

## Features

- Surface Mount
- 17 dB Coupler
- 260°C Reflow Compatible
- RoHS\* Compliant version of EMDC-17-1-75
- Available on Tape and Reel. Reel quantity 2000

## Description

MACOM's MACP-007741-CG09E0 is a high performance 75  $\Omega$  coupler, in a SM-22 low cost, surface mount package. This coupler is designed for use in high volume CATV applications. Typical applications include Set-top Boxes, Network Interface Units, Broadband Amplifiers and Headend equipment.

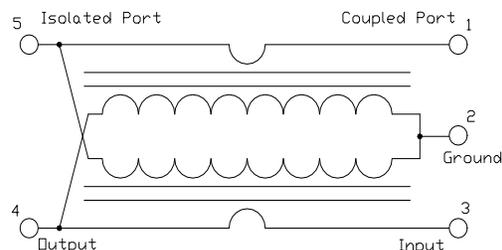


## Ordering Information<sup>1</sup>

| Part Number        | Package             |
|--------------------|---------------------|
| MACP-007741-CG09E0 | 2000 piece reel     |
| MACP-007741-CG09TB | Customer Test Board |

1. Reference Application Note M513 for reel size information.

## Functional Schematic



## Pin Configuration

| Pin Number | Function                                       |
|------------|--|
| 1          | Coupled  |
| 2          | Ground   |
| 3          | Input  |
| 4          | Output   |
| 5          | Isolated<br>(external 75 $\Omega$ termination) |

\* Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.

**Electrical Specifications:  $T_A = +25^\circ\text{C}$ ,  $Z_0 = 75 \Omega$**

| Parameter         | Test Conditions   | Units | Min.               | Typ.                 | Max.              |
|-------------------|---|-------|--------------------|----------------------|-------------------|
| Coupling          | 5 - 1200 MHz  | dB    | —                  | 17                   | $\pm 1.5$         |
| Coupling Flatness | 5 - 1200 MHz  | dB    | —                  | —                    | $\pm 1.2$         |
| Main Line Loss    | 5 - 50 MHz<br>50 - 1000 MHz<br>1000 - 1200 MHz                  | dB    | —                  | 0.5<br>0.8<br>1.5    | 0.9<br>1.6<br>2.8 |
| Directivity       | 5 - 50 MHz<br>50 - 500 MHz<br>500 - 1200 MHz                    | dB    | 25<br>7<br>5       | 35<br>15<br>12       | —                 |
| Return Loss       | 5 - 50 MHz<br>50 - 500 MHz<br>500 - 1000 MHz<br>1000 - 1200 MHz | dB    | 23<br>15<br>9<br>7 | 27<br>21<br>16<br>15 | —                 |

**Absolute Maximum Ratings<sup>2,3</sup>**

| Parameter             | Absolute Maximum                            |
|-----------------------|---|
| Input Power           | 250 mV                                      |
| DC Current            | 30 mA                                       |
| Operating Temperature | $-40^\circ\text{C}$ to $+85^\circ\text{C}$  |
| Storage Temperature   | $-55^\circ\text{C}$ to $+100^\circ\text{C}$ |

- 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.

**Handling Procedures**

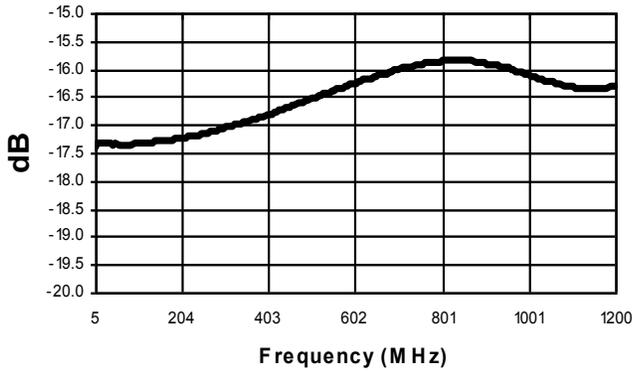
Please observe the following precautions to avoid damage:

**Static Sensitivity**

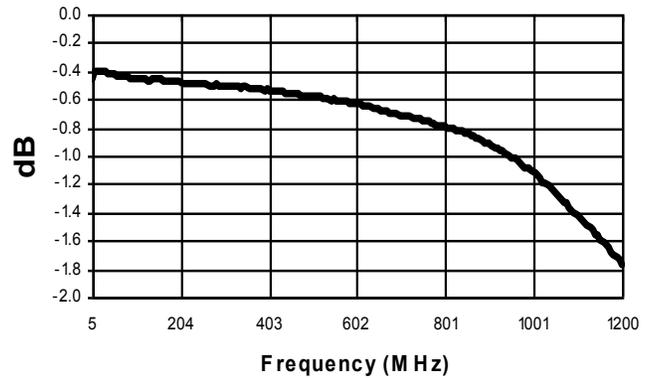
These electronic devices are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

## Typical Performance Curves

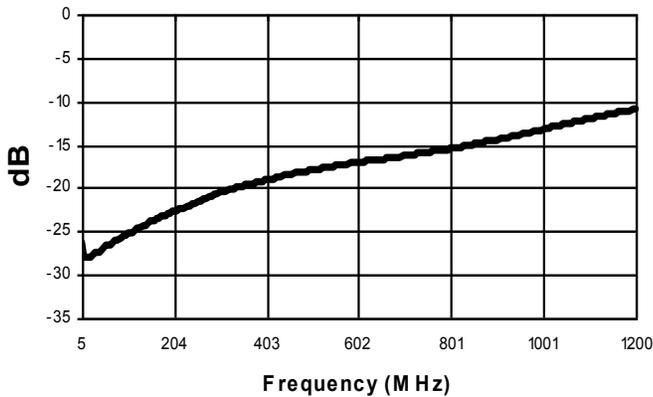
**Coupling**



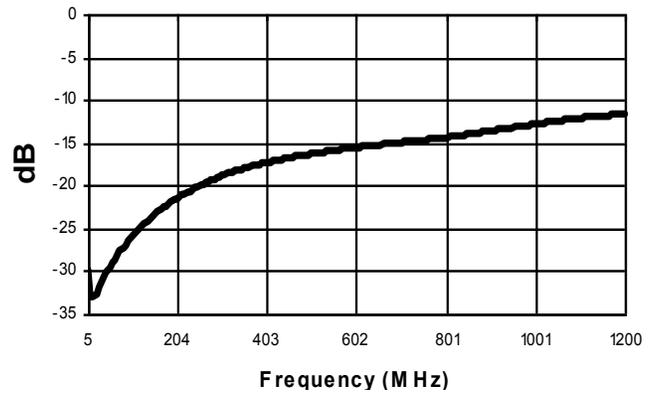
**Main Line Loss**



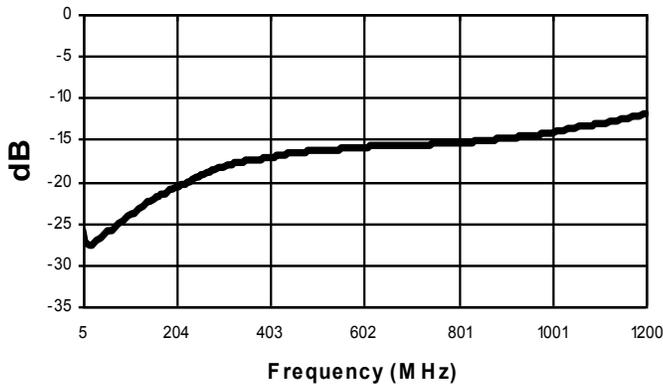
**Input Return Loss**



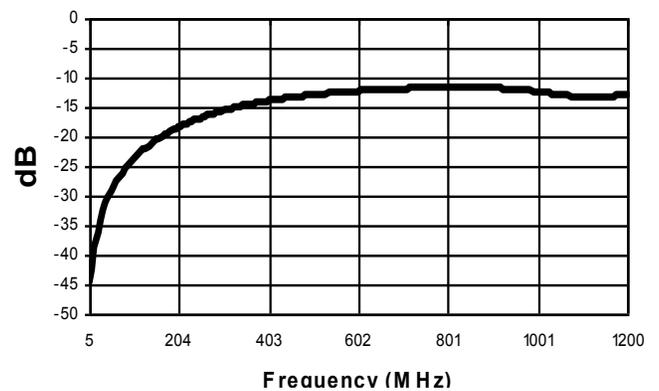
**Output Return Loss**



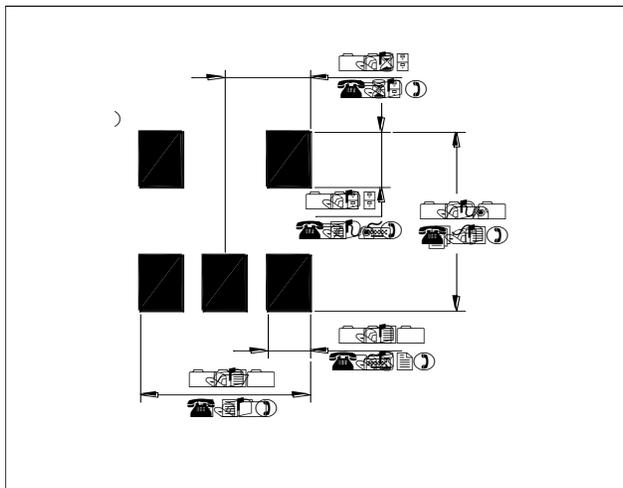
**Coupled Return Loss**



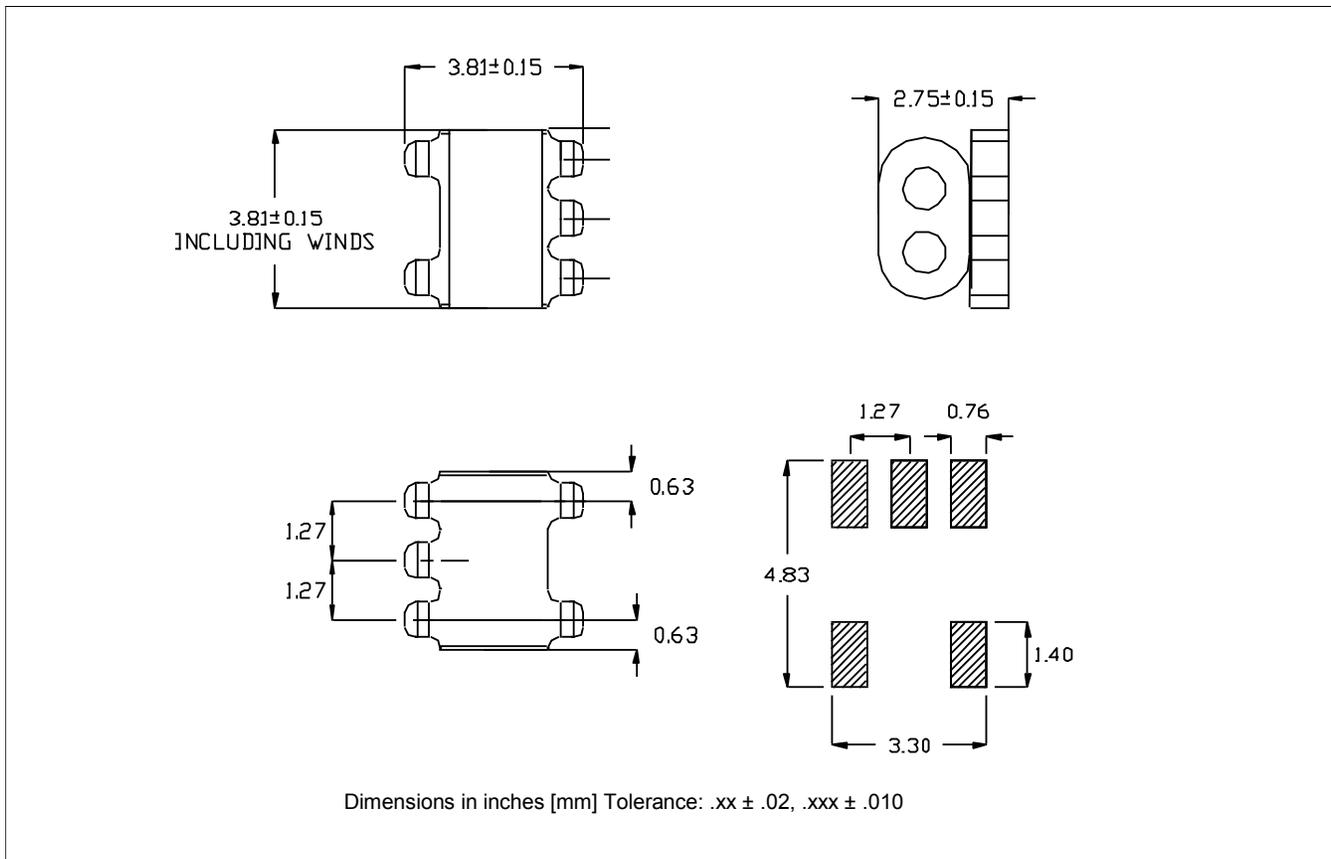
**Directivity**



## Recommended PCB Configuration



## Outline Drawing, Case Style SM-22



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