

# Coaxial Directional Coupler

75Ω

1 to 250 MHz

ZDC-10-1-75+  
ZDC-10-1-75



CASE STYLE: M22

| Connectors            | Model          | Price       | Qty.  |
|-----------------------|----------------|-------------|-------|
| BNC                   | ZDC-10-1-75(+) | \$44.95 ea. | (1-9) |
| BRACKET (OPTION "B")  |                | \$5.00      | (1+)  |
| BRACKET (OPTION "BR") |                | \$1.50      | (1+)  |

+ RoHS compliant in accordance  
with EU Directive (2002/95/EC)

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

## Maximum Ratings

|                       |                |
|-----------------------|----------------|
| Operating Temperature | -55°C to 100°C |
| Storage Temperature   | -55°C to 100°C |

## Coaxial Connections

|         |   |
|---------|---|
| INPUT   | 3 |
| OUTPUT  | 2 |
| COUPLED | 1 |

## Features

- excellent directivity, 30 dB typ.
- rugged shielded case

## Applications

- VHF/HF
- instrumentation
- communication receivers & transmitters
- amateur radio

## Directional Coupler Electrical Specifications

| FREQ.<br>RANGE<br>(MHz) | COUPLING<br>(dB)               |       | MAINLINE LOSS <sup>1</sup><br>(dB) |      |      |      |      |      | DIRECTIVITY<br>(dB) |      |      |      |      |      | VSWR<br>(:1) | POWER<br>INPUT<br>(W) |      |
|-------------------------|--------------------------------|-------|------------------------------------|------|------|------|------|------|---------------------|------|------|------|------|------|--------------|-----------------------|------|
|                         |                                |       | L                                  |      | M    |      | U    |      | L                   |      | M    |      | U    |      |              |                       |      |
|                         | f <sub>L</sub> -f <sub>U</sub> | Nom.  | Flatness                           | Typ. | Max. | Typ. | Max. | Typ. | Max.                | Typ. | Min. | Typ. | Min. | Typ. | Min.         | Typ.                  | Max. |
| 1-250                   | 10.5±0.5                       | ±0.75 | 1.1                                | 1.5  | 1.1  | 1.5  | 1.1  | 1.5  | 30                  | 20   | 30   | 20   | 30   | 20   | 2.0          | 2.0                   | 4.0  |

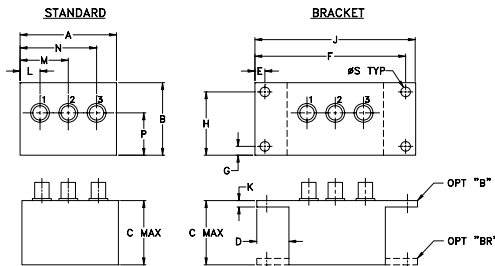
L = low range [f<sub>L</sub> to 10 f<sub>L</sub>] M = mid range [10 f<sub>L</sub> to f<sub>U</sub>/2] U = upper range [f<sub>U</sub>/2 to f<sub>U</sub>]

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

## 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>In | Return Loss<br>(dB)<br>Out | Cpl   |
|--------------------|---------------------------------|----------------------------|---------------------|---------------------------|----------------------------|-------|
| 1.00               | 1.18                            | 10.73                      | 59.03               | 21.38                     | 16.52                      | 16.51 |
| 5.00               | 0.91                            | 10.47                      | 57.90               | 35.71                     | 19.69                      | 19.82 |
| 9.00               | 0.89                            | 10.46                      | 57.24               | 59.04                     | 19.88                      | 19.96 |
| 34.00              | 0.97                            | 10.53                      | 52.00               | 29.42                     | 19.04                      | 18.32 |
| 66.00              | 1.01                            | 10.60                      | 46.85               | 24.14                     | 18.06                      | 16.17 |
| 104.00             | 1.03                            | 10.68                      | 43.98               | 20.51                     | 16.82                      | 13.89 |
| 135.00             | 1.06                            | 10.76                      | 43.05               | 18.43                     | 15.79                      | 12.32 |
| 168.00             | 1.09                            | 10.86                      | 42.67               | 16.71                     | 14.77                      | 10.97 |
| 213.00             | 1.14                            | 11.00                      | 43.85               | 14.92                     | 13.50                      | 9.56  |
| 250.00             | 1.19                            | 11.13                      | 47.13               | 13.77                     | 12.57                      | 8.67  |

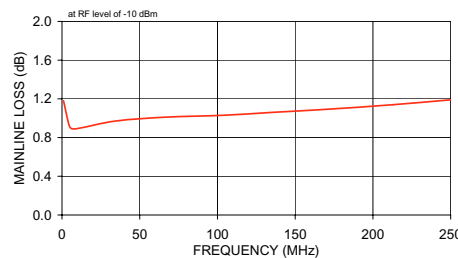
## Outline Drawing



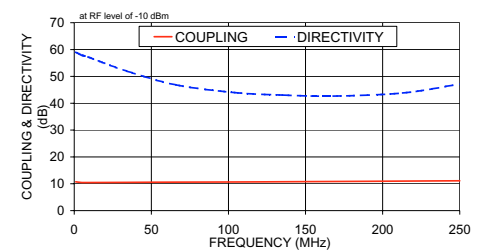
## Outline Dimensions (inch)

| A     | B     | C     | D     | E     | F     | G    | H     |
|-------|-------|-------|-------|-------|-------|------|-------|
| 2.25  | 1.38  | 1.24  | .50   | .150  | 3.100 | .138 | 1.238 |
| 57.15 | 35.05 | 31.50 | 12.70 | 3.81  | 78.74 | 3.51 | 31.45 |
| J     | K     | L     | M     | N     | P     | S    | wt    |
| 3.25  | .10   | .40   | 1.15  | 1.86  | .64   | .150 | grams |
| 82.55 | 2.54  | 10.16 | 29.21 | 47.24 | 16.26 | 3.81 | 74.0  |

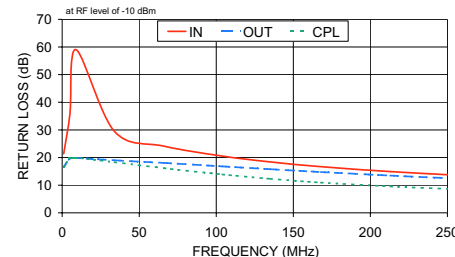
ZDC-10-1-75  
MAINLINE LOSS



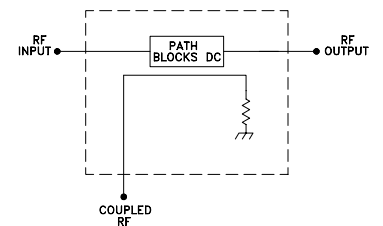
ZDC-10-1-75  
COUPLING & DIRECTIVITY



ZDC-10-1-75  
RETURN LOSS



## electrical schematic



**Mini-Circuits®**  
ISO 9001 ISO 14001 CERTIFIED

ALL NEW  
minicircuits.com

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site



The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: [www.minicircuits.com](http://www.minicircuits.com)

RF/IF MICROWAVE COMPONENTS

REV. A  
M107398  
ZDC-10-1-75  
W2/TD/CP/AM  
070319