

**Quadrature Hybrid,  
7 - 14 MHz**

**JH-/JHS-113  
V3**

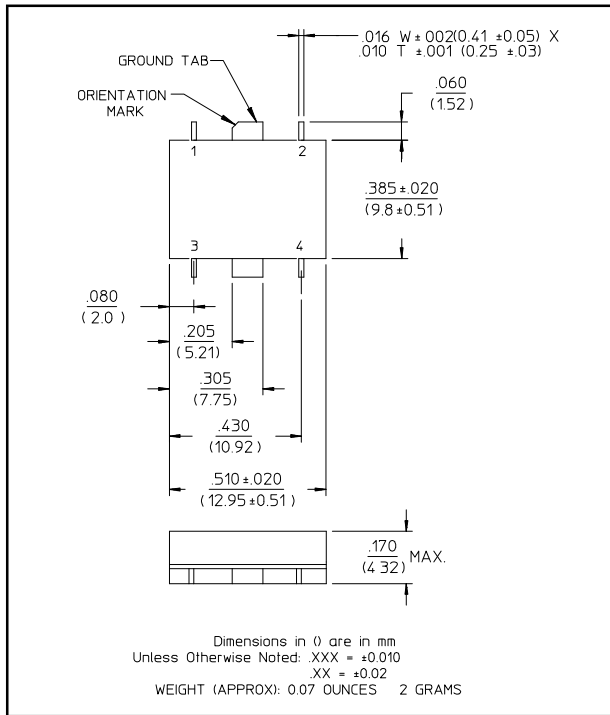
**Features**

- Octave Bandwidth
- Low VSWR: 1.2:1
- Low Loss: 0.5 dB Max.
- Impedance: 50 Ohms Nominal
- Input Power: 4 Watts Max. @ 25°C
- 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° or 180° phase differential and for Quadrature combining or performing summation/differential combining.

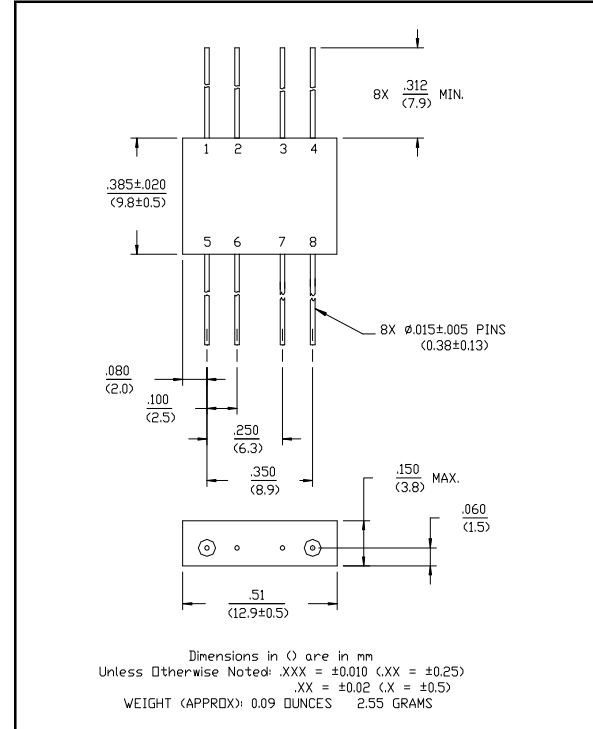
**SF-1 (JHS-113)**



**Pin Configuration (JHS-113)**

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

**FP-2 (JH-113)**



**Pin Configuration (JH-113)**

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

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

Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
Insertion Loss <sup>2</sup>	Less Coupling	7 - 14 MHz	dB	—	—	0.5
Isolation	—	7 - 14 MHz	dB	20	—	—
Amplitude Balance	—	7 - 14 MHz	dB	—	—	0.75
VSWR	—	7 - 14 MHz	Ratio	—	—	1.2:1
Deviation from Quadrature	—	7 - 14 MHz	°	—	—	3

1. All specifications apply with 50 ohm source and load impedance.
2. Average of coupled output less 3 dB.

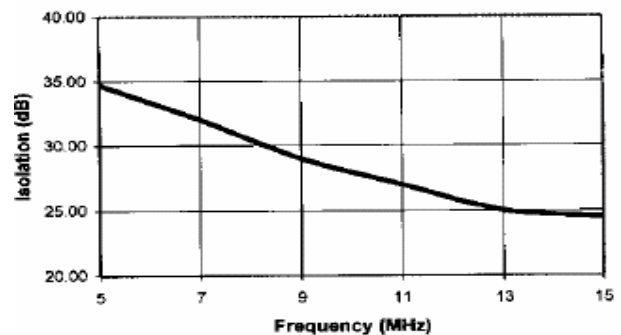
**Phasing Diagram**

IN \ OUT	A	B	C	D
A	ISO	90°	0°	-90°
B	ISO	0°	-90°	90°
C	0°	90°	ISO	0°
D	-90°	0°	ISO	90°

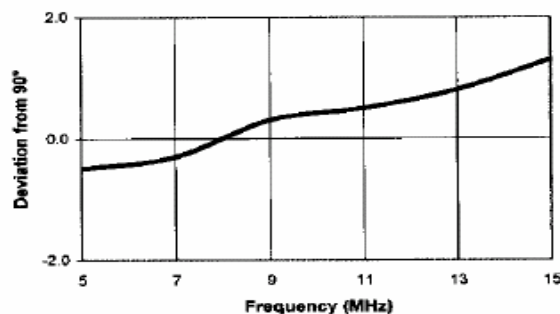
All other pins and case are ground.

**Typical Performance Curves**

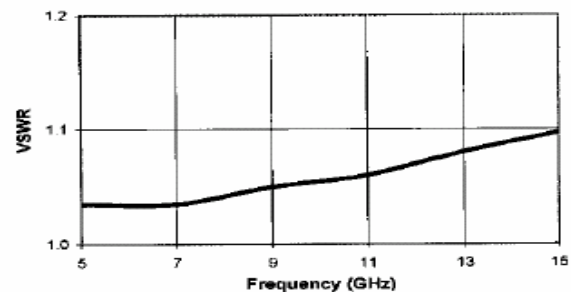
**Isolation**



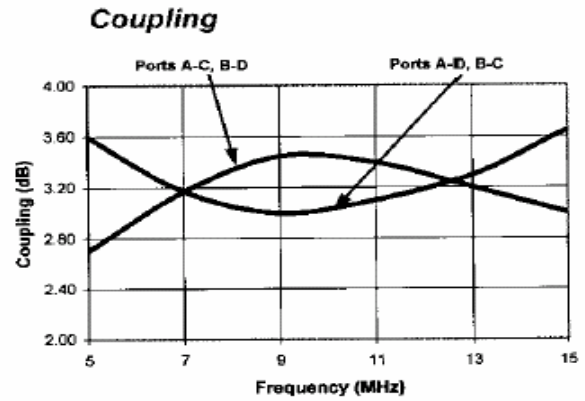
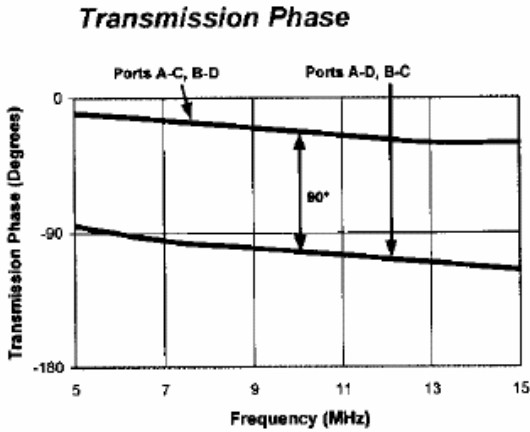
**Deviation from Quadrature**



**VSWR (All Ports)**



**Typical Performance Curves**



**Ordering Information**

Part Number	Package
JH-113 PIN	FP-2
JHS-113 PIN	SF-1