

17dB Coupler
5-870 MHz

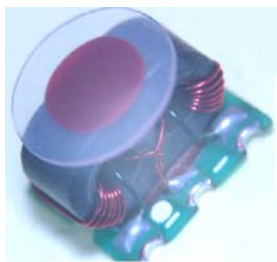
MACP-008248-CH0670
V1

Features

- Surface Mount
- Coupling 17.5 dB Typical
- 260°C Reflow Compatible
- RoHS* Compliant
- RoHS version of MACPCT0002
- Available on Tape and Reel. Reel quantity 900

Description

M/A-COM's MACP-008248-CH0670 is a high performance 75 ohm Coupler, in an SM-103 low cost, surface mount package. The MACP-008248-CH0670 is specifically designed for extremely low intermod distortion in CATV applications.



Pin Configuration

| Pin No. | Function |
|---------|------------------|
| 1 | Output |
| 2 | Not connected |
| 3 | External 75 ohms |
| 4 | Coupled |
| 5 | Ground |
| 6 | Input |

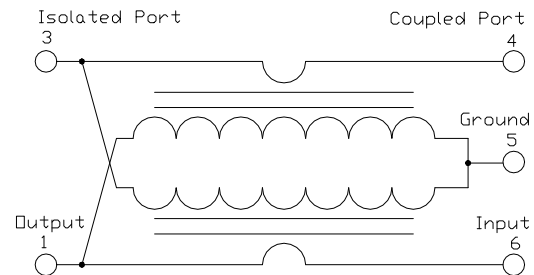
Ordering Information

| Part Number | Package |
|--------------------|---------------------|
| MACP-008248-CH0670 | 900 |
| MACP-008248-CH06TB | Customer Test Board |

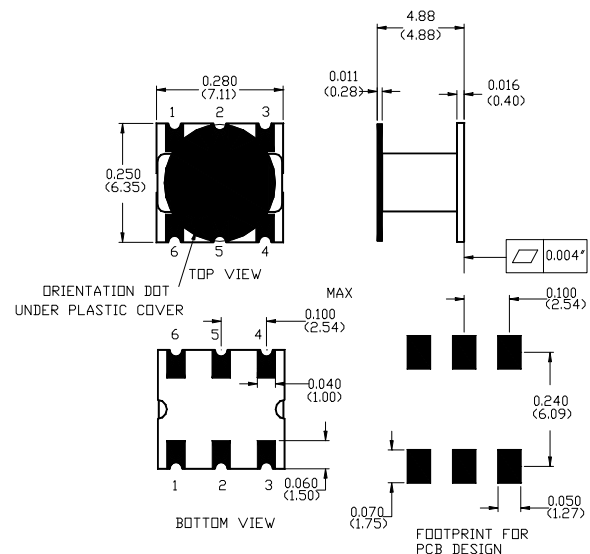
Note: Reference Application Note **M513** for reel size information.

* Restrictions on Hazardous Substances, European Union Directive 2002/95/EC.

Schematic



Case Style: SM-103-A



Dimensions in inches [mm] Tolerance: .xx ± .02, .xxx ± .010

Note: The SM-103-A incorporates the plastic cover & also has the dot removed from the bottom of the PCB

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Electrical Specifications: $T_A = 25^\circ\text{C}$, $Z_0 = 75\Omega$ ¹

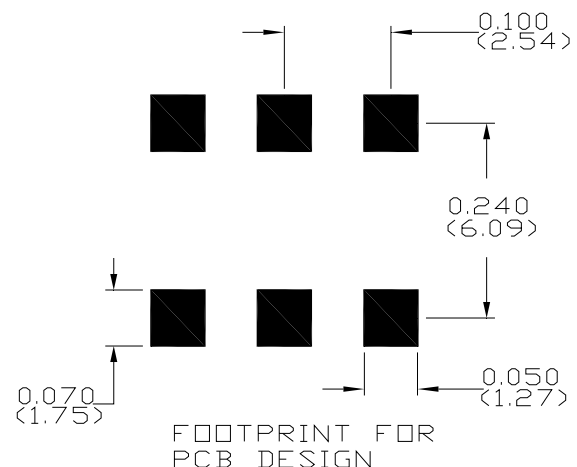
| Parameter | Frequency | Units | Min | Typ | Max |
|--|----------------|-------|-----|------|------|
| Main Line Loss {Pins 6-1} {Pins 4-3} | 5 - 40 MHz | dB | - | 0.5 | 0.8 |
| | 40 - 750 MHz | dB | - | 0.7 | 1.0 |
| | 750 - 1000 MHz | dB | - | 0.9 | 1.2 |
| Coupling Forward {Pins 6-4} | 5 - 870 MHz | dB | - | 17.5 | ±0.5 |
| Coupling Reverse {Pins 1-3} | 5 - 200 MHz | dB | - | 17.5 | ±0.5 |
| | 200-500 MHz | dB | - | 18.5 | ±1.5 |
| | 500 - 870 MHz | dB | - | 19.5 | ±1.5 |
| Coupling Flatness | 5 - 870 MHz | dB | - | - | 1.0 |
| Inductance {Pin 6-1 & Pin 4-3} | 5 MHz | nH | 240 | 245 | 260 |
| Input Return Loss | 5 - 40 MHz | dB | 22 | 25 | - |
| | 40-870 MHz | dB | 18 | 22 | - |
| Output Return Loss | 5 - 40 MHz | dB | 22 | 25 | - |
| | 40-870 MHz | dB | 18 | 22 | - |
| Coupling Port Return Loss | 5 - 40 MHz | dB | 22 | 25 | - |
| | 40-870 MHz | dB | 18 | 22 | - |
| Directivity | 5 - 40 MHz | dB | 20 | 25 | - |
| | 40-870 MHz | dB | 10 | 15 | - |

Absolute Maximum Ratings^{1,2}

| Parameter | Absolute Maximum |
|-------------------------------|------------------|
| RF Power | 1 Watt |
| Internal Load Dissipation | 0.125 Watt |
| Pin Temperature (10 Seconds) | 260 °C |
| Operating/Storage Temperature | -20°C to +85°C |

- Exceeding any one or combination of these limits may cause permanent damage to this device.
- M/A-COM does not recommend sustained operation near these survivability limits.

Recommended PCB Configuration

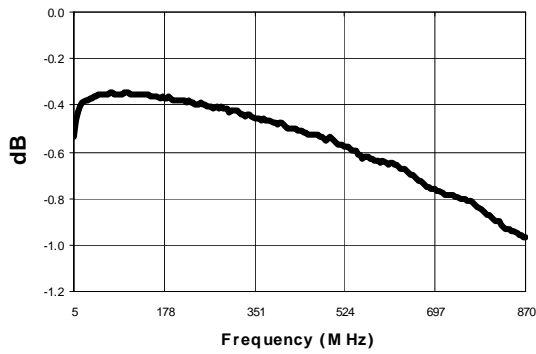


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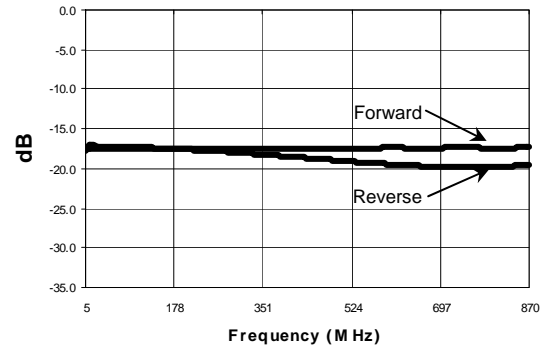
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Typical Performance Curves: $T_A = 25^\circ\text{C}$, $Z_0 = 75\Omega$ ¹

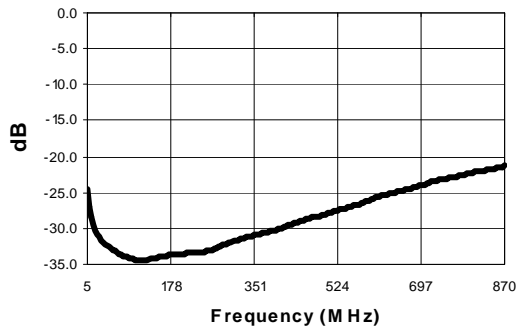
Main Line Loss



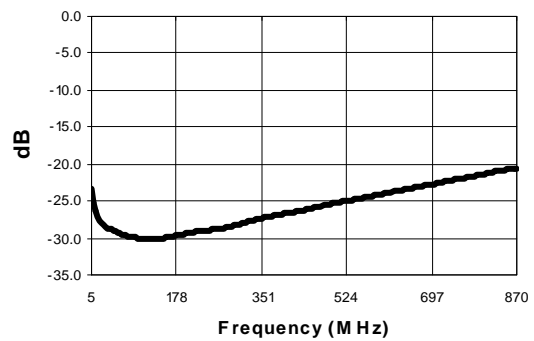
Coupling



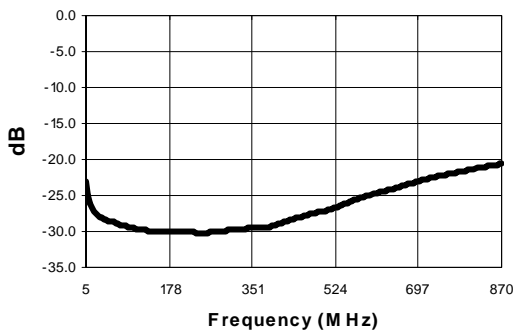
Return Loss: Output



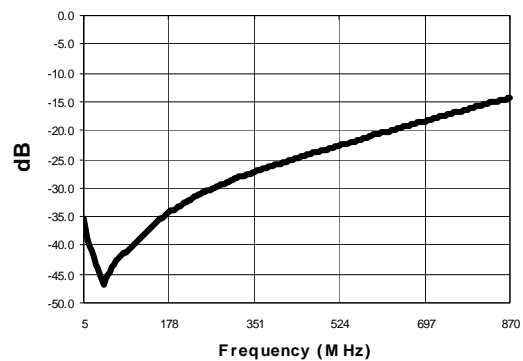
Return Loss; Input



Return Loss: Coupling



Directivity



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• North America Tel: 800.366.2266 • Europe Tel: +353.21.244.6400
 • India Tel: +91.80.4155721 • China Tel: +86.21.2407.1588
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