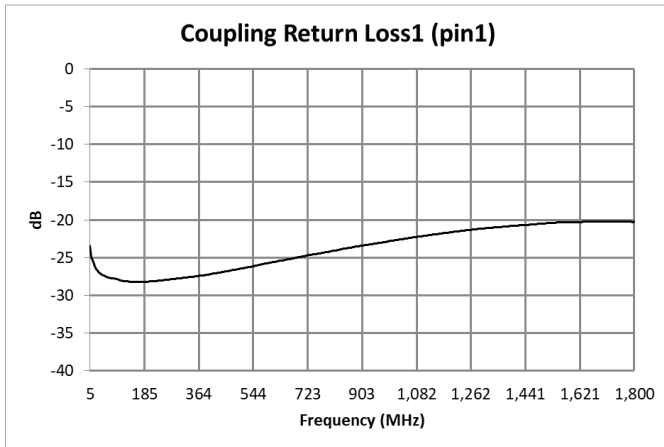
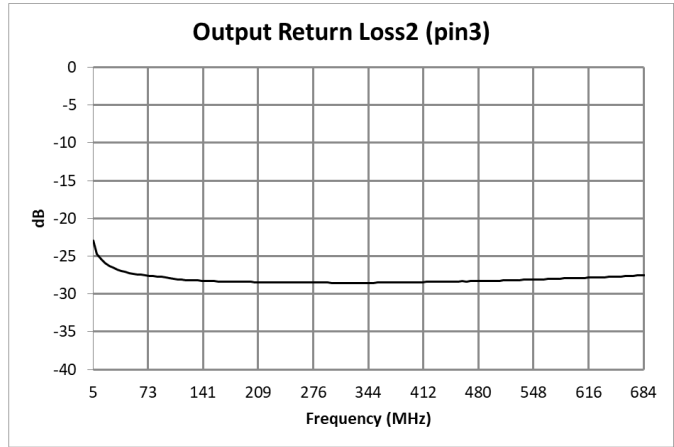
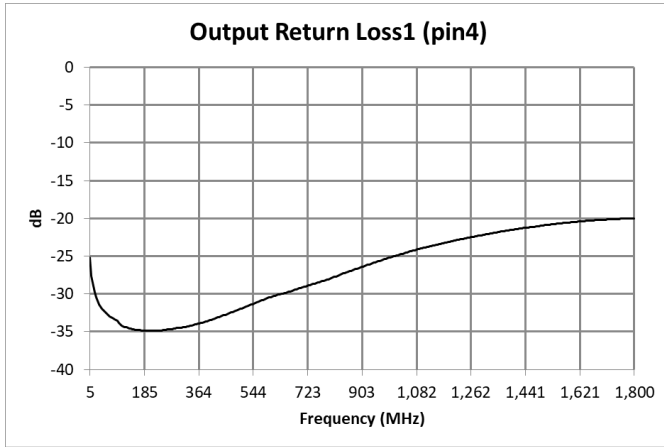
Parameter	Absolute Maximum
Input Power	2 W
DC Current	500 mA
Operating Temperature	-40°C to +85°C

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



Typical Performance Curves



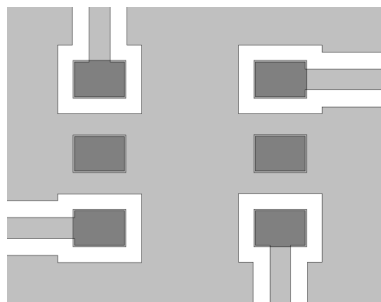
Coupler, 17.1 dB 5 - 1800 MHz



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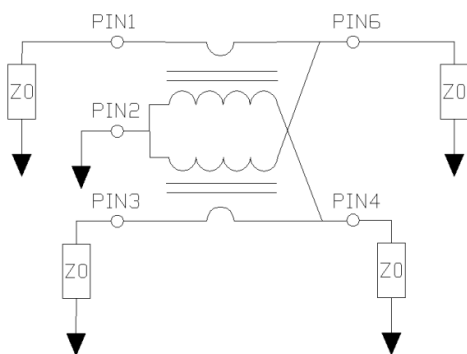
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Recommended Board Layout⁶

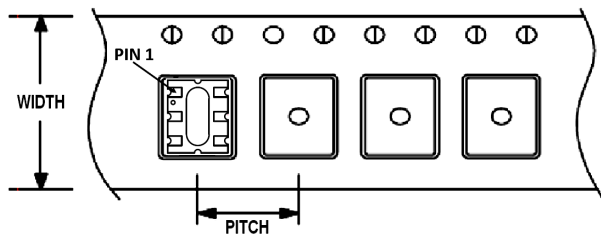


6. Recommended PCB layout shown above uses 1.6 mm FR4, Grounded coplanar wave guide, transmission line width 0.70 mm and gap 0.57 mm.

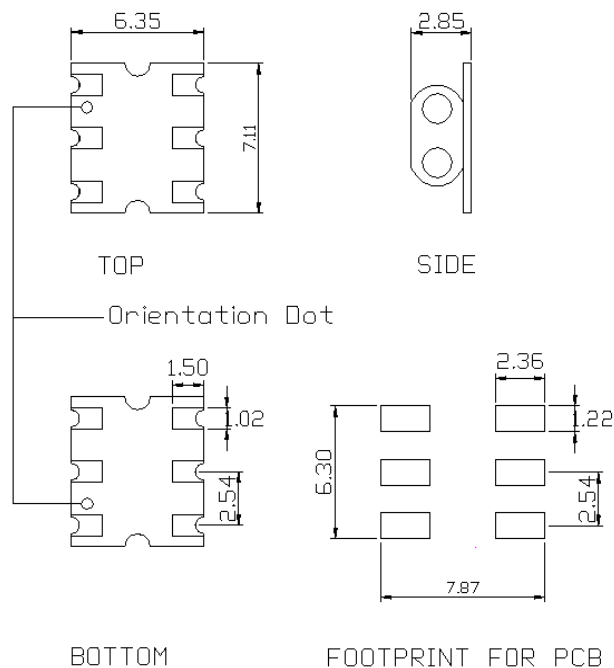
Application Schematic



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
Pitch	mm	12
Orientation	—	F33
Reference Application Note ANI-019 for orientation		

Rev	Date	Change Description
V1	2024-August-20	Production Release

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