

# DC Pass Bi-Directional Coupler

50Ω Up to 100W 700 to 1800 MHz

ZABDC20-182H+



CASE STYLE: DD477-1

Connectors Model  
SMA ZABDC20-182H-S+

**+RoHS Compliant**

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

## Maximum Ratings

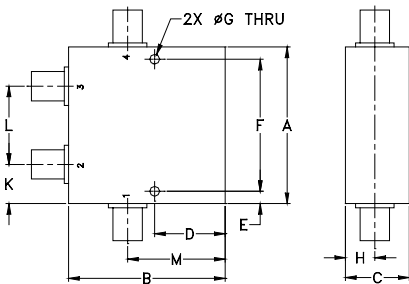
|                       |                |
|-----------------------|----------------|
| Operating Temperature | -55°C to 100°C |
| Storage Temperature   | -55°C to 100°C |
| DC Current            | 2.0 A          |

\* Case temperature is defined as temperature on ground leads.  
Permanent damage may occur if any of these limits are exceeded.

## Coaxial Connections

|                   |   |
|-------------------|---|
| INPUT             | 1 |
| OUTPUT            | 4 |
| COUPLED (forward) | 2 |
| COUPLED (reverse) | 3 |

## Outline Drawing



## Outline Dimensions (inch/mm)

| A     | B     | C     | D     | E    | F     | G    |
|-------|-------|-------|-------|------|-------|------|
| 2.00  | 2.00  | .88   | .90   | .156 | 1.688 | .125 |
| 50.80 | 50.80 | 22.35 | 22.86 | 3.96 | 42.88 | 3.18 |

| H    | J   | K     | L     | M     | wt    |
|------|-----|-------|-------|-------|-------|
| .38  | --- | .50   | 1.00  | 1.25  | grams |
| 9.65 | --- | 12.70 | 25.40 | 31.75 | 225   |

## Features

- excellent mainline loss, 0.2 dB typ.
- excellent directivity, 25 dB typ.
- high power, up to 100W
- rugged shielded case
- DC current through input to output 2.0A Max. at 50 watt RF input power

## Applications

- PCS/DCS/UMTS
- power leveling & monitoring
- VSWR measurement

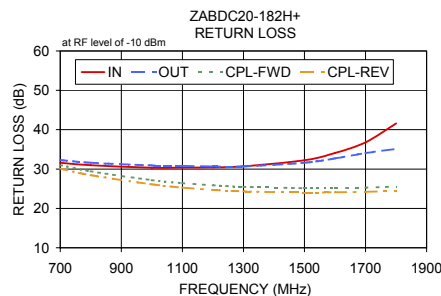
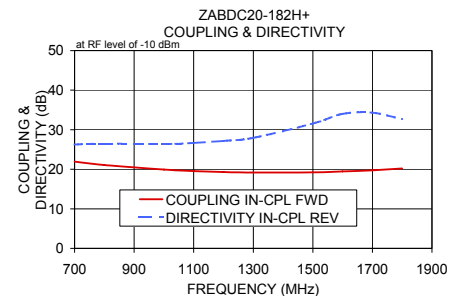
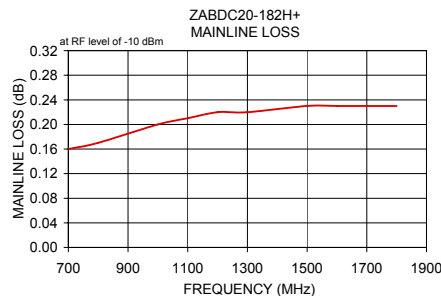
## Bi-Directional Coupler Electrical Specifications

| FREQ. (MHz)   | COUPLING (dB) |          | MAINLINE LOSS <sup>1</sup> (dB) |      | DIRECTIVITY (dB) |      | VSWR (:1) | POWER INPUT (W) |
|---------------|---------------|----------|---------------------------------|------|------------------|------|-----------|-----------------|
| $f_L$ - $f_U$ | Nom.          | Flatness | Typ.                            | Max. | Typ.             | Min. | Typ.      | Max.            |
| 700-1800      |               |          | 0.20                            | 0.35 | 25               | 19   | 1.08      | 50              |
| 800-1000      | 20.5±1.0      | ±0.75    | 0.20                            | 0.30 | 23               | 20   | 1.08      | 100             |
| 1000-1600     | 19.5±0.8      | ±0.6     | 0.25                            | 0.35 | 27               | 20   | 1.08      | 50              |
| 1600-1800     | 20.0±1.0      | ±0.6     | 0.25                            | 0.35 | 25               | 19   | 1.08      | 50              |

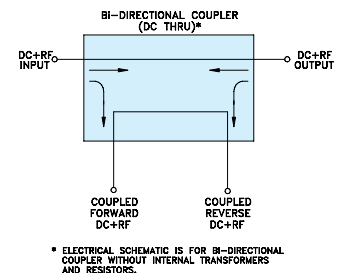
1. Mainline loss includes theoretical power loss at coupled port.

## Typical Performance Data

| Frequency<br>(MHz) | Mainline Loss<br>(dB) | Coupling<br>(dB) |             | Directivity<br>(dB) |            | Return Loss<br>(dB) |       |         |         |
|--------------------|-----------------------|------------------|-------------|---------------------|------------|---------------------|-------|---------|---------|
|                    | In-Out                | In-Cpl Fwd       | Out-Cpl Rev | Out-Cpl Fwd         | In-Cpl Rev | In                  | Out   | Cpl Fwd | Cpl Rev |
| 700.00             | 0.16                  | 21.92            | 21.94       | 26.35               | 26.27      | 31.61               | 32.26 | 30.98   | 30.09   |
| 800.00             | 0.17                  | 21.08            | 21.10       | 26.19               | 26.48      | 30.98               | 31.61 | 29.43   | 28.43   |
| 1000.00            | 0.20                  | 19.91            | 19.93       | 25.90               | 26.39      | 30.35               | 30.95 | 27.18   | 26.13   |
| 1100.00            | 0.21                  | 19.55            | 19.57       | 25.96               | 26.67      | 30.39               | 30.81 | 26.42   | 25.28   |
| 1200.00            | 0.22                  | 19.30            | 19.32       | 26.55               | 27.18      | 30.40               | 30.67 | 25.87   | 24.71   |
| 1300.00            | 0.22                  | 19.17            | 19.19       | 27.47               | 27.96      | 30.69               | 30.65 | 25.48   | 24.35   |
| 1500.00            | 0.23                  | 19.24            | 19.25       | 29.96               | 31.56      | 32.22               | 31.59 | 25.11   | 24.02   |
| 1600.00            | 0.23                  | 19.44            | 19.46       | 31.28               | 34.00      | 34.08               | 32.70 | 25.11   | 24.09   |
| 1700.00            | 0.23                  | 19.75            | 19.77       | 30.63               | 34.30      | 36.77               | 34.05 | 25.28   | 24.21   |
| 1800.00            | 0.23                  | 20.20            | 20.22       | 29.13               | 32.66      | 41.59               | 35.13 | 25.53   | 24.47   |



## Electrical Schematic



\* ELECTRICAL SCHEMATIC IS FOR BI-DIRECTIONAL COUPLER WITHOUT INTERNAL TRANSFORMERS AND RESISTORS.

## Notes

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