

# Engineering Development Model

## DC PASS

## Directional Coupler

## ZX30-ED14258/1

### Important Note

This model has been designed, built and tested in our engineering department. Performance data represents model capability. At present it is a non-catalog model. On request, we can supply a final specification sheet, part number and price/delivery information.

Please click "Back", and then click "Contact Us" for Applications support.



CASE STYLE : GW1052

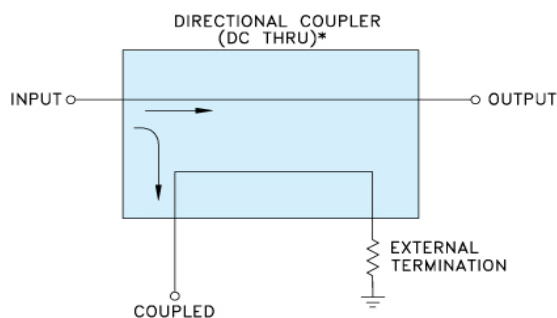
| ELECTRICAL SPECIFICATIONS 50Ω @ +25°C |               |      |          |      |       |
|---------------------------------------|---------------|------|----------|------|-------|
| Parameter                             |               | Min. | Typ.     | Max. | Units |
| Frequency                             |               | 8300 |          | 9700 | MHz   |
| Coupling                              | Nominal       |      | 14.4±1.0 |      | dB    |
|                                       | Flatness      |      | ±0.5     |      | dB    |
| Mainline Loss*                        | 8300-9700 MHz |      | 0.80     |      | dB    |
| Directivity                           | 8300-9700 MHz |      | 7        |      | dB    |
| VSWR                                  | 8300-9700 MHz |      | 1.40     |      | (:1)  |
| RF Power Input                        | 8300-9700 MHz |      |          | 20   | W     |

Note: \* Mainline loss includes theoretical coupled power loss of 0.18 dB at 14 dB coupling.

| MAXIMUM RATINGS       |                 |
|-----------------------|-----------------|
| Operating Temperature | -40°C to +85°C  |
| Storage Temperature   | -55°C to +100°C |
| DC Current            | 0.5A            |

| COAXIAL CONNECTIONS  |   |
|----------------------|---|
| INPUT                | 1 |
| OUTPUT               | 4 |
| COUPLED FORWARD      | 2 |
| 50-OHM TERM EXTERNAL | 3 |

### Electrical Schematic



\* ELECTRICAL SCHEMATIC FOR DIRECTIONAL COUPLERS REQUIRING EXTERNAL TERMINATION THAT IS DESIGNED WITHOUT INTERNAL TRANSFORMERS.



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IF/RF MICROWAVE COMPONENTS



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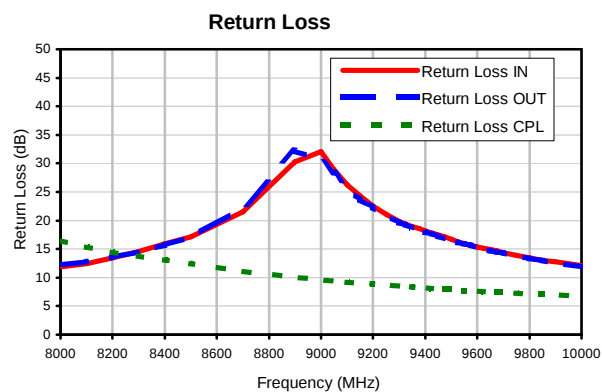
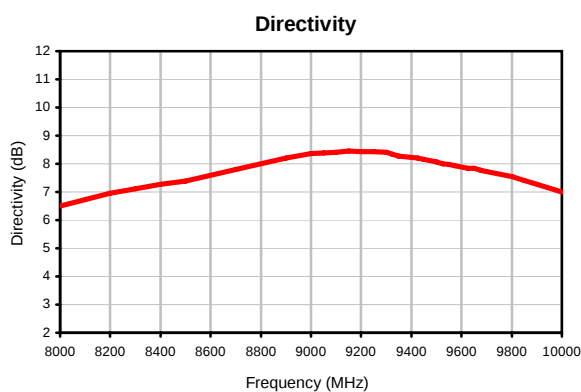
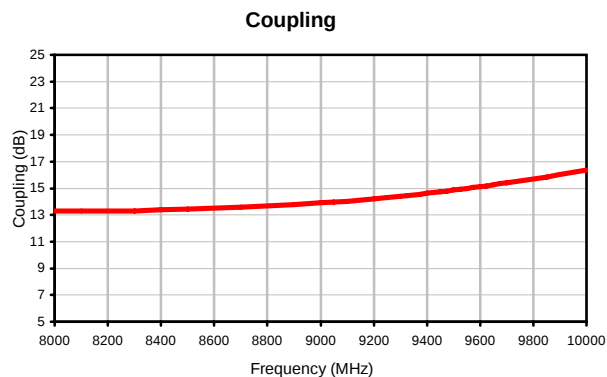
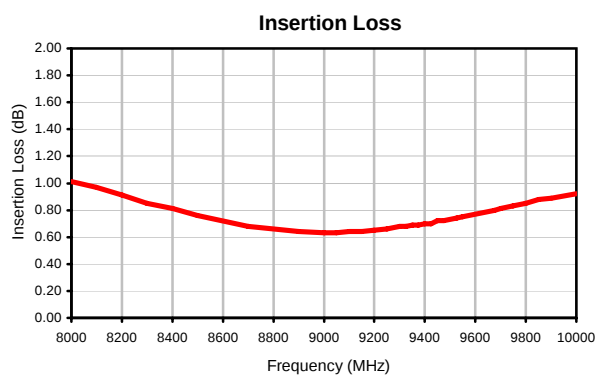
### Typical Performance Data

| FREQUENCY | INSERTION<br>LOSS | COUPLING | DIRECTIVITY | RETURN LOSS |       |       |
|-----------|-------------------|----------|-------------|-------------|-------|-------|
|           |                   |          |             | (dB)        |       |       |
| (MHz)     | (dB)              | (dB)     | (dB)        | IN          | OUT   | CPL   |
| 8000.0    | 1.01              | 13.29    | 6.50        | 11.86       | 12.19 | 16.46 |
| 8100.0    | 0.97              | 13.28    | 6.73        | 12.50       | 12.80 | 15.33 |
| 8200.0    | 0.91              | 13.29    | 6.96        | 13.45       | 13.61 | 14.45 |
| 8300.0    | 0.85              | 13.32    | 7.12        | 14.56       | 14.49 | 13.77 |
| 8400.0    | 0.81              | 13.37    | 7.27        | 15.87       | 15.64 | 13.10 |
| 8500.0    | 0.76              | 13.42    | 7.38        | 17.19       | 17.20 | 12.40 |
| 8700.0    | 0.68              | 13.59    | 7.79        | 21.57       | 22.26 | 11.13 |
| 8900.0    | 0.64              | 13.79    | 8.21        | 30.32       | 32.22 | 10.12 |
| 9000.0    | 0.63              | 13.90    | 8.37        | 32.10       | 30.58 | 9.68  |
| 9050.0    | 0.63              | 13.97    | 8.39        | 28.90       | 28.33 | 9.43  |
| 9100.0    | 0.64              | 14.04    | 8.42        | 26.23       | 25.44 | 9.21  |
| 9150.0    | 0.64              | 14.12    | 8.45        | 24.37       | 23.66 | 9.03  |
| 9200.0    | 0.65              | 14.20    | 8.43        | 22.54       | 22.26 | 8.85  |
| 9250.0    | 0.66              | 14.29    | 8.43        | 21.07       | 20.76 | 8.70  |
| 9300.0    | 0.68              | 14.39    | 8.40        | 19.84       | 19.66 | 8.53  |
| 9325.0    | 0.68              | 14.44    | 8.34        | 19.39       | 19.26 | 8.45  |
| 9350.0    | 0.69              | 14.50    | 8.28        | 19.00       | 18.75 | 8.36  |
| 9375.0    | 0.69              | 14.56    | 8.25        | 18.58       | 18.28 | 8.28  |
| 9400.0    | 0.70              | 14.62    | 8.23        | 18.17       | 17.90 | 8.20  |
| 9425.0    | 0.70              | 14.68    | 8.20        | 17.83       | 17.66 | 8.12  |
| 9450.0    | 0.72              | 14.74    | 8.15        | 17.48       | 17.32 | 8.05  |
| 9475.0    | 0.72              | 14.80    | 8.11        | 17.10       | 16.83 | 7.98  |
| 9500.0    | 0.73              | 14.86    | 8.06        | 16.68       | 16.43 | 7.92  |
| 9525.0    | 0.74              | 14.92    | 8.01        | 16.31       | 16.17 | 7.85  |
| 9550.0    | 0.75              | 14.99    | 7.98        | 15.96       | 15.96 | 7.78  |
| 9575.0    | 0.76              | 15.06    | 7.94        | 15.64       | 15.66 | 7.70  |
| 9600.0    | 0.77              | 15.12    | 7.88        | 15.37       | 15.28 | 7.61  |
| 9625.0    | 0.78              | 15.19    | 7.85        | 15.13       | 14.91 | 7.53  |
| 9650.0    | 0.79              | 15.26    | 7.83        | 14.90       | 14.64 | 7.47  |
| 9675.0    | 0.80              | 15.34    | 7.77        | 14.64       | 14.50 | 7.41  |
| 9700.0    | 0.81              | 15.41    | 7.73        | 14.32       | 14.31 | 7.35  |
| 9750.0    | 0.83              | 15.55    | 7.63        | 13.88       | 13.73 | 7.25  |
| 9800.0    | 0.85              | 15.70    | 7.55        | 13.50       | 13.38 | 7.12  |
| 9850.0    | 0.88              | 15.85    | 7.41        | 13.05       | 12.96 | 7.01  |
| 9900.0    | 0.89              | 16.01    | 7.28        | 12.77       | 12.53 | 6.92  |
| 10000.0   | 0.92              | 16.37    | 6.99        | 12.15       | 11.90 | 6.75  |

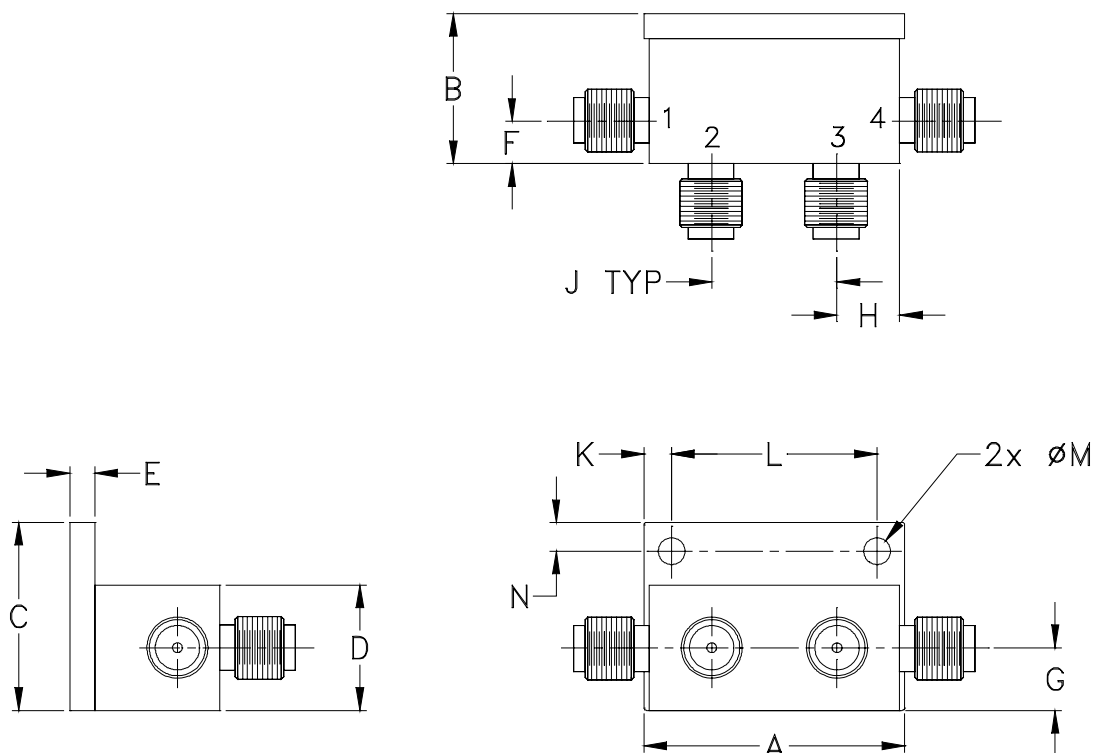
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## Typical Performance Curves



### Outline Dimensions



| CASE#  | A               | B              | C              | D              | E             | F             | G             | H             | J              | K             | L               | M              | N             | WT. GRAM |
|--------|-----------------|----------------|----------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|-----------------|----------------|---------------|----------|
| GW1052 | 1.04<br>(26.42) | .60<br>(15.24) | .75<br>(19.05) | .50<br>(12.70) | .10<br>(2.54) | .17<br>(4.32) | .25<br>(6.35) | .25<br>(6.35) | .50<br>(12.70) | .11<br>(2.79) | .820<br>(20.83) | .106<br>(2.69) | .12<br>(3.05) | 21.0     |

Dimensions are in inches (mm). Tolerances: 2Pl.  $\pm .03$ ; 3Pl.  $\pm .015$ .

Tolerance on hole size and interaxes dimensions to be  $\pm .005$ .

#### Notes:

1. Case material: Brass.
2. Case finish: Nickel plate.



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| Specification              | Test/Inspection Condition                                                              | Reference/Spec                       |
|----------------------------|----------------------------------------------------------------------------------------|--------------------------------------|
| Operating Temperature      | -40° to 85°C                                                                           | Individual Model Data Sheet          |
| Storage Temperature        | -55° to 100° C<br>Ambient Environment                                                  | Individual Model Data Sheet          |
| Barometric Pressure        | 100,000 Feet                                                                           | MIL-STD-202, Method 105, Condition D |
| Humidity                   | 90% RH, 65°C<br>Units may require bake-out after humidity to restore full performance. | MIL-STD-202, Method 103              |
| Thermal Shock              | -65° to 125°C, 5 cycles                                                                | MIL-STD-202, Method 107, Condition B |
| Vibration (High Frequency) | 20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)    | MIL-STD-202, Method 204, Condition D |
| Mechanical Shock           | 100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)                          | MIL-STD-202, Method 213, Condition I |