Coupler, 9 dB
5 - 1800 MHz

MACP-011102
Rev. V1

Features

- 9 dB Coupling Ratio
- Surface Mount Package
- Available on Tape & Reel
- Excellent Temperature Stability
- RoHS Compliant and Pb Free

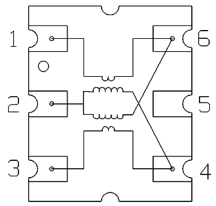
Applications

- CATV/Broadband

Description

The MACP-011102 is a 9 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 Configuration[3]

Pin #	Function	Pin #	Function
1	Input	4	External 75 Ω
2	Ground	5	Not connected
3	Coupled	6	Output

3. MACOM recommends connecting unused package pins to ground.

Electrical Specifications: Freq. = 5 - 1800 MHz, T_A = +25°C, Z_0 = 75 Ω, P_{IN} = 0 dBm

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Coupling (pin1-3)	5 - 1225 MHz	dB	8.5	9.0	9.5
Main Line Loss (pin1-6)	5 - 500 MHz 500 - 1225 MHz 1225 - 1800 MHz	dB	—	0.9 1.2 2.1	1.3 1.6 2.5
Input Return Loss (pin1)	5 - 1225 MHz 1225 - 1800 MHz	dB	16 15	20 18	—
Output Return Loss (pin6)	5 - 1225 MHz 1225 - 1800 MHz	dB	18 15	25 19	—
Coupled Return Loss (pin3)	5 - 1225 MHz 1225 - 1800 MHz	dB	12 15	15 18	—
Isolation (pin1-4)	5 - 500 MHz 500 - 1225 MHz 1225 - 1800 MHz	dB	32 25 19	40 30 24	—

Ordering Information[1,2]

Part Number	Package
MACP-011102	900 piece reel
MACP-011102-TB	Sample Board

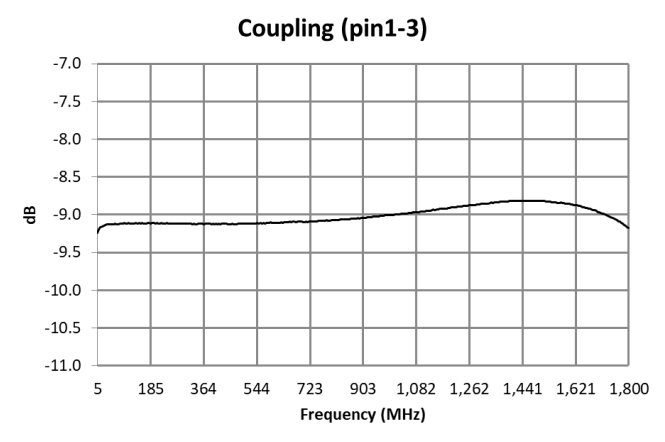
1. Reference Application Note M513 for reel size information.
2. All sample boards include 5 loose parts.

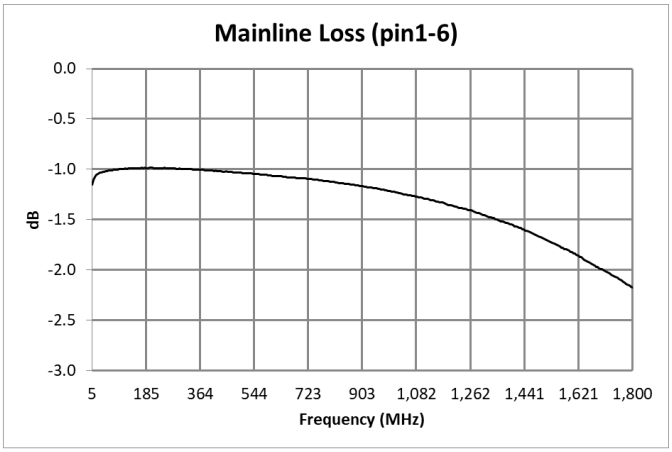
Absolute Maximum Ratings[4,5]

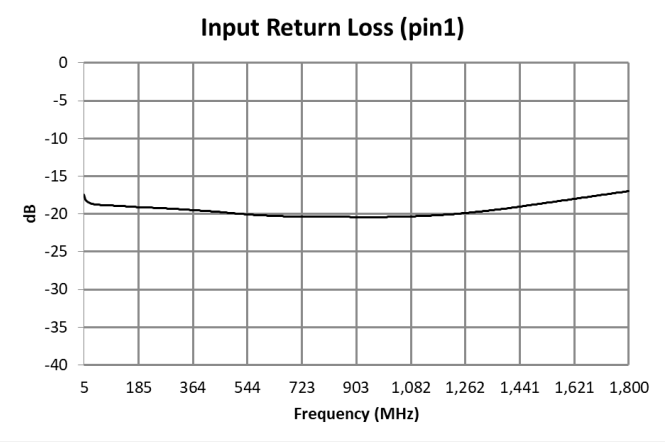
Parameter	Absolute Maximum
Input Power	2 W
DC Current	500 mA
Operating Temperature	-40°C to +85°C

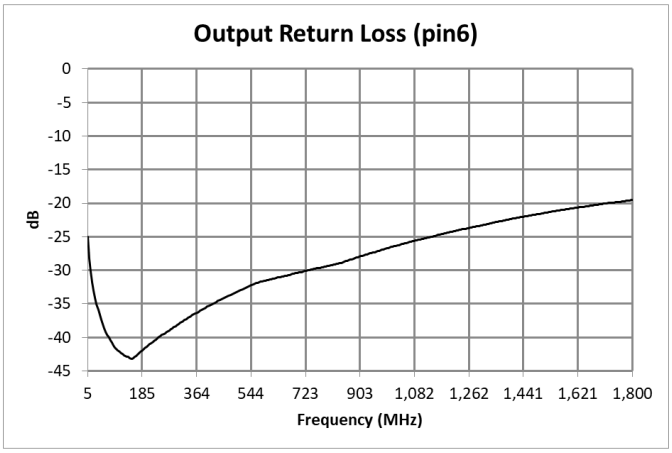
4. Exceeding any one or combination of these limits may cause permanent damage to this device.
5. MACOM does not recommend sustained operation near these survivability limits.

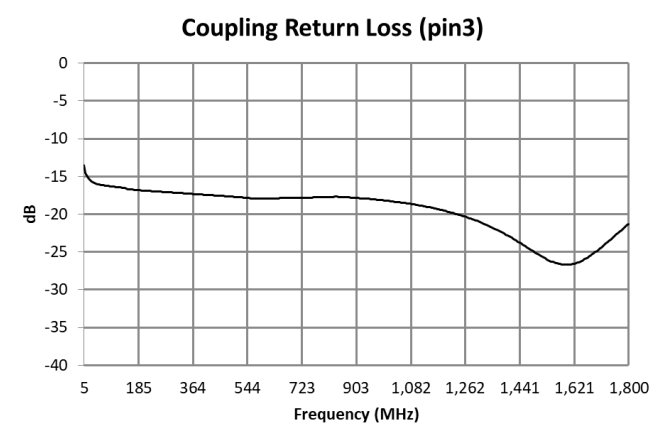
Typical Performance Curves

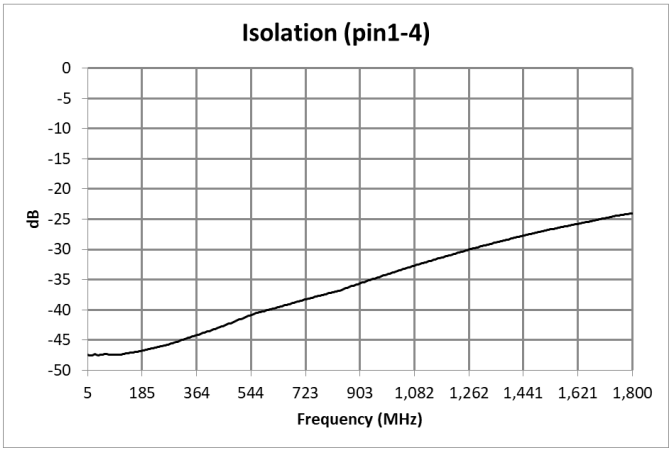




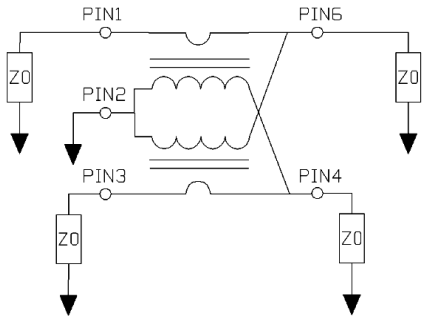




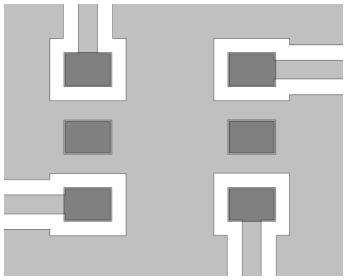




Application Schematic[6]

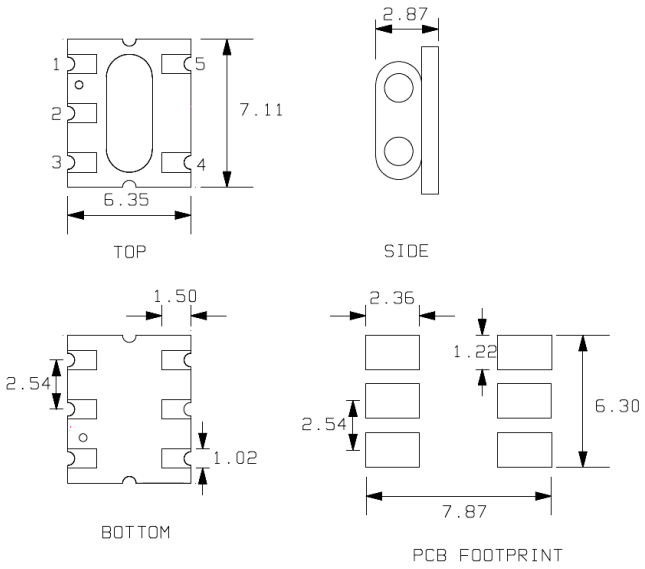


Recommended Board Layout[7]



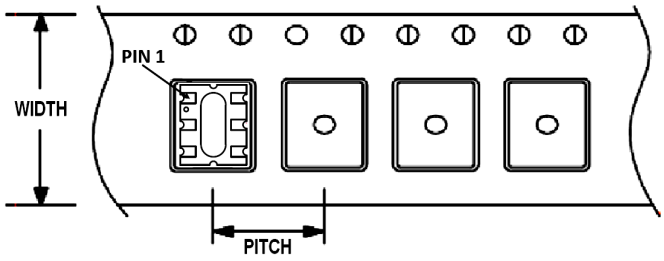
7. Recommended PCB layout shown above uses 1.6 mm FR4, Grounded coplanar wave guide, transmission line width 0.70 mm and gap 0.57 mm.

Outline Drawing[8,9,10,11]



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	—	900
Reel Size	mm	330
Tape Width	mm	16.0
Pitch	mm	12.0
Orientation	—	F33
Reference Application Note ANI-019 for orientation		

Revision History

Rev	Date	Change Description
V1	2023-Sep-15	Production Release