

## Features

- 23 dB Coupling Ratio
- Surface Mount Package
- Available on Tape and Reel
- Excellent Temperature Stability
- RoHS Compliant and Pb Free
- 260°C Reflow Compatible

## Description

The MACP-011045 is a 23 dB coupler in a low cost, surface mount package.

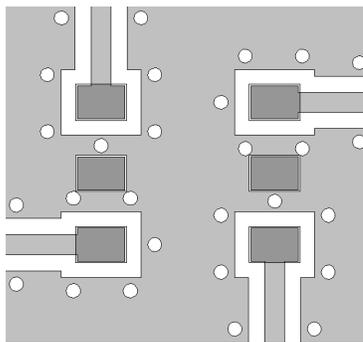
Ideally suited for wireless applications.

## Ordering Information<sup>1,2</sup>

Part #	Package
MACP-011045	900 piece reel
MACP-011045-TB	Sample Board

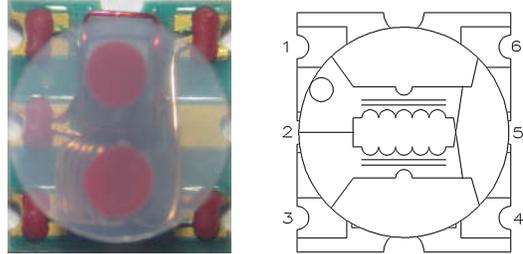
1. Reference Application Note M513 for reel size information.
2. All sample boards include 5 loose parts.

## PCB Layout<sup>3</sup>



3. 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.

## Functional Schematic

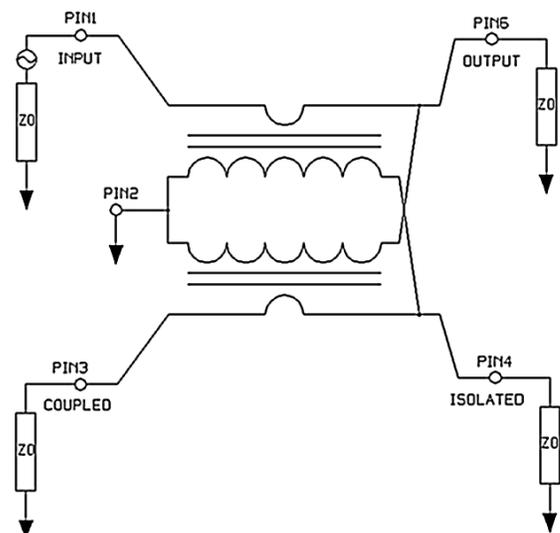


## Pin Configuration<sup>4</sup>

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

4. MACOM recommends connecting unused package pins to ground.

## Application Schematic



**Electrical Specifications: Freq. = 5 - 1225 MHz, T<sub>A</sub> = 25°C, Z<sub>0</sub> = 50 Ω, P<sub>IN</sub> = 0 dBm**

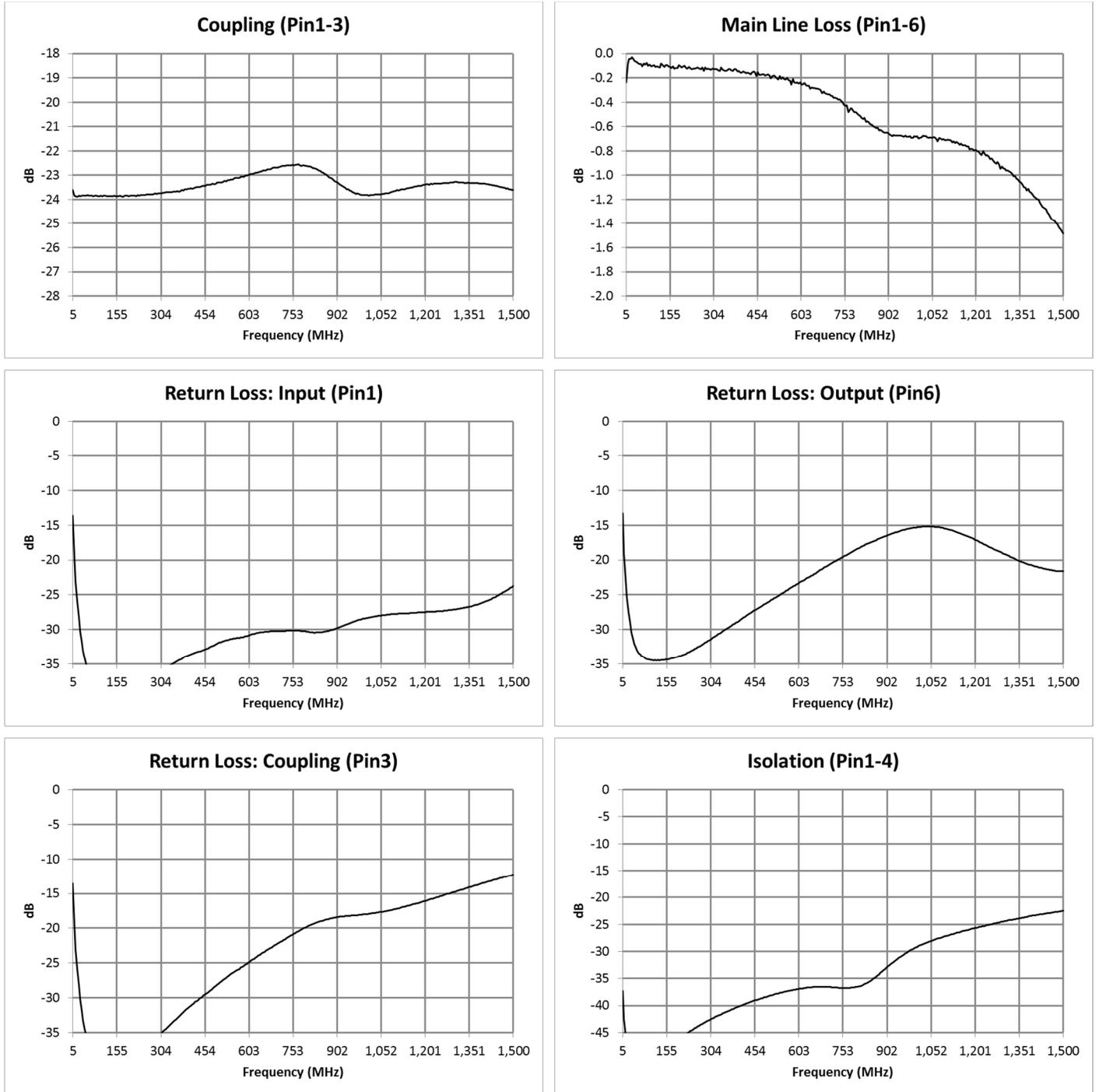
Parameter	Test Conditions	Units	Min.	Typ.	Max.
Coupling Ratio	—	dB	—	23	—
Coupling (Pin1-3)	5 - 30 MHz 30 - 88 MHz 88 - 512 MHz 512 - 1225 MHz	dB	24.2 24.2 25.0 27.5	23.8 23.8 23.6 23.4	23.0 23.5 22.0 20.5
Main Line Loss (Pin1-6)	5 - 30 MHz 30 - 88 MHz 88 - 512 MHz 512 - 1000 MHz 1000 - 1225 MHz	dB	—	0.10 0.10 0.14 0.74 0.80	0.4 0.2 0.3 1.0 1.2
Isolation (Pin1-4)	5 - 30 MHz 30 - 88 MHz 88 - 512 MHz 512 - 1000 MHz 1000 - 1225 MHz	dB	35 45 33 23 20	45 50 42 36 27	—
Input Return Loss (Pin1)	5 - 30 MHz 30 - 88 MHz 88 - 512 MHz 512 - 1000 MHz 1000 - 1225 MHz	dB	10 20 22 18 16	23 35 34 30 27	—
Output Return Loss (Pin6)	5 - 30 MHz 30 - 88 MHz 88 - 512 MHz 512 - 1000 MHz 1000 - 1225 MHz	dB	10 20 20 11 10	22 35 28 19 17	—
Coupling Return Loss (Pin3)	5 - 30 MHz 30 - 88 MHz 88 - 512 MHz 512 - 1000 MHz 1000 - 1225 MHz	dB	10 20 21 12 10	22 37 34 20 17	—

## Absolute Maximum Ratings

Parameter	Absolute Maximum
Input Power <sup>5</sup>	10 W
DC Current	500 mA
Operating Temperature	-40°C to +125°C

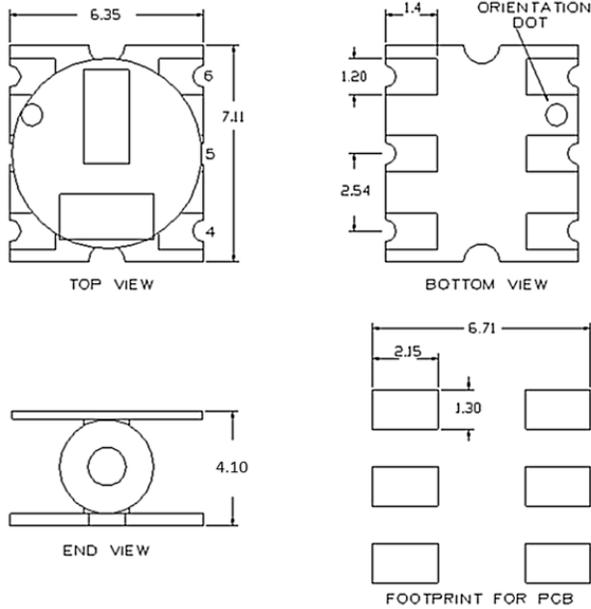
5. Appropriate thermal design is necessary for high power operation.

## Typical Performance Curves<sup>6</sup>



6. Full temperature plots available on request.

## Outline drawing<sup>7,8,9,10</sup>

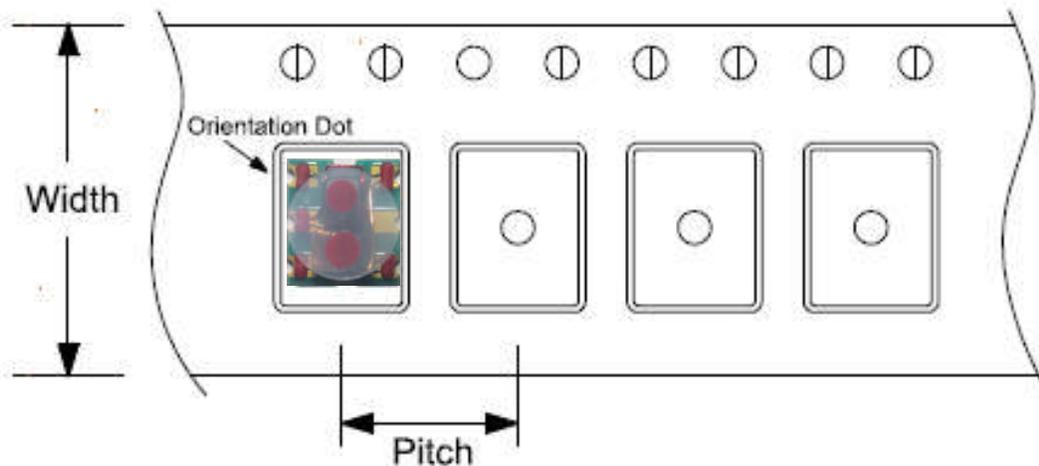


## Tape & Reel Information

Parameter	Units	Value
Qty per reel	-	900
Reel Size	mm	330
Tape Width	mm	16.0
Pitch	mm	12.0
Ao	mm	6.65
Bo	mm	7.4
Ko	mm	4.4
Orientation	-	F33
Reference Application Note ANI-019 for orientation		

- 7. Dimensions in mm.
- 8. Tolerance:  $\pm 0.2$  mm unless otherwise noted.
- 9. Model number and lot code printed on reel.
- 10. Finish: Electroless Nickel Immersion Gold.

## Carrier Tape Orientation



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