

50Ω 40 to 400 MHz

## Maximum Ratings

Operating Temperature -55°C to 100°C

Storage Temperature -55°C to 100°C

Permanent damage may occur if any of these limits are exceeded.

## Pin Connections

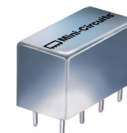
|             |           |
|-------------|-----------|
| INPUT       | 1         |
| OUTPUT      | 2         |
| COUPLED     | 5         |
| GROUND      | 3,4,6,7,8 |
| CASE GROUND | 3,4,6,7,8 |

## Features

- high power, up to 10W power input
- wideband, 40 to 400 MHz
- low mainline loss, 0.2 dB typ.
- excellent directivity, 30 dB typ.
- rugged welded construction, hermetically sealed

## Applications

- power levelling
- military & defense communications
- VSWR measurement

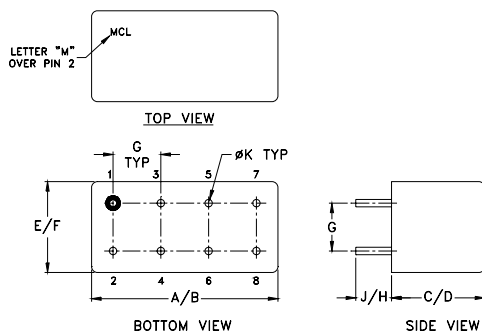


CASE STYLE: A01

## +RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

## Outline Drawing



## Outline Dimensions (inch/mm)

| A     | B     | C    | D     | E    | F     |
|-------|-------|------|-------|------|-------|
| .770  | .800  | .385 | .400  | .370 | .400  |
| 19.56 | 20.32 | 9.78 | 10.16 | 9.40 | 10.16 |
| G     | H     | J    | K     |      | wt    |
| .200  | .20   | .14  | .031  |      | grams |
| 5.08  | 5.08  | 3.56 | 0.79  |      | 5.2   |

## Directional Coupler Electrical Specifications

| FREQ.<br>(MHz) | COUPLING<br>(dB)               |      | MAINLINE LOSS <sup>1</sup><br>(dB) |      |      |      |      |      | DIRECTIVITY<br>(dB) |      |      |      |      |      | VSWR<br>(:1) | POWER<br>INPUT, W |      |
|----------------|--------------------------------|------|------------------------------------|------|------|------|------|------|---------------------|------|------|------|------|------|--------------|-------------------|------|
|                |                                |      | L                                  |      | M    |      | U    |      | L                   |      | M    |      | U    |      |              | L                 | MU   |
|                | f <sub>L</sub> -f <sub>U</sub> | Nom. | Flatness                           | Typ. | Max. | Typ. | Max. | Typ. | Max.                | Typ. | Min. | Typ. | Min. | Typ. |              | Min.              | Typ. |
| 40-400         | 21.5±0.5                       | ±0.6 | 0.1                                | 0.3  | 0.2  | 0.4  | 0.2  | 0.5  | 30                  | 20   | 30   | 20   | 27   | 18   | 1.1          | 10.0              | 10.0 |

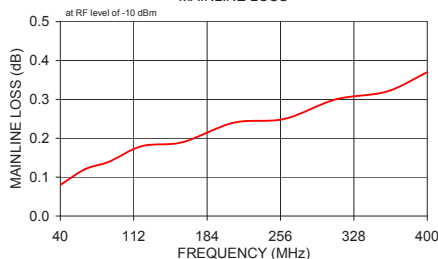
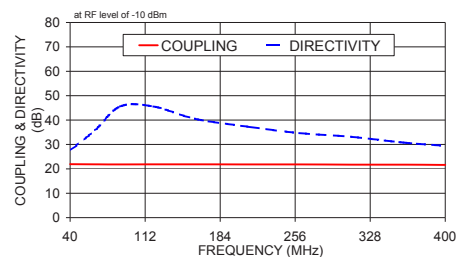
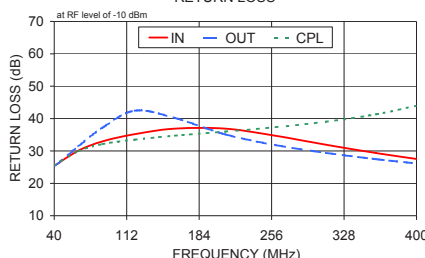
L = 40-100 MHz M = 100-200 MHz U = 200-400 MHz

1. Mainline loss includes theoretical power loss at coupled port.

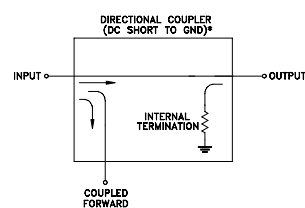
External heat sinking is recommended to reduce case temperature

## Typical Performance Data

| Frequency<br>(MHz) | Mainline Loss<br>(dB)<br>In-Out | Coupling<br>(dB)<br>In-Cpl | Directivity<br>(dB) |       | Return Loss<br>(dB)<br>Out |     | Cpl   |
|--------------------|---------------------------------|----------------------------|---------------------|-------|----------------------------|-----|-------|
|                    |                                 |                            |                     |       | In                         | Out |       |
| 40.00              | 0.08                            | 21.91                      | 27.54               | 25.40 | 25.17                      |     | 25.48 |
| 64.00              | 0.12                            | 21.84                      | 35.86               | 30.09 | 31.45                      |     | 29.93 |
| 88.00              | 0.14                            | 21.81                      | 45.58               | 32.95 | 37.18                      |     | 32.12 |
| 120.00             | 0.18                            | 21.84                      | 45.56               | 35.19 | 42.43                      |     | 33.49 |
| 160.00             | 0.19                            | 21.84                      | 40.49               | 36.89 | 40.19                      |     | 34.73 |
| 210.00             | 0.24                            | 21.83                      | 37.31               | 36.89 | 35.12                      |     | 35.99 |
| 260.00             | 0.25                            | 21.81                      | 34.65               | 34.69 | 31.80                      |     | 37.34 |
| 310.00             | 0.30                            | 21.73                      | 33.12               | 31.93 | 29.39                      |     | 39.03 |
| 360.00             | 0.32                            | 21.72                      | 30.76               | 29.36 | 27.46                      |     | 41.34 |
| 400.00             | 0.37                            | 21.62                      | 29.41               | 27.52 | 26.13                      |     | 43.97 |

PDC20-400HP+  
MAINLINE LOSSPDC20-400HP+  
COUPLING & DIRECTIVITYPDC20-400HP+  
RETURN LOSS

## Electrical Schematic



\* ELECTRICAL SCHEMATIC IS FOR DIRECTIONAL COUPLER WITH INTERNAL TRANSFORMER(S) THAT ROUTES DC FROM RF PORTS TO GROUND.

## Notes

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.

B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.

C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)