

## Two-Way Power Divider, 10 - 500 MHz

DS-109/DS-319  
V3

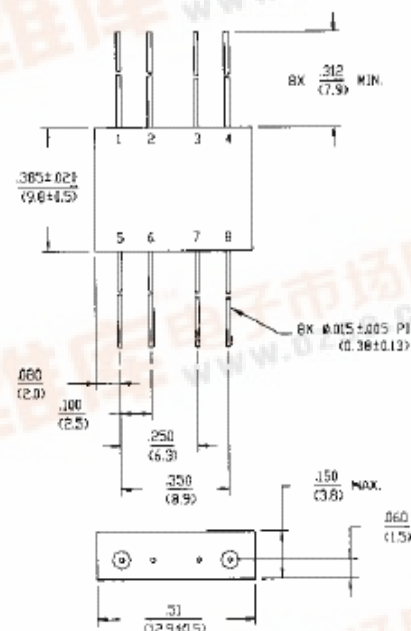
### Features

- 1° Phase Balance Maximum
- 35 dB Typical Midband Isolation
- 1.1 Typical Midband VSWR
- VSWR: 1.2:1 Typical Midband
- Impedance: 50 Ohms Nominal
- Maximum Power Rating or Input Power: 1W Max.
- Internal Load Dissipation: 0.05 mW Max.
- MIL-STD-202 Screening Available

### Description

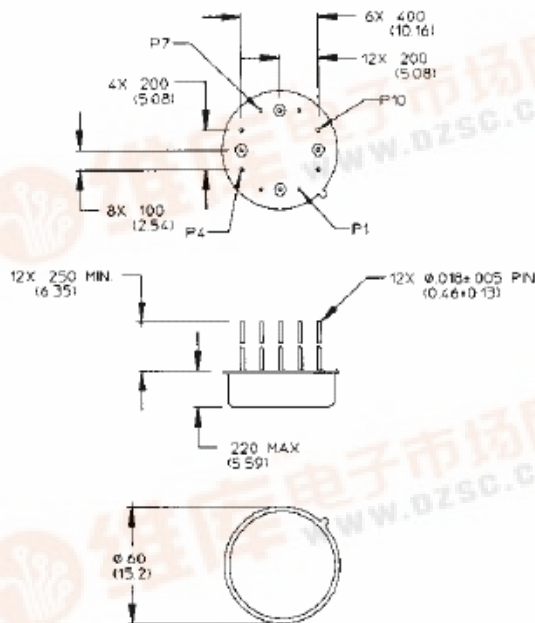
A Power Divider is ideally a lossless reciprocal device which can also perform vector summation of two or more signals and thus is sometimes called a power combiner or summer.

### FP-2 (DS-109)



Dimensions in ( ) are in mm  
Unless Otherwise Noted: XXX = ±0.010 (XX = ±0.25)  
XX = ±0.02 (X = ±0.5)  
WEIGHT (APPROX): 0.09 OUNCES 2.55 GRAMS

### TO-8-2 (DS-319)



Bottom of Case is AC Ground  
Dimensions in ( ) are in mm  
Unless Otherwise Noted: XXX = ±0.010 (XX = ±0.25)  
XX = ±0.02 (X = ±0.5)

### Pin Configuration (DS-109)

| Pin No. | Function | Pin No. | Function |
|---------|----------|---------|----------|
| 1       | Σ        | 5       | GND      |
| 2       | GND      | 6       | GND      |
| 3       | GND      | 7       | GND      |
| 4       | Output C | 8       | Output D |

### Pin Configuration (DS-319)

| Pin No. | Function | Pin No. | Function |
|---------|----------|---------|----------|
| 1       | GND      | 7       | GND      |
| 2       | Output D | 8       | Output C |
| 3       | GND      | 9       | GND      |
| 4       | GND      | 10      | GND      |
| 5       | Σ IN     | 11      | GND      |
| 6       | GND      | 12      | GND      |

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**DS-109 Electrical Specifications<sup>1</sup>: T<sub>A</sub> = -55°C to +85°C**

| Parameter         | Test Conditions | Frequency    | Units | Min | Typ | Max   |
|-------------------|-----------------|--------------|-------|-----|-----|-------|
| Insertion Loss    | Less Coupling   | 10 - 500 MHz | dB    | —   | —   | 0.6   |
| Isolation         | —               | 10 - 500 MHz | dB    | 25  | —   | —     |
| Amplitude Balance | —               | 10 - 500 MHz | dB    | —   | —   | 0.15  |
| Phase Balance     | —               | 10 - 500 MHz | °     | —   | —   | 1     |
| VSWR              | All Ports       | 10 - 500 MHz | Ratio | —   | —   | 1.3:1 |

**DS-319 Electrical Specifications<sup>1</sup>: T<sub>A</sub> = -55°C to +85°C**

| Parameter         | Test Conditions | Frequency                    | Units          | Min    | Typ    | Max            |
|-------------------|-----------------|------------------------------|----------------|--------|--------|----------------|
| Insertion Loss    | Less Coupling   | 10 - 200 MHz<br>10 - 500 MHz | dB<br>dB       | —<br>— | —<br>— | 0.6<br>0.9     |
| Isolation         | —               | 10 - 500 MHz                 | dB             | 25     | —      | —              |
| Amplitude Balance | —               | 10 - 200 MHz<br>10 - 500 MHz | dB<br>dB       | —<br>— | —<br>— | 0.15<br>0.2    |
| Phase Balance     | —               | 10 - 500 MHz                 | °              | —      | —      | 1              |
| VSWR              | All Ports       | 10 - 200 MHz<br>10 - 500 MHz | Ratio<br>Ratio | —<br>— | —<br>— | 1.3:1<br>1.6:1 |

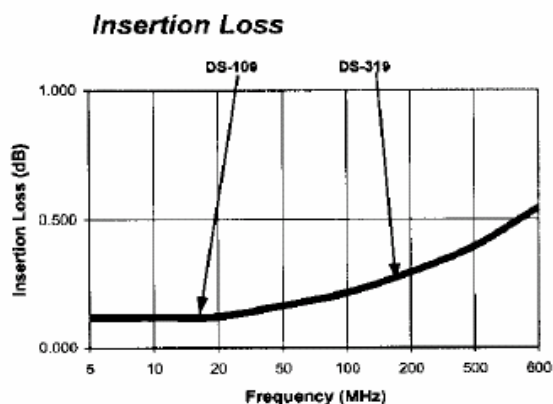
1. All specifications apply with 50 ohm source and load impedance.

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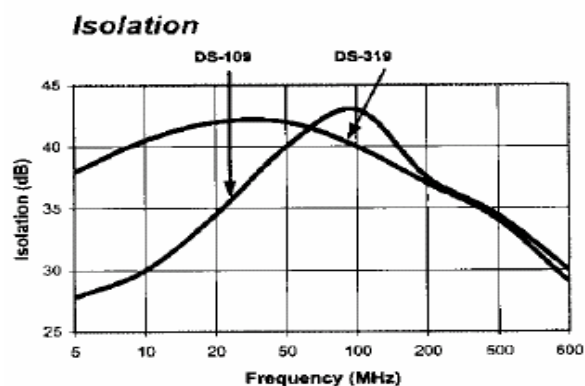
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### Typical Performance Curves

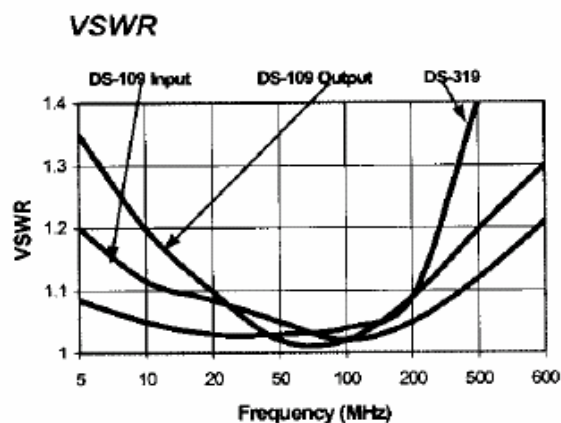
Insertion Loss - Ports  $\Sigma$ -C,  $\Sigma$ -D



Isolation - Ports C-D



VSWR



### Ordering Information

| Part Number | Package |
|-------------|---------|
| DS-109 PIN  | FP-2    |
| DS-319 PIN  | TO-8-2  |