

# Coaxial Directional Coupler

50Ω

10 to 1800 MHz

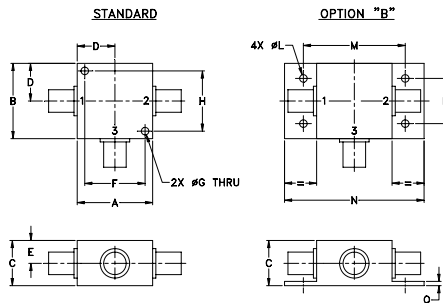
## Maximum Ratings

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

## Coaxial Connections

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

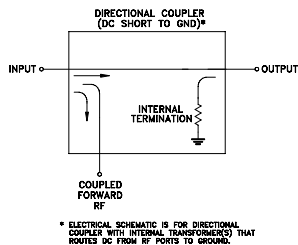
## Outline Drawing



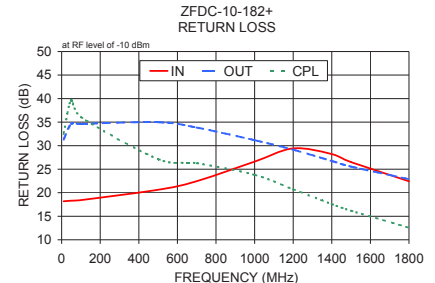
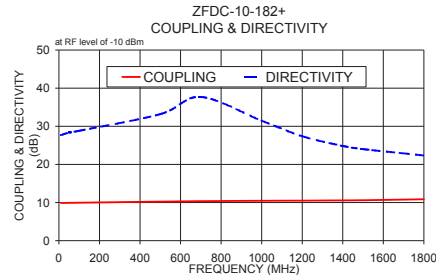
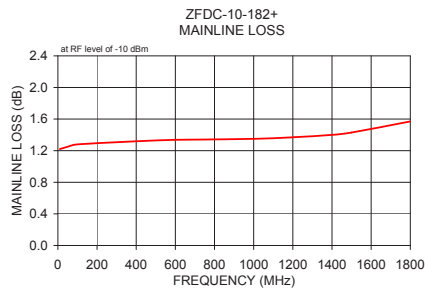
## Outline Dimensions (inch/mm)

| A     | B     | C     | D     | E     | F     | G    | H     |
|-------|-------|-------|-------|-------|-------|------|-------|
| 1.25  | 1.25  | .75   | .63   | .38   | 1.00  | .125 | 1.000 |
| 31.75 | 31.75 | 19.05 | 16.00 | 9.65  | 25.40 | 3.18 | 25.40 |
| J     | K     | L     | M     | N     | P     | Q    | wt    |
| --    | --    | .125  | 1.688 | 2.18  | .75   | .07  | grams |
| --    | --    | 3.18  | 42.88 | 55.37 | 19.05 | 1.78 | 70.0  |

## Electrical Schematic



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



### Notes

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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# ZFDC-10-182+



BNC version shown  
CASE STYLE: K18

| Connectors           | Model          |
|----------------------|----------------|
| BNC                  | ZFDC-10-182+   |
| SMA                  | ZFDC-10-182-S+ |
| N-TYPE               | ZFDC-10-182-N+ |
| BRACKET (OPTION "B") |                |

### +RoHS Compliant

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

## Electrical Specifications at 25°C

| Parameter                                 | Condition (MHz) | Min. | Typ. | Max. | Unit |
|-------------------------------------------|-----------------|------|------|------|------|
| Frequency Range                           |                 | 10   | —    | 1800 | MHz  |
| Mainline Loss (above theoretical 0.46 dB) | 10              | —    | 0.8  | 1.4  | dB   |
|                                           | 700             | —    | 1.0  | 1.7  |      |
|                                           | 1800            | —    | 1.4  | 2.4  |      |
| Coupling                                  | 10-1800         |      | 10.4 |      | dB   |
|                                           | 10              | 9.7  | 9.9  | 10.2 |      |
|                                           | 700             | 9.8  | 10.5 | 11.2 |      |
| Coupling Flatness(±)                      | 10-700          | —    | 0.3  | 0.5  | dB   |
|                                           | 700-1800        | —    | 0.3  | 0.5  |      |
|                                           |                 |      |      |      |      |
| Directivity                               | 10              | 22.0 | 27.0 | —    | dB   |
|                                           | 700             | 22.0 | 31.7 | —    |      |
|                                           | 1800            | 18.0 | 24.1 | —    |      |
| Return Loss (Input)                       | 10              | 15.0 | 18.2 | —    | dB   |
|                                           | 700             | 18.0 | 22.6 | —    |      |
|                                           | 1800            | 15.0 | 20.0 | —    |      |
| Return Loss (Output)                      | 10              | 22.0 | 29.7 | —    | dB   |
|                                           | 700             | 20.0 | 29.1 | —    |      |
|                                           | 1800            | 15.0 | 19.3 | —    |      |
| Return Loss (Coupling)                    | 10              | 22.0 | 30.0 | —    | dB   |
|                                           | 700             | 18.0 | 22.4 | —    |      |
|                                           | 1800            | 10.0 | 12.5 | —    |      |
| Input Power                               | 10-1800         | —    | —    | 0.5  | W    |

## Typical Performance Data

| Frequency (MHz) | Mainline Loss (dB) In-Out | Coupling (dB) In-Cpl | Directivity (dB) | In    | Return Loss (dB) Out | Cpl   |
|-----------------|---------------------------|----------------------|------------------|-------|----------------------|-------|
| 10.00           | 1.22                      | 9.89                 | 27.67            | 18.18 | 31.31                | 32.50 |
| 50.00           | 1.25                      | 9.92                 | 28.35            | 18.31 | 34.64                | 39.67 |
| 100.00          | 1.28                      | 9.96                 | 28.81            | 18.43 | 34.63                | 36.08 |
| 500.00          | 1.33                      | 10.24                | 33.19            | 20.63 | 34.98                | 27.15 |
| 700.00          | 1.34                      | 10.36                | 37.70            | 22.46 | 33.85                | 26.28 |
| 1000.00         | 1.35                      | 10.47                | 31.47            | 26.62 | 31.16                | 23.80 |
| 1200.00         | 1.37                      | 10.51                | 27.39            | 29.41 | 29.15                | 20.72 |
| 1400.00         | 1.40                      | 10.56                | 24.85            | 28.21 | 26.75                | 17.58 |
| 1500.00         | 1.43                      | 10.60                | 24.01            | 26.51 | 25.54                | 16.16 |
| 1800.00         | 1.57                      | 10.86                | 22.35            | 22.44 | 22.89                | 12.56 |

REV. A  
M151107  
ZFDC-10-182+  
ED-13361/1  
WZ/CP/AM  
151007