

E-Series 17.4dB Coupler 5-870MHz

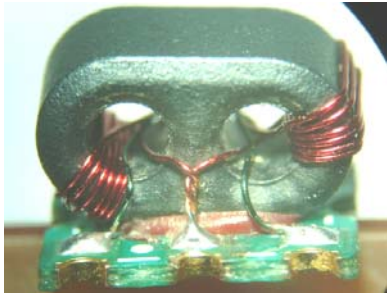
MACPCT0038
V1P

Features

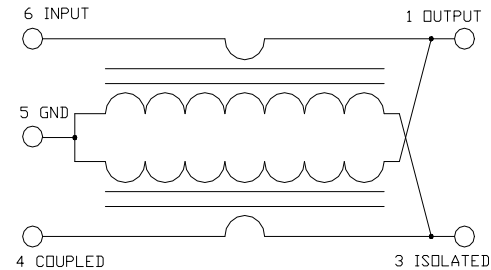
- Surface Mount
- Typical Coupling 17.4dB
- 260°C Reflow Compatible
- RoHS* Compliant
- Available on Tape and Reel. Reel quantity 900

Description

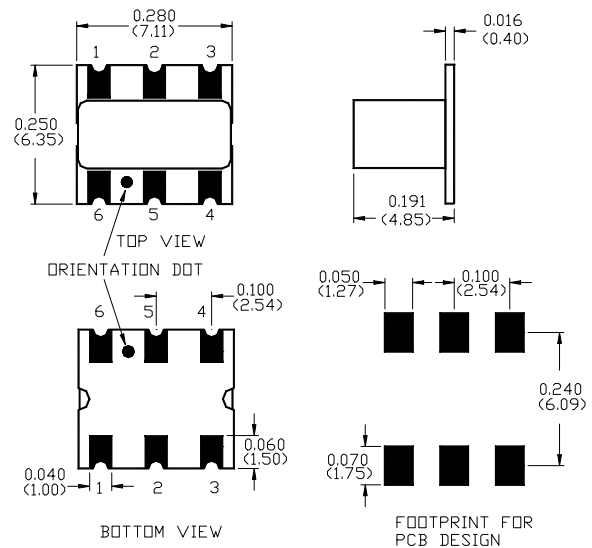
M/A-COM's MACPCT0038 is a high performance 75 Ohm Coupler, in a SM-103 low cost, surface mount package. The MACPCT0038 is specifically designed for extremely low intermod distortion in CATV applications.



Schematic



Case Style: SM-103



Pin Configuration

| Pin No. | Function |
|---------|---------------------------------|
| 1 | Output |
| 2 | Ground |
| 3 | Isolated (external 75 Ohm load) |
| 4 | Coupled |
| 5 | Not Connected |
| 6 | Input |

Ordering Information

| Part Number | Package |
|--------------|----------------|
| MACPCT0038TR | 900 piece reel |

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

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

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

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

Visit www.macomtech.com for additional data sheets and product information.

M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.

E-Series 17.4dB Coupler 5-870MHz

MACPCT0038
V1P

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

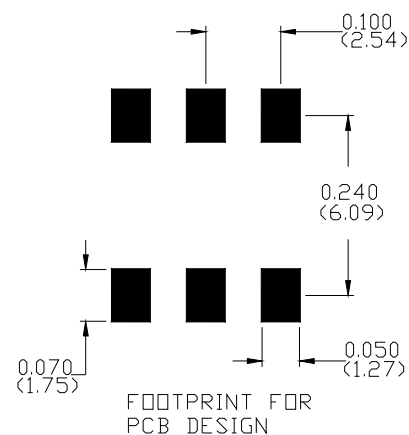
| Parameter | Test Conditions | Units | Min | Typ | Max |
|---------------------------|-----------------|-------|-----|------|-------|
| Coupling (Nominal 17.4dB) | 5 - 870MHz | dB | - | 17.4 | ± 0.4 |
| Main Line Loss | 5 - 40MHz | dB | - | 0.4 | 0.6 |
| Main Line Loss | 40—870MHz | dB | - | 0.5 | 0.8 |
| Isolation | 5 - 40 MHz | dB | 40 | 55 | - |
| Isolation | 40 - 870MHz | dB | 26 | 40 | - |
| Directivity | 5 - 40MHz | dB | 20 | 40 | - |
| Directivity | 40—760MHz | dB | 10 | 25 | - |
| Directivity | 760 - 870 MHz | dB | 9 | 14 | - |
| Input Return Loss | 5 - 40MHz | dB | 20 | 25 | - |
| Input Return Loss | 40 - 870MHz | dB | 21 | 27 | - |
| Output Return Loss | 5 - 40MHz | dB | 20 | 30 | - |
| Output Return Loss | 40 - 870MHz | dB | 23 | 34 | - |
| Coupling Return Loss | 5 - 40 MHz | dB | 20 | 25 | - |
| Coupling Return Loss | 40 - 870MHz | dB | 21 | 26 | - |
| Isolation Return Loss | 5 - 870MHz | dB | 19 | 30 | - |
| | | | | | |
| | | | | | |
| | | | | | |

Absolute Maximum Ratings^{1,2}

| Parameter | Absolute Maximum |
|-----------------------|------------------|
| Max Input Power | 250mW |
| DC current | 30mA |
| Operating Temperature | -40°C to +85°C |
| Storage Temperature | -55°C to +100°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



2

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

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

Visit www.macomtech.com for additional data sheets and product information.

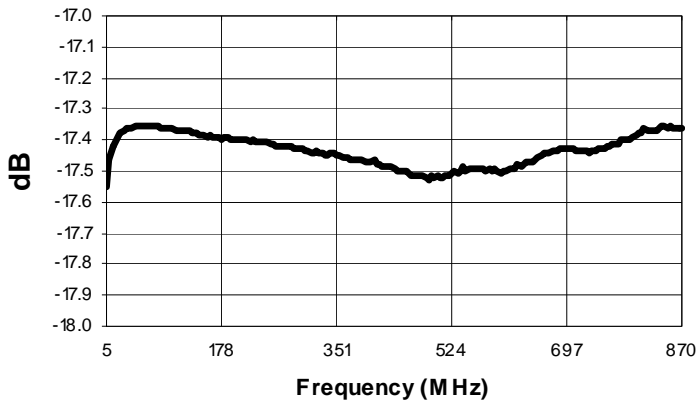
M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.

E-Series 17.4dB Coupler
5-870MHz

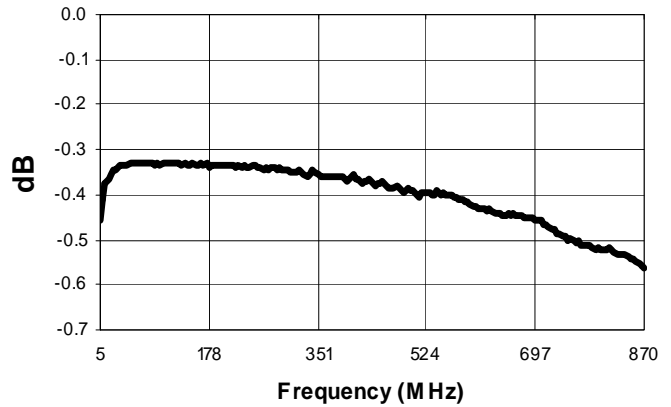
MACPCT0038
V1P

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

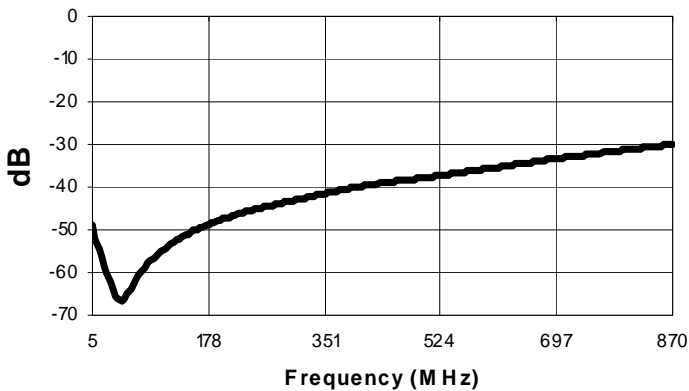
Coupling



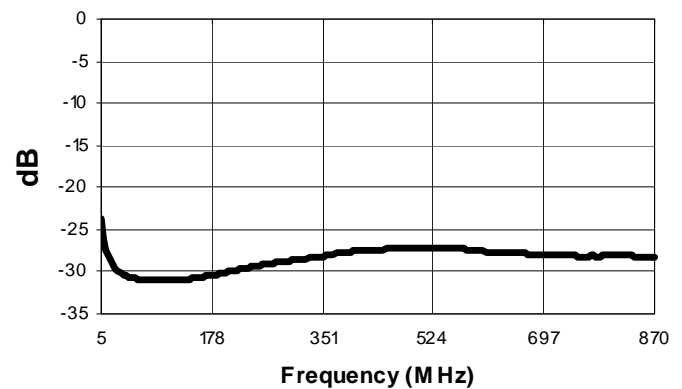
Main Line Loss



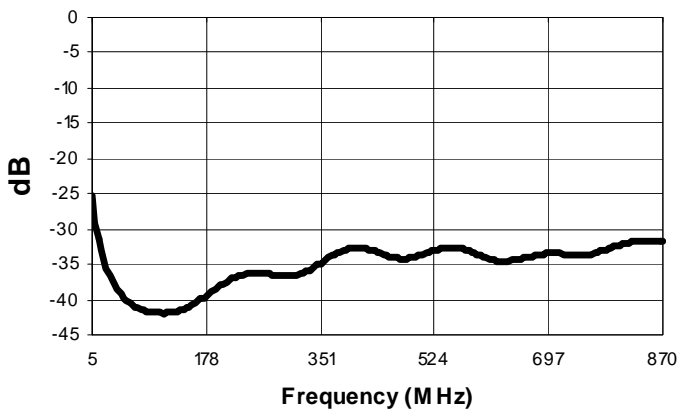
Isolation



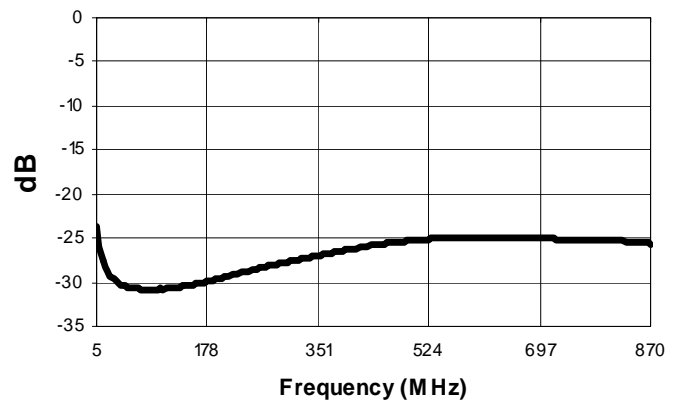
Input Return Loss



Output Return Loss



Coupling Return Loss



ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

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

Visit www.macomtech.com for additional data sheets and product information.

M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.