*SMA Connectorized*

# Power Splitter/Combiner

## ZX10Q-2-25-S+
## ZX10Q-2-25-S

2 Way-90° 50Ω 1350 to 2450 MHz

*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 |

### Features

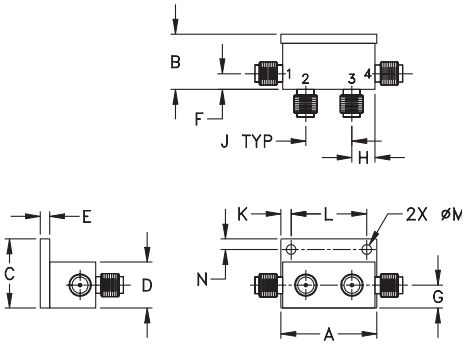
- low insertion loss, 0.4 dB typ.
- excellent amplitude unbalance
- very good phase unbalance
- small size
- low cost
- protected by U.S Patent 6,790,049

### Applications

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

***** 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 |

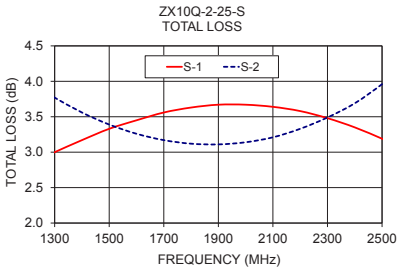
### Electrical Specifications ($T_{AMB}$=25°C)

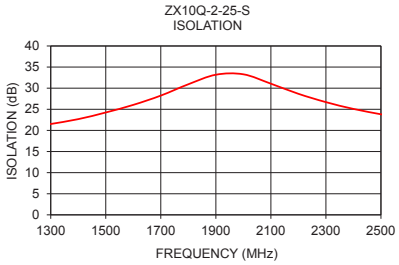
| FREQ. RANGE (MHz) | ISOLATION (dB) | | INSERTION LOSS (dB) Avg. of Coupled Outputs ABOVE 3 dB | | PHASE UNBALANCE (Degrees) | | AMPLITUDE UNBALANCE (dB) | |
|---|---|---|---|---|---|---|---|---|
| $f_L$-$f_U$ | Typ. | Min. | Typ. | Max. | Typ. | Max. | Typ. | Max. |
| **1350-2450** | | | | | | | | |
| 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 |

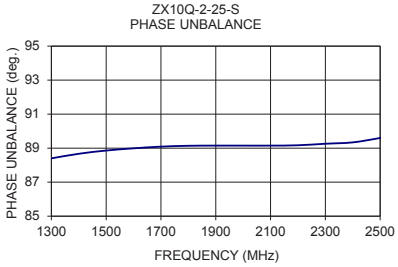
### Typical Performance Data

| Frequency (MHz) | Total Loss[1] (dB) | | Amplitude Unbalance (dB) | Isolation (dB) | Phase Unbalance (deg.) | VSWR S | VSWR 1 | VSWR 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 |

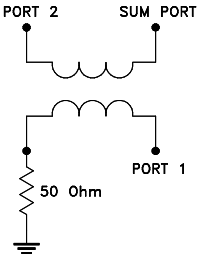
1. Total Loss = Insertion Loss + 3dB splitter loss.




### electrical schematic




**Notes**

**A.** 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.
**B.** Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
**C.** The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

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

*Typical Performance Data*

| FREQ. (MHz) | TOTAL LOSS[1] (dB) S-1 | TOTAL LOSS[1] (dB) S-2 | AMP. UNBAL. (dB) | ISOLATION (dB) 1-2 | PHASE UNBAL. (deg.) |
|---|---|---|---|---|---|
| 1275.0 | 2.95 | 3.83 | 0.88 | 21.24 | 88.32 |
| 1300.0 | 3.00 | 3.77 | 0.77 | 21.52 | 88.40 |
| 1400.0 | 3.17 | 3.56 | 0.38 | 22.67 | 88.67 |
| 1500.0 | 3.33 | 3.39 | 0.06 | 24.25 | 88.86 |
| 1600.0 | 3.45 | 3.26 | 0.20 | 26.05 | 88.99 |
| 1700.0 | 3.56 | 3.17 | 0.38 | 28.25 | 89.09 |
| 1800.0 | 3.63 | 3.12 | 0.50 | 30.93 | 89.14 |
| 1900.0 | 3.67 | 3.11 | 0.56 | 33.19 | 89.15 |
| 2000.0 | 3.67 | 3.14 | 0.53 | 33.29 | 89.15 |
| 2100.0 | 3.64 | 3.21 | 0.43 | 31.07 | 89.15 |
| 2200.0 | 3.58 | 3.33 | 0.25 | 28.67 | 89.17 |
| 2300.0 | 3.48 | 3.49 | 0.00 | 26.70 | 89.26 |
| 2400.0 | 3.35 | 3.69 | 0.35 | 25.09 | 89.34 |
| 2500.0 | 3.19 | 3.96 | 0.78 | 23.82 | 89.60 |
| 2550.0 | 3.10 | 4.13 | 1.03 | 23.23 | 89.77 |

| FREQ. (MHz) | VSWR (:1) S | VSWR (:1) 1 | VSWR (:1) 2 |
|---|---|---|---|
| 1275.0 | 1.19 | 1.20 | 1.18 |
| 1300.0 | 1.18 | 1.19 | 1.17 |
| 1400.0 | 1.15 | 1.16 | 1.14 |
| 1500.0 | 1.13 | 1.13 | 1.11 |
| 1600.0 | 1.11 | 1.10 | 1.09 |
| 1700.0 | 1.09 | 1.07 | 1.07 |
| 1800.0 | 1.08 | 1.05 | 1.05 |
| 1900.0 | 1.08 | 1.04 | 1.06 |
| 2000.0 | 1.08 | 1.04 | 1.07 |
| 2100.0 | 1.09 | 1.05 | 1.08 |
| 2200.0 | 1.11 | 1.08 | 1.10 |
| 2300.0 | 1.13 | 1.11 | 1.12 |
| 2400.0 | 1.16 | 1.14 | 1.16 |
| 2500.0 | 1.19 | 1.17 | 1.19 |
| 2550.0 | 1.21 | 1.19 | 1.21 |

[1] Total Loss = Insertion Loss + 3dB Splitter Loss



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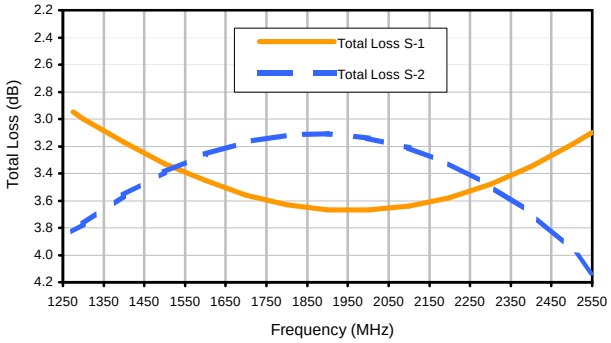
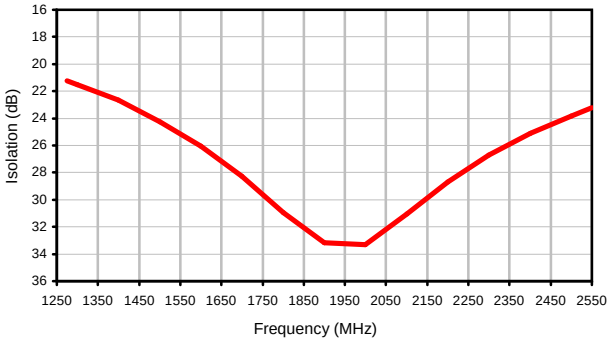
# 2 Way-90° Power Splitter/Combiner ZX10Q-2-25

## *Typical Performance Curves*

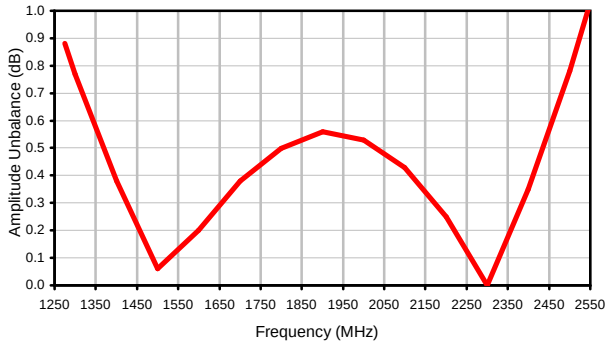
**Total Loss**



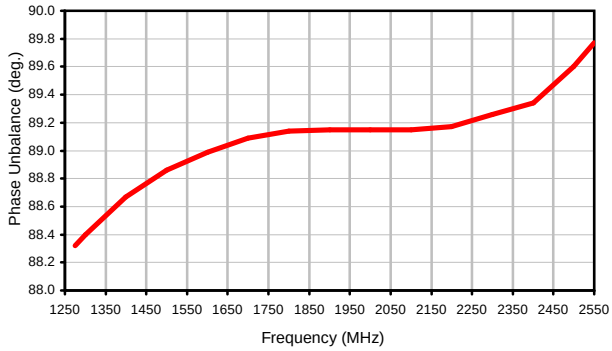

**Isolation**



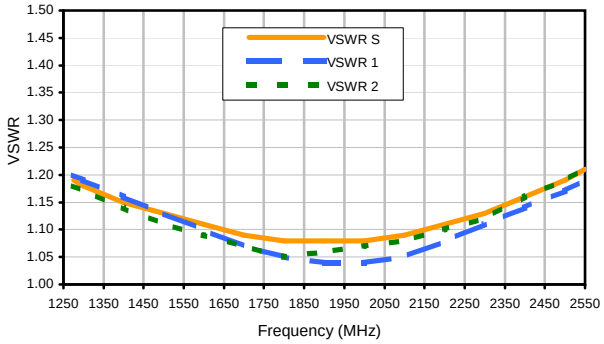

**Amplitude Unbalance**




**Phase Unbalance**




**VSWR**







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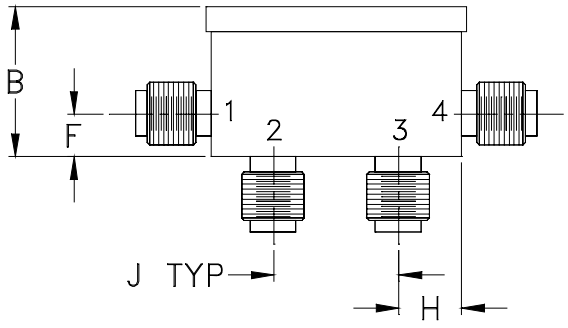
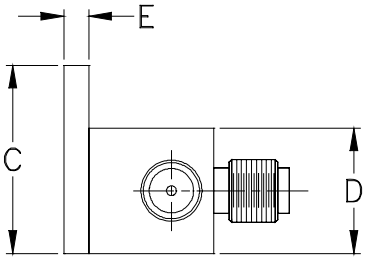
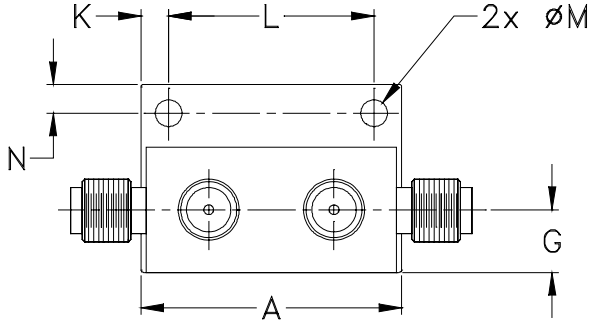
# Case Style GW

**GW1052**

## Outline Dimensions




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

**Dimensions are in inches (mm). Tolerances: 2Pl. ± .03; 3Pl. ± .015.**
**Tolerance on hole size and interaxes dimensions to be ±.005.**

### Notes:

1. Case material: Brass.
2. Case finish: Nickel plate.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**Environmental Specifications** **ENV28T5**

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

| 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 |


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