

## Non-Catalog Model

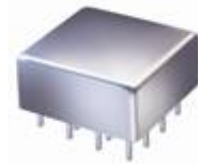
# Power Splitter/Combiner

# PSC-4A-475

## 4 Way-0°

### Important Note

This is a non-catalog model and can be manufactured on specific request.  
Pricing and delivery information can be supplied upon request.



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CASE STYLE : C07

| ELECTRICAL SPECIFICATIONS 75Ω @ +25°C |               |      |       |            |
|---------------------------------------|---------------|------|-------|------------|
| Parameter                             |               | Min. | Typ.  | Max. Units |
| Frequency                             |               | 10   |       | 800 MHz    |
| Isolation                             | 10 - 100 MHz  | 20   | 30    | dB         |
|                                       | 100 - 400 MHz | 20   | 33    | dB         |
|                                       | 400 - 800 MHz | 18   | 25    | dB         |
| Insertion Loss Above 6.0 dB           | 10 - 100 MHz  |      | 0.40  | 0.70 dB    |
|                                       | 100 - 400 MHz |      | 0.60  | 0.90 dB    |
|                                       | 400 - 800 MHz |      | 1.20  | 1.60 dB    |
| Phase Unbalance                       | 10 - 100 MHz  |      | 0.204 | deg.       |
|                                       | 100 - 400 MHz |      | 0.855 | deg.       |
|                                       | 400 - 800 MHz |      | 2.709 | deg.       |
| Amplitude Unbalance                   | 10 - 100 MHz  |      | 0.016 | 0.200 dB   |
|                                       | 100 - 400 MHz |      | 0.084 | 0.400 dB   |
|                                       | 400 - 800 MHz |      | 0.298 | 0.800 dB   |
| VSWR                                  | SUM Port      |      | 1.27  | (:1)       |
|                                       | OUT Ports     |      | 1.16  | (:1)       |

**Notes:** Matched power rating: 1 Watt.

Internal load dissipation: 0.25 Watt.

Denotes 75 Ohm model, for coax connector models 75 Ohm BNC connectors are standard.

| MAXIMUM RATINGS       |                |
|-----------------------|----------------|
| Operating Temperature | -55°C to 85°C  |
| Storage Temperature   | -55°C to 100°C |

| PIN CONNECTIONS |                |
|-----------------|----------------|
| SUM PORT        | 2              |
| PORT 1          | 8              |
| PORT 2          | 12             |
| PORT 3          | 5              |
| PORT 4          | 9              |
| GND EXT         | all other pins |

### Functional Diagram



# 4 Way-0° Power Splitter/Combiner

PSC-4A-475

## Typical Performance Data

| FREQ.<br>(MHz) | TOTAL LOSS <sup>1</sup><br>(dB) |      |      |      | AMP.<br>UNBAL.<br>(dB) | ISOLATION<br>(dB) |       |       | PHASE<br>UNBAL.<br>(deg.) | FREQ.<br>(MHz) | VSWR<br>(:1) |      |      |      |      |
|----------------|---------------------------------|------|------|------|------------------------|-------------------|-------|-------|---------------------------|----------------|--------------|------|------|------|------|
|                | S-1                             | S-2  | S-3  | S-4  |                        | 1-2               | 2-3   | 3-4   |                           |                | S            | 1    | 2    | 3    | 4    |
| 10.0           | 6.22                            | 6.22 | 6.23 | 6.23 | 0.01                   | 28.88             | 22.48 | 29.05 | 0.01                      | 10.0           | 1.32         | 1.15 | 1.15 | 1.16 | 1.16 |
| 20.0           | 6.24                            | 6.24 | 6.24 | 6.26 | 0.02                   | 27.72             | 23.99 | 27.91 | 0.13                      | 20.0           | 1.32         | 1.08 | 1.08 | 1.08 | 1.09 |
| 30.0           | 6.25                            | 6.25 | 6.25 | 6.26 | 0.01                   | 26.69             | 24.76 | 26.89 | 0.09                      | 30.0           | 1.32         | 1.06 | 1.06 | 1.06 | 1.06 |
| 40.0           | 6.26                            | 6.26 | 6.27 | 6.27 | 0.01                   | 26.06             | 25.21 | 26.24 | 0.13                      | 40.0           | 1.32         | 1.05 | 1.05 | 1.05 | 1.05 |
| 50.0           | 6.27                            | 6.28 | 6.28 | 6.28 | 0.02                   | 25.68             | 25.49 | 25.83 | 0.21                      | 50.0           | 1.32         | 1.06 | 1.06 | 1.05 | 1.05 |
| 60.0           | 6.28                            | 6.29 | 6.29 | 6.30 | 0.02                   | 25.39             | 25.68 | 25.52 | 0.20                      | 60.0           | 1.31         | 1.06 | 1.06 | 1.05 | 1.05 |
| 70.0           | 6.29                            | 6.29 | 6.30 | 6.30 | 0.01                   | 25.16             | 25.83 | 25.28 | 0.31                      | 70.0           | 1.31         | 1.06 | 1.06 | 1.06 | 1.06 |
| 80.0           | 6.29                            | 6.29 | 6.30 | 6.31 | 0.02                   | 25.00             | 25.94 | 25.08 | 0.34                      | 80.0           | 1.31         | 1.07 | 1.07 | 1.06 | 1.06 |
| 90.0           | 6.31                            | 6.30 | 6.31 | 6.31 | 0.02                   | 24.89             | 26.06 | 24.97 | 0.30                      | 90.0           | 1.31         | 1.07 | 1.07 | 1.07 | 1.06 |
| 100.0          | 6.30                            | 6.30 | 6.31 | 6.32 | 0.02                   | 24.82             | 26.13 | 24.90 | 0.32                      | 100.0          | 1.31         | 1.08 | 1.08 | 1.07 | 1.07 |
| 120.0          | 6.32                            | 6.32 | 6.35 | 6.35 | 0.03                   | 24.75             | 26.28 | 24.81 | 0.34                      | 120.0          | 1.31         | 1.09 | 1.09 | 1.08 | 1.08 |
| 140.0          | 6.34                            | 6.34 | 6.37 | 6.36 | 0.03                   | 24.75             | 26.43 | 24.84 | 0.45                      | 140.0          | 1.31         | 1.10 | 1.10 | 1.09 | 1.09 |
| 160.0          | 6.35                            | 6.35 | 6.38 | 6.38 | 0.03                   | 24.85             | 26.57 | 24.93 | 0.55                      | 160.0          | 1.31         | 1.11 | 1.11 | 1.10 | 1.10 |
| 180.0          | 6.34                            | 6.33 | 6.38 | 6.37 | 0.04                   | 24.98             | 26.72 | 25.03 | 0.60                      | 180.0          | 1.31         | 1.12 | 1.12 | 1.11 | 1.11 |
| 200.0          | 6.35                            | 6.34 | 6.39 | 6.37 | 0.05                   | 25.12             | 26.87 | 25.23 | 0.63                      | 200.0          | 1.31         | 1.13 | 1.14 | 1.12 | 1.11 |
| 220.0          | 6.38                            | 6.36 | 6.43 | 6.41 | 0.07                   | 25.37             | 27.09 | 25.43 | 0.66                      | 220.0          | 1.32         | 1.14 | 1.15 | 1.13 | 1.13 |
| 240.0          | 6.41                            | 6.38 | 6.45 | 6.42 | 0.07                   | 25.64             | 27.31 | 25.70 | 0.81                      | 240.0          | 1.32         | 1.15 | 1.16 | 1.14 | 1.14 |
| 260.0          | 6.37                            | 6.35 | 6.44 | 6.40 | 0.09                   | 25.89             | 27.51 | 25.96 | 0.87                      | 260.0          | 1.32         | 1.17 | 1.18 | 1.15 | 1.15 |
| 280.0          | 6.37                            | 6.35 | 6.44 | 6.41 | 0.09                   | 26.22             | 27.74 | 26.26 | 0.97                      | 280.0          | 1.31         | 1.18 | 1.19 | 1.16 | 1.15 |
| 300.0          | 6.41                            | 6.37 | 6.48 | 6.44 | 0.11                   | 26.59             | 28.07 | 26.61 | 0.98                      | 300.0          | 1.31         | 1.19 | 1.20 | 1.16 | 1.16 |
| 320.0          | 6.43                            | 6.39 | 6.50 | 6.46 | 0.11                   | 27.00             | 28.39 | 26.96 | 1.13                      | 320.0          | 1.31         | 1.19 | 1.21 | 1.17 | 1.17 |
| 340.0          | 6.44                            | 6.39 | 6.52 | 6.47 | 0.13                   | 27.42             | 28.75 | 27.32 | 1.19                      | 340.0          | 1.30         | 1.20 | 1.22 | 1.17 | 1.17 |
| 360.0          | 6.43                            | 6.37 | 6.51 | 6.45 | 0.14                   | 27.88             | 29.12 | 27.68 | 1.32                      | 360.0          | 1.30         | 1.21 | 1.22 | 1.18 | 1.18 |
| 380.0          | 6.43                            | 6.39 | 6.55 | 6.48 | 0.16                   | 28.39             | 29.56 | 27.99 | 1.41                      | 380.0          | 1.29         | 1.22 | 1.23 | 1.18 | 1.18 |
| 400.0          | 6.47                            | 6.41 | 6.58 | 6.51 | 0.17                   | 28.98             | 30.10 | 28.29 | 1.45                      | 400.0          | 1.29         | 1.22 | 1.24 | 1.18 | 1.19 |
| 420.0          | 6.46                            | 6.42 | 6.60 | 6.51 | 0.17                   | 29.58             | 30.64 | 28.52 | 1.46                      | 420.0          | 1.28         | 1.23 | 1.25 | 1.19 | 1.19 |
| 440.0          | 6.47                            | 6.40 | 6.61 | 6.50 | 0.21                   | 30.11             | 31.22 | 28.65 | 1.71                      | 440.0          | 1.28         | 1.24 | 1.25 | 1.19 | 1.19 |
| 460.0          | 6.48                            | 6.41 | 6.62 | 6.52 | 0.22                   | 30.70             | 31.96 | 28.65 | 1.89                      | 460.0          | 1.27         | 1.24 | 1.26 | 1.19 | 1.20 |
| 480.0          | 6.53                            | 6.46 | 6.68 | 6.55 | 0.22                   | 31.30             | 32.78 | 28.63 | 1.85                      | 480.0          | 1.27         | 1.25 | 1.27 | 1.19 | 1.20 |
| 500.0          | 6.53                            | 6.44 | 6.68 | 6.57 | 0.24                   | 31.85             | 33.65 | 28.43 | 2.07                      | 500.0          | 1.26         | 1.26 | 1.27 | 1.19 | 1.20 |
| 520.0          | 6.54                            | 6.43 | 6.69 | 6.57 | 0.26                   | 32.33             | 34.80 | 28.13 | 2.16                      | 520.0          | 1.25         | 1.26 | 1.28 | 1.19 | 1.20 |
| 540.0          | 6.55                            | 6.45 | 6.72 | 6.59 | 0.27                   | 32.66             | 35.98 | 27.71 | 2.34                      | 540.0          | 1.23         | 1.26 | 1.28 | 1.19 | 1.20 |
| 560.0          | 6.58                            | 6.47 | 6.77 | 6.62 | 0.30                   | 32.85             | 37.43 | 27.28 | 2.48                      | 560.0          | 1.22         | 1.27 | 1.29 | 1.19 | 1.20 |
| 580.0          | 6.59                            | 6.48 | 6.78 | 6.63 | 0.30                   | 32.94             | 39.23 | 26.81 | 2.68                      | 580.0          | 1.20         | 1.27 | 1.30 | 1.19 | 1.20 |
| 600.0          | 6.60                            | 6.49 | 6.81 | 6.65 | 0.33                   | 32.80             | 41.53 | 26.29 | 2.79                      | 600.0          | 1.19         | 1.28 | 1.30 | 1.19 | 1.20 |
| 620.0          | 6.63                            | 6.51 | 6.85 | 6.68 | 0.34                   | 32.53             | 44.17 | 25.72 | 2.93                      | 620.0          | 1.17         | 1.28 | 1.30 | 1.19 | 1.20 |
| 640.0          | 6.65                            | 6.51 | 6.88 | 6.70 | 0.38                   | 32.10             | 46.26 | 25.18 | 3.07                      | 640.0          | 1.16         | 1.28 | 1.30 | 1.18 | 1.20 |
| 660.0          | 6.69                            | 6.54 | 6.92 | 6.72 | 0.38                   | 31.68             | 45.81 | 24.63 | 3.40                      | 660.0          | 1.14         | 1.28 | 1.30 | 1.18 | 1.19 |
| 700.0          | 6.76                            | 6.61 | 6.99 | 6.80 | 0.39                   | 30.57             | 40.01 | 23.59 | 3.87                      | 700.0          | 1.10         | 1.28 | 1.30 | 1.17 | 1.19 |
| 750.0          | 6.85                            | 6.67 | 7.10 | 6.90 | 0.44                   | 29.09             | 34.39 | 22.29 | 4.48                      | 750.0          | 1.06         | 1.28 | 1.30 | 1.16 | 1.18 |
| 800.0          | 7.02                            | 6.81 | 7.26 | 7.05 | 0.45                   | 27.57             | 30.50 | 21.07 | 5.42                      | 800.0          | 1.10         | 1.28 | 1.30 | 1.16 | 1.19 |

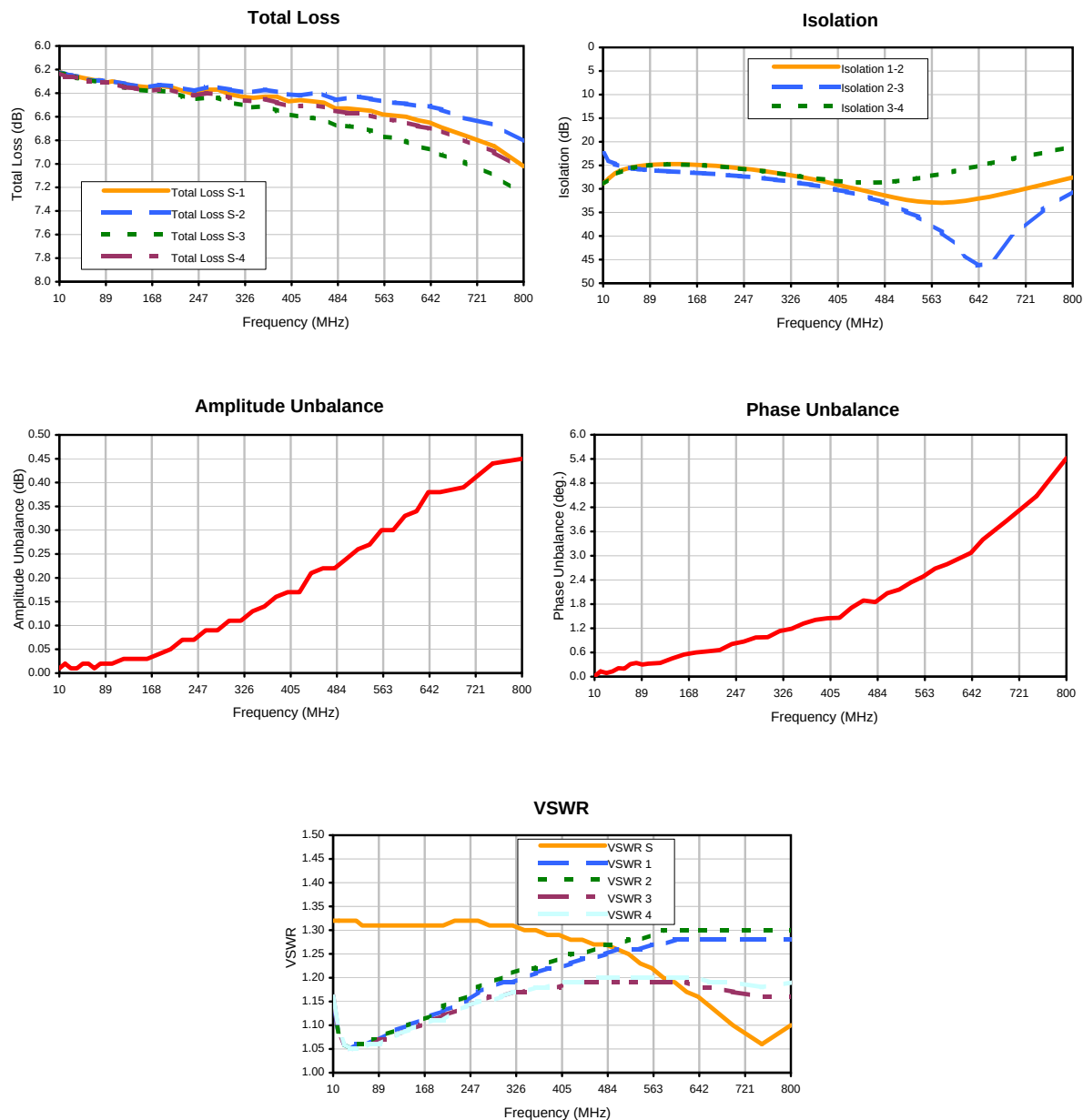
<sup>1</sup> Total Loss = Insertion Loss+ 6dB Splitter Loss



# 4 Way-0° Power Splitter/Combiner

PSC-4A-475

## Typical Performance Curves



REV. X2  
PSC-4A-475  
100705  
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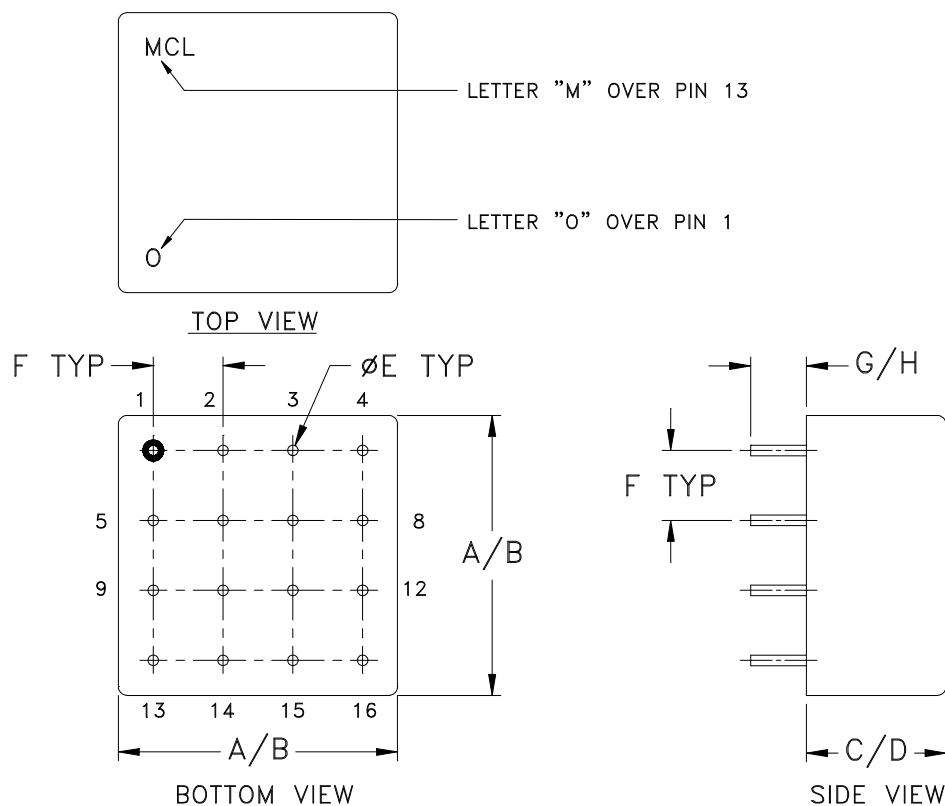
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## Outline Dimensions

C07



| CASE# | A               | B               | C              | D               | E             | F              | G             | H             | WT. GRAM |
|-------|-----------------|-----------------|----------------|-----------------|---------------|----------------|---------------|---------------|----------|
| C07   | .770<br>(19.56) | .810<br>(20.57) | .380<br>(9.65) | .410<br>(10.41) | .030<br>(.76) | .200<br>(5.08) | .20<br>(5.08) | .14<br>(3.56) | 11.0     |

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

### Notes:

- Header material: C.R.S.  
Pin material: #52 alloy.  
Cover material: Cupro-Nickel.
- Pin finish: Electro Tin-Silver..
- Tolerance on pin diameter  $\pm .005$  inch.
- Glass meniscus 0.015 inch max.
- Blue bead indicates Pin 1. Pin numbers do not appear on unit, for reference only.



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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          | -55° to 100° C<br>Ambient Environment                                                                                                                           | Individual Model Data Sheet                                                                          |
| Storage Temperature            | -55° to 100° C<br>Ambient Environment                                                                                                                           | Individual Model Data Sheet                                                                          |
| Thermal Shock                  | -55° to 100°C, 100 cycles                                                                                                                                       | MIL-STD-202, Method 107, Condition A-3, except +100°C                                                |
| 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               | 50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes                                                                                               | MIL-STD-202, Method 213, Condition A                                                                 |
| Moisture Resistance            | 10 cycles, 24 hours per cycle                                                                                                                                   | MIL-STD-202, Method 106, Condition A, except 50°C and end point electrical test done within 12 hours |
| Solderability                  | 10X Magnification                                                                                                                                               | J-STD-002, 95% Coverage                                                                              |
| Resistance to Solder Heat      | 260°C for 10 seconds                                                                                                                                            | MIL-STD-202, Method 210, Condition B                                                                 |
| Marking Resistance to Solvents | Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C;<br>distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C | MIL-STD-202, Method 215                                                                              |
| Terminal Strength              | 4 1/2 Pound Pull                                                                                                                                                | MIL-STD-202, Method 211, Condition A                                                                 |



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| Specification       | Test/Inspection Condition | Reference/Spec                       |
|---------------------|---------------------------|--------------------------------------|
| Gross Leak          | 125°C Bubble Test         | MIL-STD-202, Method 112, Condition D |
| Barometric Pressure | 100,000 Feet              | MIL-STD-202, Method 105, Condition D |