# DS-109 / DS-319

## Two– Way Power Divider
## 10-500Mhz

Rev. V3

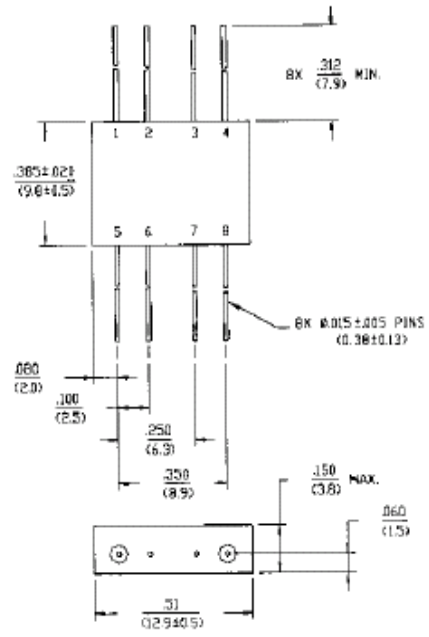
### Features

- 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

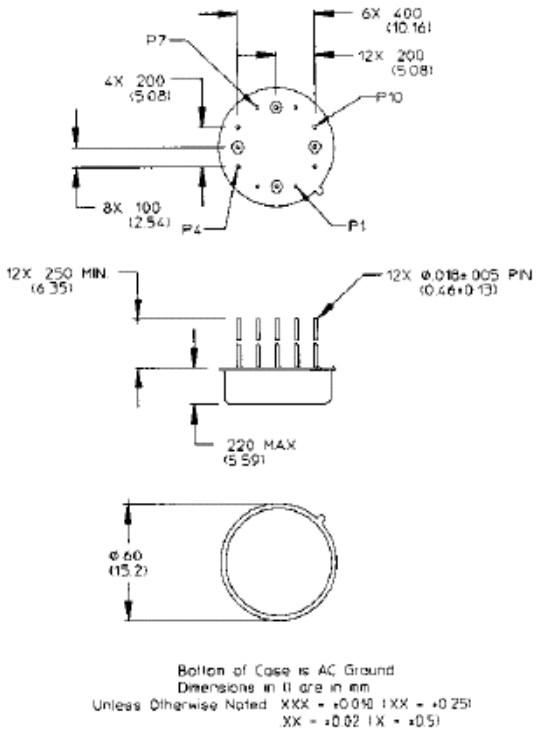
A Power Divider is ideally a lossless reciprocal device which can also perform vector summation of two or more signals and thus is sometimes called a power combiner or summer.

### FP-2 (DS-109)




Dimensions in ( ) are in mm
Unless Otherwise Noted .XXX = ±.010 (.XX = ±.25)
.XX = ±.02 (.X = ±.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 = ±.010 (.XX = ±.25)
.XX = ±.02 (.X = ±.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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## Two– Way Power Divider
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### DS-109 Electrical Specifications[1]: $T_A$ = -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[1]: $T_A$ = -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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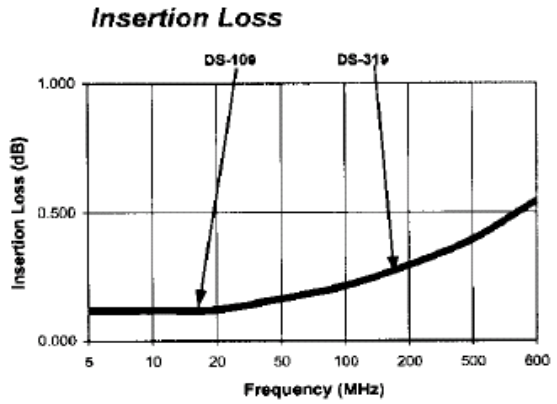
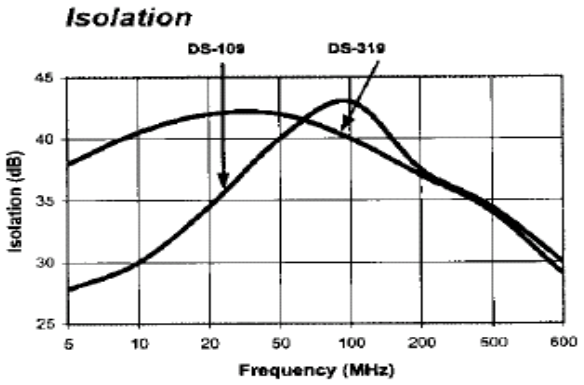
## Typical Performance Curves

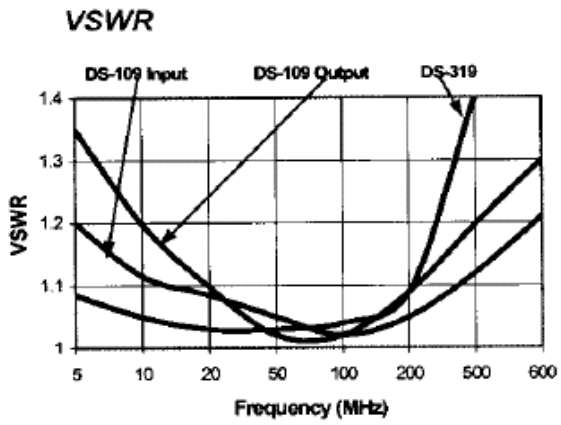
***Insertion Loss - Ports Σ-C, Σ–D***




***Isolation - Ports C-D***




***VSWR***




## Ordering Information

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



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