

# Coaxial Directional Coupler

50Ω

0.5 to 500 MHz

ZMDC-10-1



CASE STYLE: M21

## 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 insertion loss, 0.65 dB typ.
- excellent directivity, 32 dB typ.
- rugged shielded case

## Applications

- HF/VHF/UHF
- amateur radio
- instrumentation

| Connectors            | Model     | Price   | Qty.  |
|-----------------------|-----------|---------|-------|
| SMA                   | ZMDC-10-1 | \$49.95 | (1-9) |
| BRACKET (OPTION "B")  |           | \$5.00  | (1+)  |
| BRACKET (OPTION "BR") |           | \$2.50  | (1+)  |

## Directional Coupler Electrical Specifications

| FREQ.<br>RANGE<br>(MHz) | COUPLING<br>(dB)               |      | MAINLINE LOSS¹ |      |      |      |      |      | 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. |
| 0.5-500                 | 11.5±0.5                       | ±0.6 | 0.85           | 1.3  | 0.65 | 1.0  | 0.85 | 1.3  | 32                  | 25   | 32   | 25   | 22   | 15   | 1.2          | 1.5                   | 3.0  |

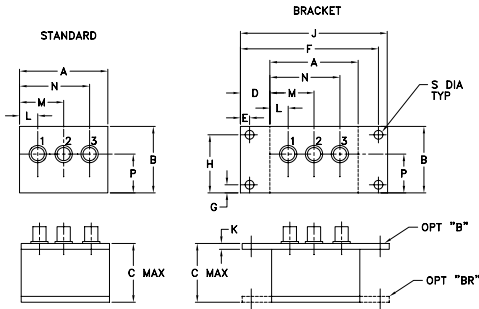
L = low range [ $f_L$  to  $10 f_L$ ] M = mid range [ $10 f_L$  to  $f_U/2$ ] U = upper range [ $f_U/2$  to  $f_U$ ]

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 Out | Cpl   |
|--------------------|---------------------------------|----------------------------|---------------------|-------------------------------|-------|
| 0.50               | 0.73                            | 11.62                      | 75.22               | 63.60 25.33                   | 20.56 |
| 0.90               | 0.69                            | 11.57                      | 75.75               | 64.18 28.71                   | 21.79 |
| 4.00               | 0.58                            | 11.45                      | 74.20               | 62.75 34.21                   | 24.05 |
| 48.00              | 0.60                            | 11.49                      | 60.95               | 49.46 34.66                   | 24.10 |
| 124.00             | 0.63                            | 11.55                      | 52.70               | 41.15 31.03                   | 23.50 |
| 210.00             | 0.67                            | 11.62                      | 47.91               | 36.29 27.67                   | 22.54 |
| 260.00             | 0.70                            | 11.66                      | 45.71               | 34.05 26.27                   | 21.97 |
| 320.00             | 0.73                            | 11.71                      | 42.88               | 31.17 24.90                   | 21.32 |
| 420.00             | 0.81                            | 11.80                      | 38.25               | 26.46 23.14                   | 20.45 |
| 500.00             | 0.88                            | 11.86                      | 34.83               | 22.98 21.97                   | 19.97 |

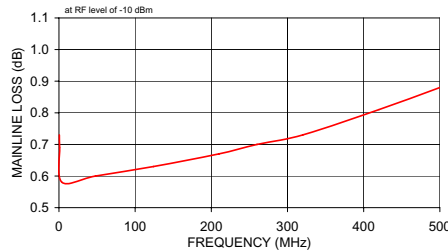
## Outline Drawing



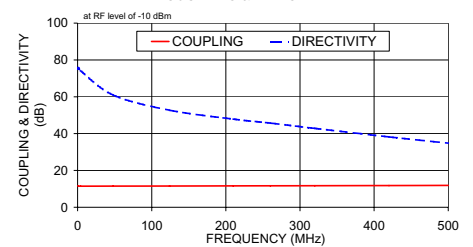
## Outline Dimensions (inch/mm)

| A     | B     | C     | D     | E     | F     | G    | H     |
|-------|-------|-------|-------|-------|-------|------|-------|
| 1.50  | 1.13  | 1.00  | .50   | .155  | 2.345 | .138 | .987  |
| 38.10 | 28.70 | 25.40 | 12.70 | 3.94  | 59.56 | 3.51 | 25.07 |
| J     | K     | L     | M     | N     | P     | S    | wt    |
| 2.50  | .10   | .31   | .75   | 1.19  | .66   | .150 | grams |
| 63.50 | 2.54  | 7.87  | 19.05 | 30.23 | 16.76 | 3.81 | 40.0  |

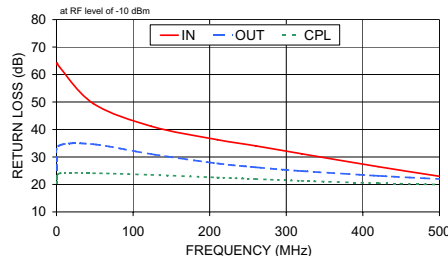
ZMDC-10-1  
MAINLINE LOSS



ZMDC-10-1  
COUPLING & DIRECTIVITY



ZMDC-10-1  
RETURN LOSS



## electrical schematic

