## Features

- $0^{\circ}-180^{\circ}$ Hybrid with High Isolation
- Usable from $500 \mathrm{KHz}-500 \mathrm{MHz}$
- MIL-STD-202 Screening Available


## Description

3 dB Hybrids are ideal for dividing a signal into two signals of equal amplitude and a constant $90^{\circ}$ or $180^{\circ}$ phase differential and for Quadrature combining or performing summation/differential combining.

SF-1 (HHS-109)


## Pin Configuration (HHS-109)

| Pin No. | Function | Pin No. | Function |
| :---: | :---: | :---: | :---: |
| 1 | A | 3 | B |
| 2 | C | 4 | D |

FP-2 (HH-109)


## Pin Configuration (HH-109)

| Pin No. | Function | Pin No. | Function |
| :---: | :---: | :---: | :---: |
| 1 | A | 5 | B |
| 2 | GND | 6 | GND |
| 3 | GND | 7 | GND |
| 4 | C | 8 | D |

## Functional Diagram



ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, is considering for development. Performance is based on target specifications,
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Electrical Specifications ${ }^{1}: \mathrm{T}_{\mathrm{A}}=-55^{\circ} \mathrm{C}$ to $+85^{\circ} \mathrm{C}$

| Parameter | Test Conditions | Frequency | Units | Min | Typ | Max |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Insertion Loss | Less Coupling | 5-200 MHz | dB | - | - | 1.4 |
| Isolation |  | $\begin{gathered} 5-100 \mathrm{MHz} \\ 100-200 \mathrm{MHz} \end{gathered}$ | $\mathrm{dB}$ dB | $\begin{aligned} & 30 \\ & 25 \end{aligned}$ | - | - |
| Amplitude Balance | - | 5-200 MHz | dB | - | - | 0.3 |
| VSWR | - | $\begin{gathered} 5-100 \mathrm{MHz} \\ 100-200 \mathrm{MHz} \end{gathered}$ | Ratio <br> Ratio | — | - | $\begin{aligned} & 1.5: 1 \\ & 1.7: 1 \end{aligned}$ |
| Phase Balance | - | $\begin{gathered} 5-100 \mathrm{MHz} \\ 100-200 \mathrm{MHz} \end{gathered}$ | $\bigcirc$ | - | - | $\begin{aligned} & 4 \\ & 8 \end{aligned}$ |
| Impedance | - | - | Ohms | - | 50 | - |
| Input Power | - | - | Watts | - | - | 0.5 |

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

## Typical Performance Curves

Insertion Loss


VSWR


Isolation


## Ordering Information

| Part Number | Package |
| :---: | :---: |
| HH-109 PIN | FP-2 |
| HHS-109 PIN | SF-1 |

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