

## 15.2 dB Coupler 5 - 1225 MHz

Rev. V1

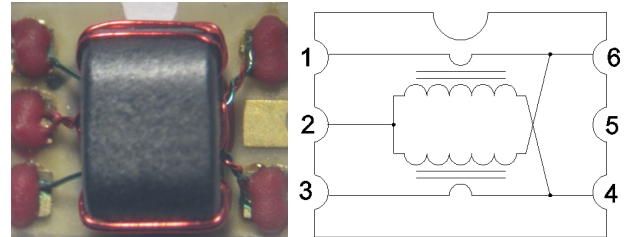
### Features

- 15.2 dB Coupling Ratio
- Surface Mount
- Bi-directional
- Similar performance in both configurations
- Available on Tape and Reel
- Excellent Temperature Stability
- RoHS Compliant and lead free
- 260°C Reflow Compatible

### Description

The MACP-011055 is a 15.2 dB coupler in a surface mount package. Ideally suited for broadband CATV applications. The bi-directional flexibility to use in either direction with similar performance.

### Functional Schematic



### Pin Configuration<sup>2</sup>

Pin #	Function	Pin #	Function
1	Input	4	Isolation
2	Center Tap (Ground)	5	Not Used
3	Coupling	6	Output

2. MACOM recommends connecting unused package pins to ground.

### Electrical Specifications: $T_A = 25^\circ\text{C}$ , $Z_0 = 75 \Omega$ , $P_{IN} = 0 \text{ dBm}$

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Coupling Ratio	-	dB	—	15.2	—
Coupling (Pin 1 - Pin 3)	5 - 1225 MHz	dB	14.8	15.2	15.8
Main Line Loss (Pin 1 - Pin 6)	5 - 1000 MHz 1000 - 1225 MHz	dB	—	0.7 0.9	1.0 1.2
Isolation (Pin 1 - Pin 4)	5 - 1225 MHz	dB	30	37	—
Input Return Loss (Pin 1)	5 - 1000 MHz 1000 - 1225 MHz	dB	19 18	23 22	—
Output Return Loss (Pin 6)	5 - 1000 MHz 1000 - 1225 MHz	dB	18 18	24 20	—
Coupling Return Loss (Pin 3)	5 - 1000 MHz 1000 - 1225 MHz	dB	18 18	23 22	—

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

Part Number	Package
MACP-011055	900 piece reel
MACP-011055-TB	Sample Board

1. All sample boards include 5 loose parts.

### Absolute Maximum Ratings<sup>3,4</sup>

Parameter	Absolute Maximum
Input Power	1.5 W
DC Current	500 mA
Operating Temperature	-40°C to +85°C

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

1

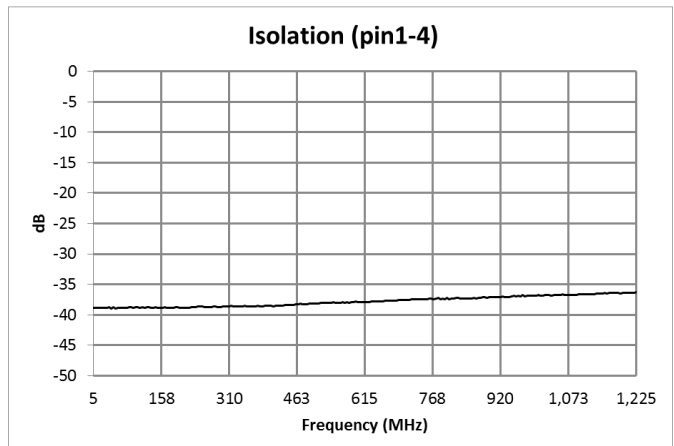
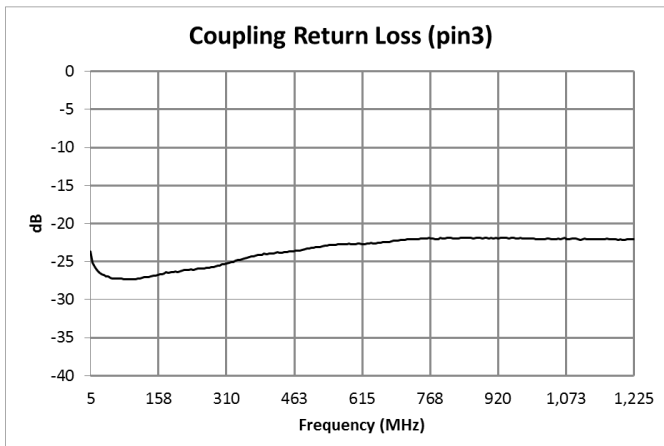
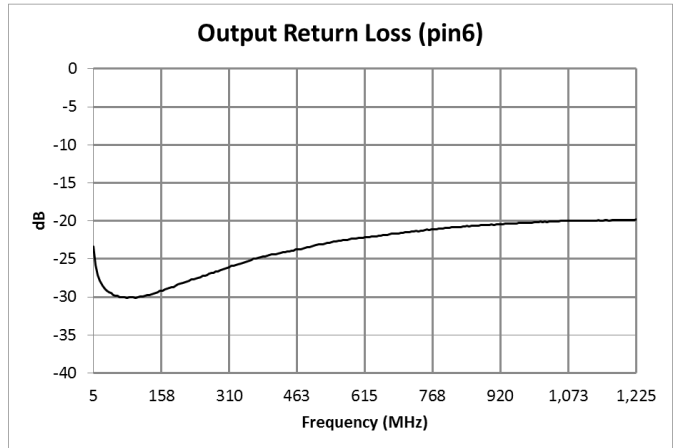
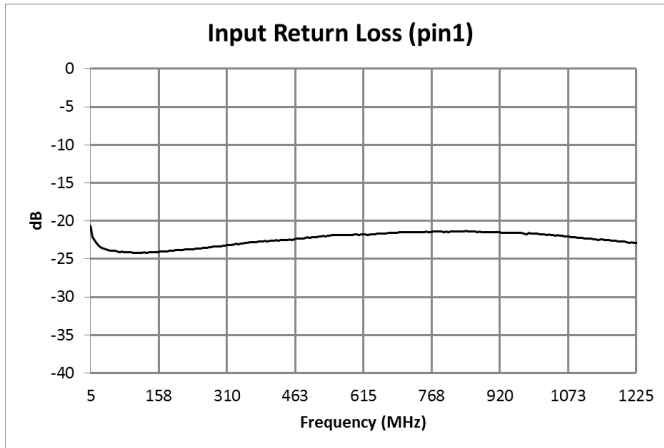
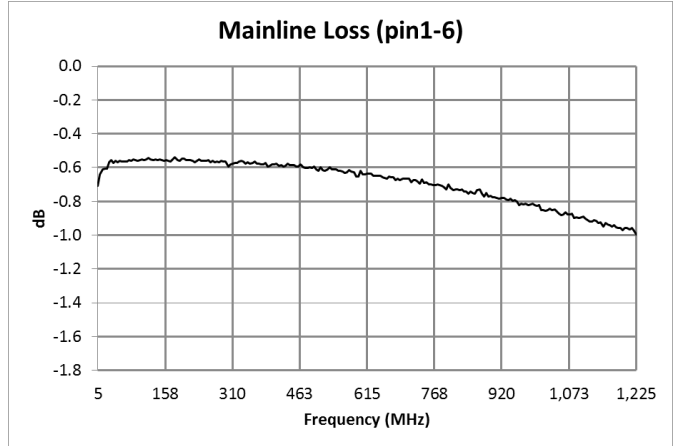
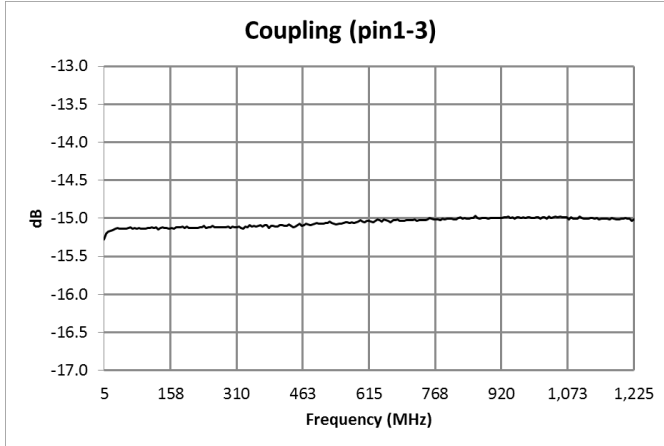
MACOM Technology Solutions Inc. (MACOM) and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.

Visit [www.macom.com](http://www.macom.com) for additional data sheets and product information.

For further information and support please visit:  
<https://www.macom.com/support>

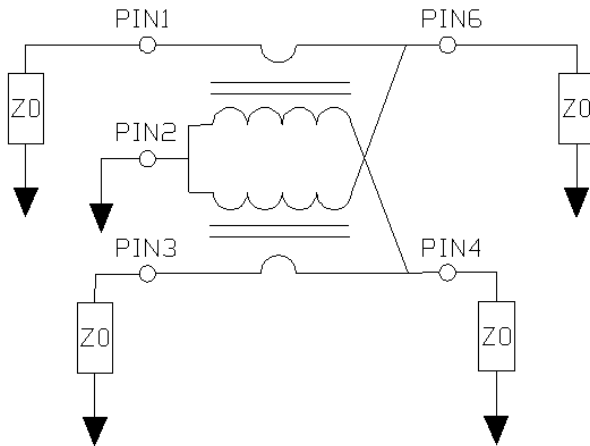
DC-0017762

## Typical Performance Curves<sup>5</sup>

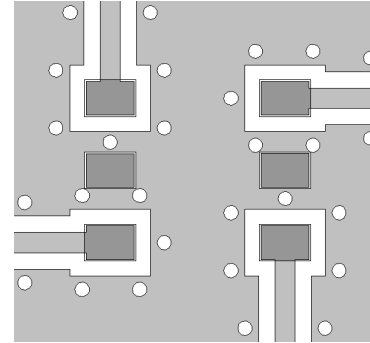


5. Full temperature plots available on request.

## Application Schematic

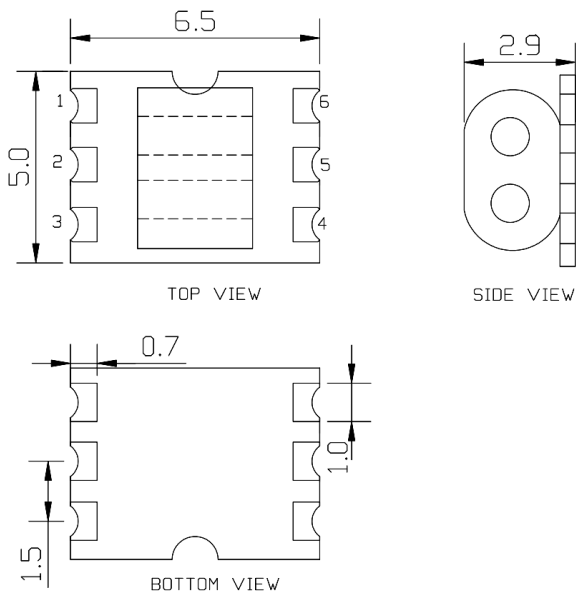


## Recommended Board Layout<sup>10</sup>

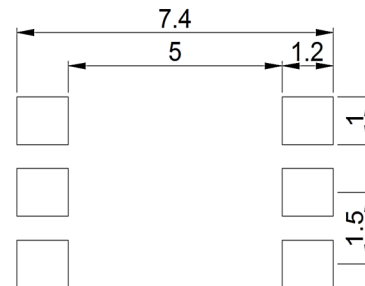


10. Recommended PCB layout shown above uses 1.6 mm FR4, rounded coplanar wave guide, transmission line width 0.70 mm and gap 0.57 mm.

## Outline Drawing<sup>6,7,8,9</sup>



## Recommended Footprint

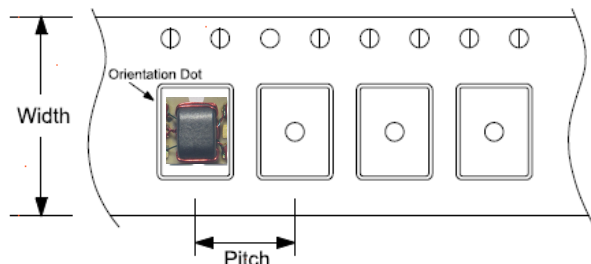


## Tape & Reel Information

Parameter	Units	Value
Qty per reel	-	900
Reel Size	mm	330
Tape Width	mm	16.00
Pitch	mm	12.00
Orientation	-	F45
Reference Application Note ANI-019 for orientation		

6. Dimensions in mm.
7. Tolerance:  $\pm 0.2$  mm unless otherwise noted.
8. Model number and lot code printed on reel.
9. Plating finish: ENIG on both sides, 0.05 to 0.1  $\mu\text{m}$  gold over 3 to 6  $\mu\text{m}$  nickel.

## Carrier Tape Orientation



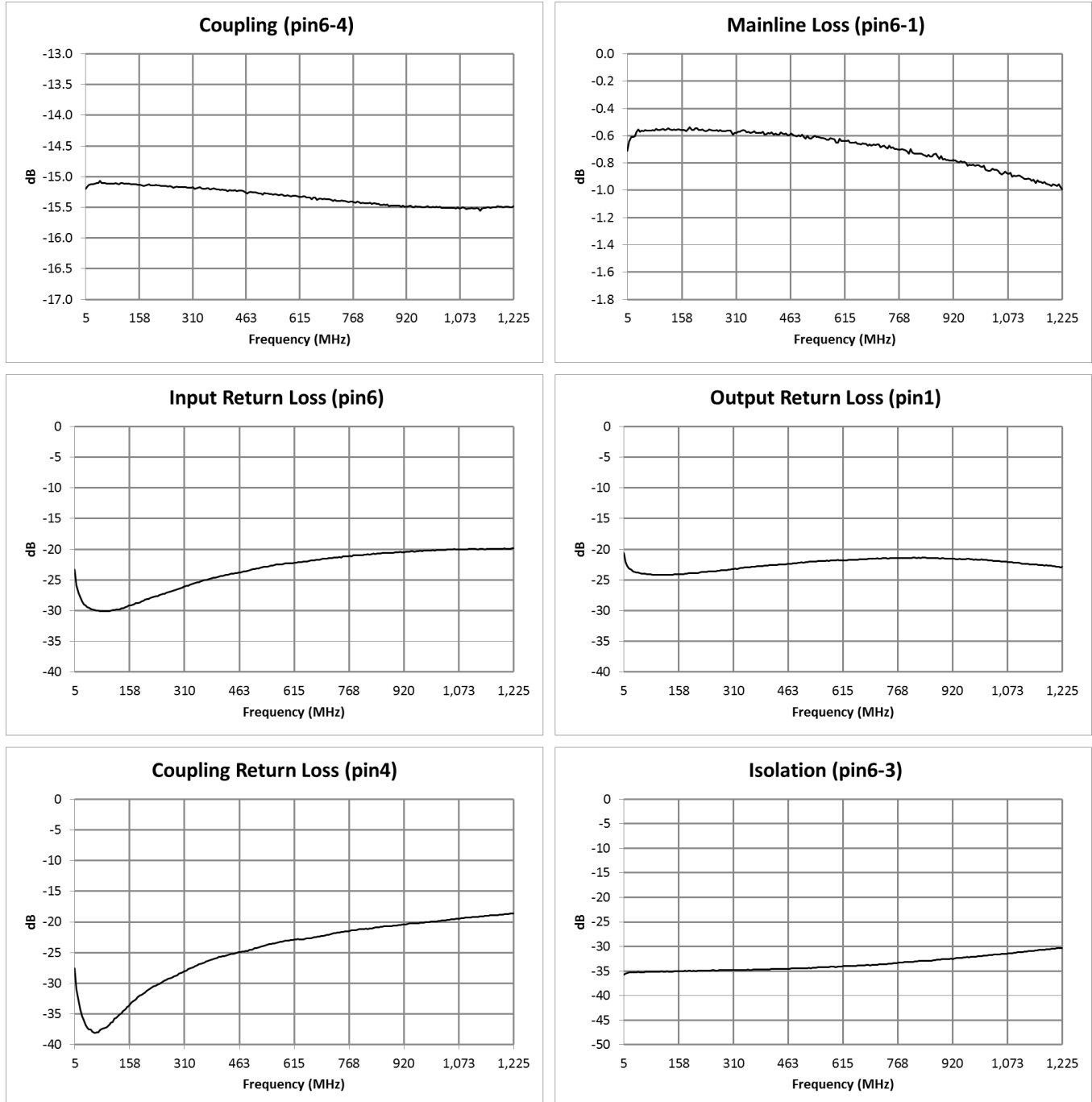
## Alternate Configuration

**Electrical Specifications:  $T_A = 25^\circ\text{C}$ ,  $Z_0 = 75 \Omega$ ,  $P_{in} = 0 \text{ dBm}$**

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Coupling Ratio	-	dB	—	15.2	—
Coupling (Pin 6 - Pin 4)	5 - 1225 MHz	dB	14.8	15.2	16.0
Main Line Loss (Pin 6 - Pin 1)	5 - 1000 MHz 1000 - 1225 MHz	dB	—	0.7 0.9	1.0 1.2
Isolation (Pin 6 - Pin 3)	5 - 1000 MHz 1000 - 1225 MHz	dB	29 27	34 31	—
Input Return Loss (Pin 6)	5 - 1000 MHz 1000 - 1225 MHz	dB	18 18	24 20	—
Output Return Loss (Pin 1)	5 - 1000 MHz 1000 - 1225 MHz	dB	19 18	23 22	—
Coupling Return Loss (Pin 4)	5 - 1000 MHz 1000 - 1225 MHz	dB	18 17	24 19	—

## Alternate Configuration

### Typical Performance Curves<sup>11</sup>



11. Full temperature plots available on request.

MACOM Technology Solutions Inc. All rights reserved.

Information in this document is provided in connection with MACOM Technology Solutions Inc ("MACOM") products. These materials are provided by MACOM as a service to its customers and may be used for informational purposes only. Except as provided in MACOM's Terms and Conditions of Sale for such products or in any separate agreement related to this document, MACOM assumes no liability whatsoever. MACOM assumes no responsibility for errors or omissions in these materials. MACOM may make changes to specifications and product descriptions at any time, without notice. MACOM makes no commitment to update the information and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to its specifications and product descriptions. No license, express or implied, by estoppels or otherwise, to any intellectual property rights is granted by this document.

THESE MATERIALS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF MACOM PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, CONSEQUENTIAL OR INCIDENTAL DAMAGES, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. MACOM FURTHER DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. MACOM SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS, WHICH MAY RESULT FROM THE 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.



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.