

# SMA Connectorized Power Splitter/Combiner

2 Way-90° 50Ω 1350 to 2450 MHz

**ZX10Q-2-25-S+  
ZX10Q-2-25-S**



Generic photo used for illustration purposes only

CASE STYLE: GW1052

| Connectors | Model           |
|------------|-----------------|
| SMA        | ZX10Q-2-25-S(+) |

**+RoHS Compliant**

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

## Maximum Ratings

|                             |                |
|-----------------------------|----------------|
| Operating Temperature       | -40°C to 85°C  |
| Storage Temperature         | -55°C to 100°C |
| Power Input (as a splitter) | 20W* max.      |

\* Derate linearly to 7W at 100°C ambient.  
Permanent damage may occur if any of these limits are exceeded.

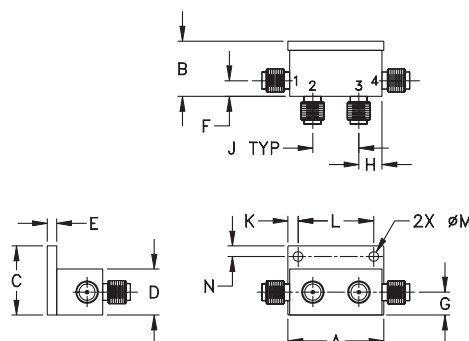
## Coaxial Connections

|                        |   |
|------------------------|---|
| INPUT PORT             | 1 |
| PORT 1 (+90°)          | 2 |
| PORT 2 (0°)            | 3 |
| 50 OHM TERM EXTERNAL** | 4 |



**\*\* Recommended external termination**  
Mini-Circuits Part. No. ANNE-50L

## Outline Drawing



## Outline Dimensions (inch mm)

| A     | B     | C     | D     | E    | F    | G     |
|-------|-------|-------|-------|------|------|-------|
| 1.04  | .60   | .75   | .50   | .10  | .17  | .25   |
| 26.42 | 15.24 | 19.05 | 12.70 | 2.54 | 4.32 | 6.35  |
| H     | J     | K     | L     | M    | N    | wt.   |
| .25   | .50   | .11   | .820  | .106 | .12  | grams |
| 6.35  | 12.70 | 2.79  | 20.83 | 2.69 | 3.05 | 21.0  |

## Features

- low insertion loss, 0.4 dB typ.
- excellent amplitude unbalance
- very good phase unbalance
- small size
- low cost
- protected by U.S Patent 6,790,049

## Applications

- GPS
- PCS/DCS
- UMTS
- balanced amplifiers
- modulators

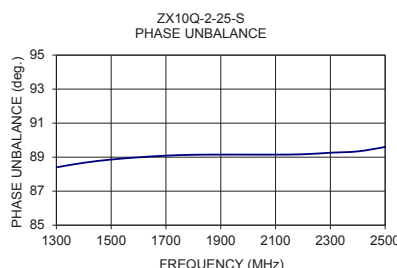
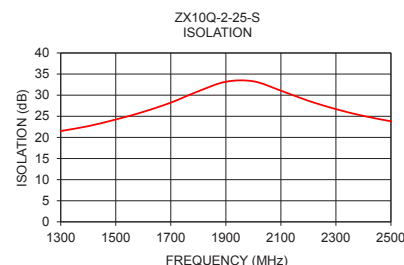
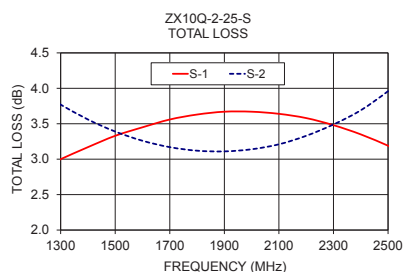
## Electrical Specifications (T<sub>AMB</sub> = 25°C)

| FREQ.<br>RANGE<br>(MHz) | ISOLATION<br>(dB) |      | INSERTION LOSS (dB)<br>Avg. of Coupled Outputs<br>ABOVE 3 dB |      | PHASE<br>UNBALANCE<br>(Degrees) |      | AMPLITUDE<br>UNBALANCE<br>(dB) |      |
|-------------------------|-------------------|------|--------------------------------------------------------------|------|---------------------------------|------|--------------------------------|------|
|                         | Typ.              | Min. | Typ.                                                         | Max. | Typ.                            | Max. | Typ.                           | Max. |
| <b>1350-2450</b>        |                   |      |                                                              |      |                                 |      |                                |      |
| 1350-1950               | 25                | 18   | 0.4                                                          | 0.7  | 1.0                             | 5.0  | 0.5                            | 1.1  |
| 1950-2200               | 25                | 19   | 0.4                                                          | 0.7  | 1.0                             | 4.0  | 0.5                            | 1.0  |
| 2200-2450               | 25                | 17   | 0.6                                                          | 0.9  | 1.0                             | 4.0  | 0.5                            | 1.5  |

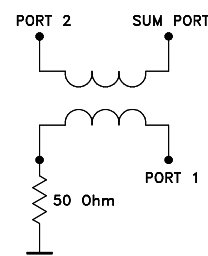
## Typical Performance Data

| Frequency<br>(MHz) | Total Loss <sup>1</sup><br>(dB) |      | Amplitude<br>Unbalance<br>(dB) | Isolation<br>(dB) | Phase<br>Unbalance<br>(deg.) | VSWR<br>S | VSWR<br>1 | VSWR<br>2 |
|--------------------|---------------------------------|------|--------------------------------|-------------------|------------------------------|-----------|-----------|-----------|
|                    | S-1                             | S-2  |                                |                   |                              |           |           |           |
| 1275.00            | 2.95                            | 3.83 | 0.88                           | 21.24             | 88.32                        | 1.19      | 1.20      | 1.18      |
| 1300.00            | 3.00                            | 3.77 | 0.77                           | 21.52             | 88.40                        | 1.18      | 1.19      | 1.17      |
| 1400.00            | 3.17                            | 3.56 | 0.38                           | 22.67             | 88.67                        | 1.15      | 1.16      | 1.14      |
| 1500.00            | 3.33                            | 3.39 | 0.06                           | 24.25             | 88.86                        | 1.13      | 1.13      | 1.11      |
| 1600.00            | 3.45                            | 3.26 | 0.20                           | 26.05             | 88.99                        | 1.11      | 1.10      | 1.09      |
| 1700.00            | 3.56                            | 3.17 | 0.38                           | 28.25             | 89.09                        | 1.09      | 1.07      | 1.07      |
| 1800.00            | 3.63                            | 3.12 | 0.50                           | 30.93             | 89.14                        | 1.08      | 1.05      | 1.05      |
| 1900.00            | 3.67                            | 3.11 | 0.56                           | 33.19             | 89.15                        | 1.08      | 1.04      | 1.06      |
| 2000.00            | 3.67                            | 3.14 | 0.53                           | 33.29             | 89.15                        | 1.08      | 1.04      | 1.07      |
| 2100.00            | 3.64                            | 3.21 | 0.43                           | 31.07             | 89.15                        | 1.09      | 1.05      | 1.08      |
| 2200.00            | 3.58                            | 3.33 | 0.25                           | 28.67             | 89.17                        | 1.11      | 1.08      | 1.10      |
| 2300.00            | 3.48                            | 3.49 | 0.00                           | 26.70             | 89.26                        | 1.13      | 1.11      | 1.12      |
| 2400.00            | 3.35                            | 3.69 | 0.35                           | 25.09             | 89.34                        | 1.16      | 1.14      | 1.16      |
| 2500.00            | 3.19                            | 3.96 | 0.78                           | 23.82             | 89.60                        | 1.19      | 1.17      | 1.19      |
| 2550.00            | 3.10                            | 4.13 | 1.03                           | 23.23             | 89.77                        | 1.21      | 1.19      | 1.21      |

1. Total Loss = Insertion Loss + 3dB splitter loss.



## electrical schematic



## 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.
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# 2 Way-90° Power Splitter/Combiner

**ZX10Q-2-25**

## Typical Performance Data

| FREQ.<br>(MHz) | TOTAL LOSS <sup>1</sup><br>(dB) |      | AMP.<br>UNBAL.<br>(dB) | ISOLATION<br>(dB)<br>1-2 | PHASE<br>UNBAL.<br>(deg.) | FREQ.<br>(MHz) | VSWR<br>(:1) |      |      |
|----------------|---------------------------------|------|------------------------|--------------------------|---------------------------|----------------|--------------|------|------|
|                | S-1                             | S-2  |                        |                          |                           |                | S            | 1    | 2    |
| 1275.0         | 2.95                            | 3.83 | 0.88                   | 21.24                    | 88.32                     | 1275.0         | 1.19         | 1.20 | 1.18 |
| 1300.0         | 3.00                            | 3.77 | 0.77                   | 21.52                    | 88.40                     | 1300.0         | 1.18         | 1.19 | 1.17 |
| 1400.0         | 3.17                            | 3.56 | 0.38                   | 22.67                    | 88.67                     | 1400.0         | 1.15         | 1.16 | 1.14 |
| 1500.0         | 3.33                            | 3.39 | 0.06                   | 24.25                    | 88.86                     | 1500.0         | 1.13         | 1.13 | 1.11 |
| 1600.0         | 3.45                            | 3.26 | 0.20                   | 26.05                    | 88.99                     | 1600.0         | 1.11         | 1.10 | 1.09 |
| 1700.0         | 3.56                            | 3.17 | 0.38                   | 28.25                    | 89.09                     | 1700.0         | 1.09         | 1.07 | 1.07 |
| 1800.0         | 3.63                            | 3.12 | 0.50                   | 30.93                    | 89.14                     | 1800.0         | 1.08         | 1.05 | 1.05 |
| 1900.0         | 3.67                            | 3.11 | 0.56                   | 33.19                    | 89.15                     | 1900.0         | 1.08         | 1.04 | 1.06 |
| 2000.0         | 3.67                            | 3.14 | 0.53                   | 33.29                    | 89.15                     | 2000.0         | 1.08         | 1.04 | 1.07 |
| 2100.0         | 3.64                            | 3.21 | 0.43                   | 31.07                    | 89.15                     | 2100.0         | 1.09         | 1.05 | 1.08 |
| 2200.0         | 3.58                            | 3.33 | 0.25                   | 28.67                    | 89.17                     | 2200.0         | 1.11         | 1.08 | 1.10 |
| 2300.0         | 3.48                            | 3.49 | 0.00                   | 26.70                    | 89.26                     | 2300.0         | 1.13         | 1.11 | 1.12 |
| 2400.0         | 3.35                            | 3.69 | 0.35                   | 25.09                    | 89.34                     | 2400.0         | 1.16         | 1.14 | 1.16 |
| 2500.0         | 3.19                            | 3.96 | 0.78                   | 23.82                    | 89.60                     | 2500.0         | 1.19         | 1.17 | 1.19 |
| 2550.0         | 3.10                            | 4.13 | 1.03                   | 23.23                    | 89.77                     | 2550.0         | 1.21         | 1.19 | 1.21 |

<sup>1</sup> Total Loss = Insertion Loss + 3dB Splitter Loss

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ZX10Q-2-25  
100721  
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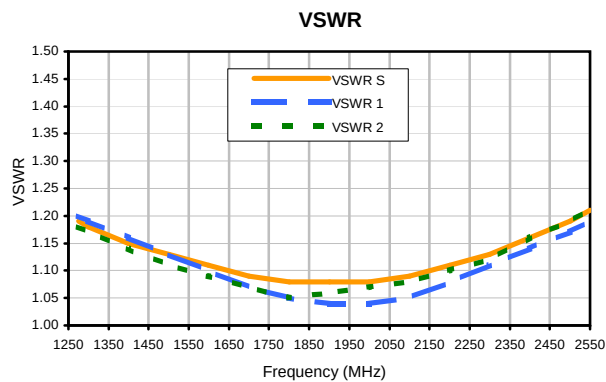
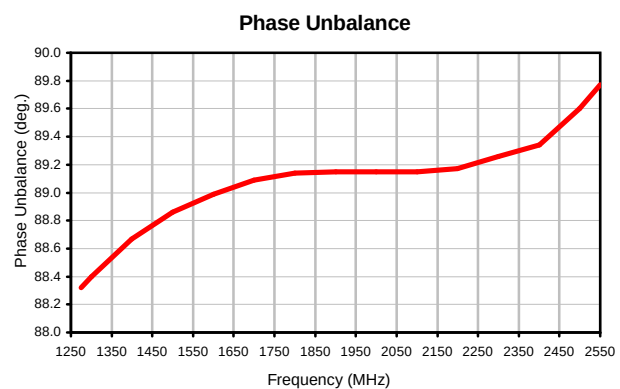
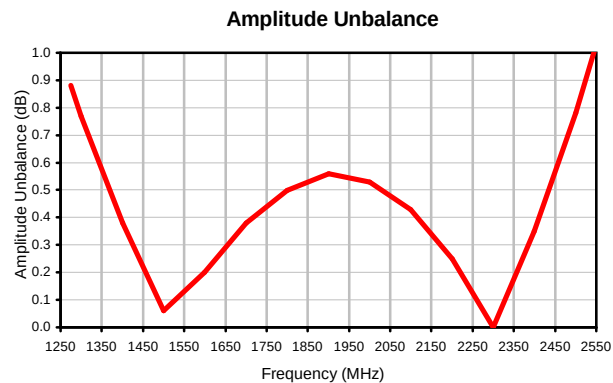
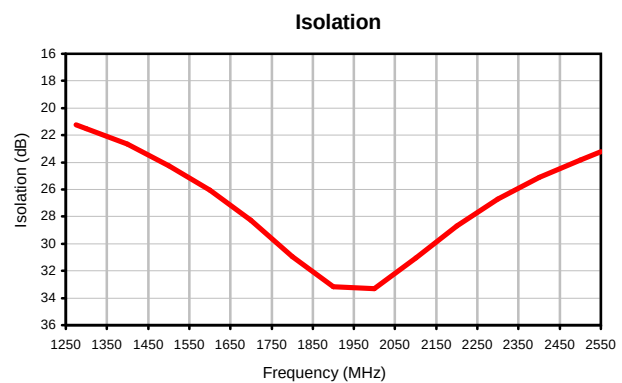
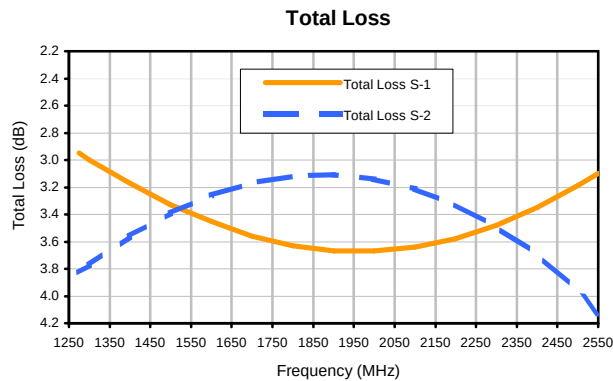
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# 2 Way-90° Power Splitter/Combiner

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## Typical Performance Curves



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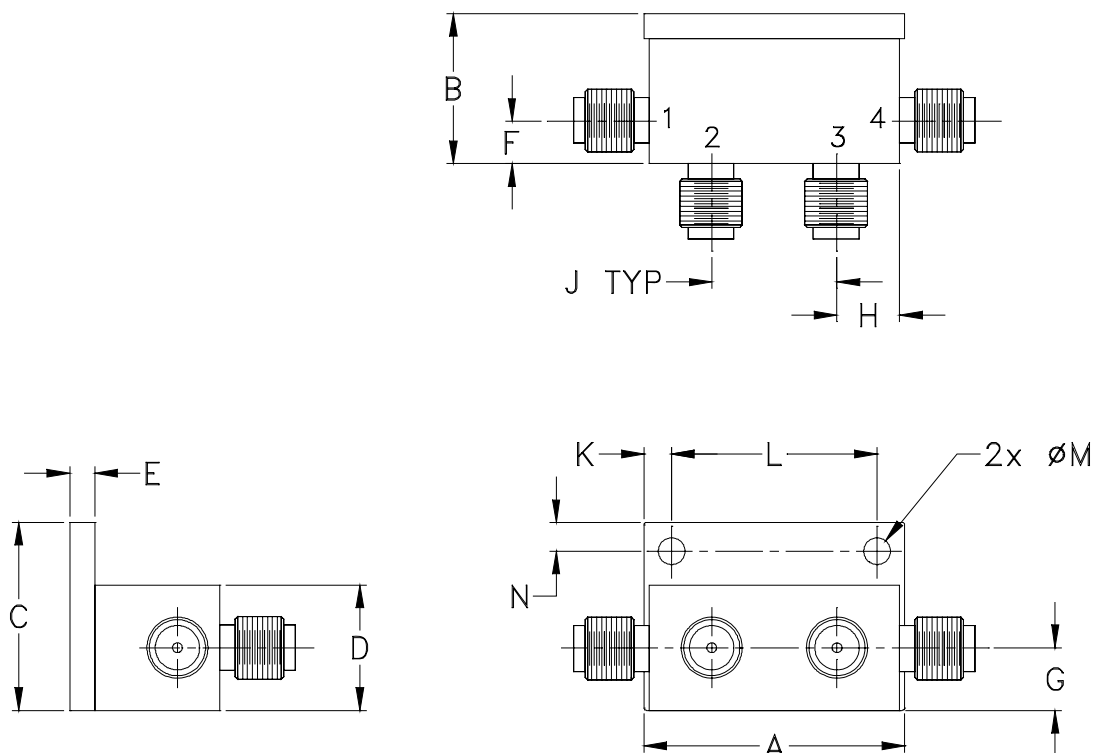
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### Outline Dimensions



| 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:

- Case material: Brass.
- 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 |