

# Coaxial Directional Coupler

## ZFDC-10-22

50Ω

1 to 750 MHz



BNC version shown

CASE STYLE: K18

### 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.

### Coaxial Connections

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

### Features

- excellent directivity, 25 dB typ.
- excellent VSWR, 1.25:1 typ.
- rugged shielded case

### Applications

- VHF/UHF
- instrumentation
- communications receivers & transmitters

| Connectors           | Model        | Price   | Qty.  |
|----------------------|--------------|---------|-------|
| BNC                  | ZFDC-10-22   | \$49.95 | (1-9) |
| SMA                  | ZFDC-10-22-S | \$54.95 | (1-9) |
| N-TYPE               | ZFDC-10-22-N | \$54.95 | (1-9) |
| BRACKET (OPTION "B") |              | \$2.50  | (1+)  |

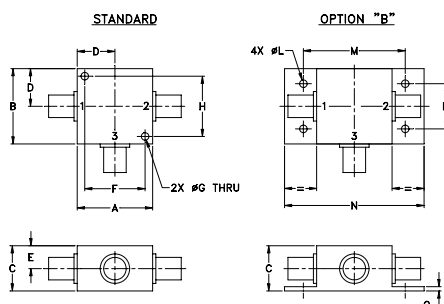
### Directional Coupler Electrical Specifications

| FREQ. RANGE (MHz) | COUPLING (dB) |          | MAINLINE LOSS <sup>1</sup> (dB) |      |      |      |      |      | DIRECTIVITY (dB) |      |      |      |      |      | VSWR (:1) | POWER INPUT (W) |      |
|-------------------|---------------|----------|---------------------------------|------|------|------|------|------|------------------|------|------|------|------|------|-----------|-----------------|------|
|                   | Nom.          | Flatness | L                               |      | M    |      | U    |      | L                |      | M    |      | U    |      |           | Typ.            | L    |
| $f_L$ - $f_U$     |               |          | Typ.                            | Max. | Typ. | Max. | Typ. | Max. | Typ.             | Min. | Typ. | Min. | Typ. | Min. | Typ.      | Max.            | Max. |
| 1-750             | 11±0.5        | ±0.5     | 1.1                             | 1.9  | 1.2  | 1.7  | 1.4  | 1.9  | 35               | 30   | 25   | 20   | 25   | 20   | 1.25      | 1.0             | 2.0  |

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.

### 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 |

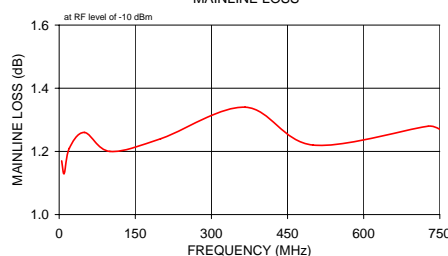
  

| J  | K  | L    | M     | N     | P     | Q    | wt    |
|----|----|------|-------|-------|-------|------|-------|
| -- | -- | .125 | 1.688 | 2.18  | .75   | .07  | grams |
| -- | -- | 3.18 | 42.88 | 55.37 | 19.05 | 1.78 | 70.0  |

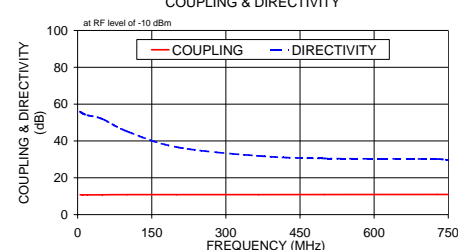
### Typical Performance Data

| Frequency (MHz) | Mainline Loss (dB) In-Out | Coupling (dB) In-Cpl | Directivity (dB) |       | Return Loss (dB) |       |
|-----------------|---------------------------|----------------------|------------------|-------|------------------|-------|
|                 |                           |                      | In               | Out   | In               | Out   |
| 5.00            | 1.17                      | 10.76                | 56.00            | 26.72 | 17.45            | 17.54 |
| 10.00           | 1.13                      | 10.72                | 55.00            | 31.54 | 18.12            | 18.32 |
| 20.00           | 1.21                      | 10.74                | 54.00            | 34.28 | 18.19            | 18.42 |
| 50.00           | 1.26                      | 10.79                | 52.00            | 30.97 | 17.69            | 17.87 |
| 100.00          | 1.20                      | 10.85                | 45.27            | 29.52 | 17.58            | 17.66 |
| 200.00          | 1.24                      | 10.84                | 36.71            | 29.28 | 17.84            | 17.74 |
| 366.22          | 1.34                      | 10.87                | 31.90            | 29.98 | 19.03            | 18.34 |
| 500.00          | 1.22                      | 10.90                | 30.51            | 29.97 | 20.33            | 18.48 |
| 727.43          | 1.28                      | 10.96                | 30.19            | 27.90 | 23.20            | 16.88 |
| 750.00          | 1.27                      | 10.94                | 29.66            | 27.62 | 23.46            | 16.58 |

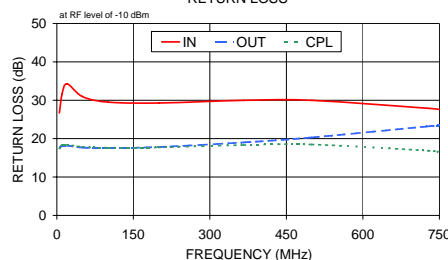
ZFDC-10-22 MAINLINE LOSS



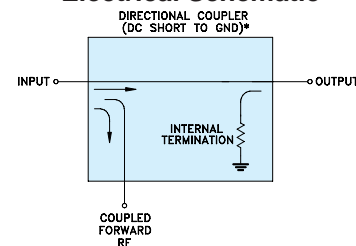
ZFDC-10-22 COUPLING & DIRECTIVITY



ZFDC-10-22 RETURN LOSS



### Electrical Schematic



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

For detailed performance specs & shipping online see web site

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