

High Frequency Quadrature Hybrid, 1 - 2 GHz

Rev. V3

Features

- Octave Bandwidth
- Low VSWR: 1.25:1 Typical
- Miniature Size: 1/2" x 3/8" Flatpack
- Impedance: 50 Ohms Nominal
- Input Power: 25 Watts Max @ +25°C, Derated to 1 Watt @ +85°C
- MIL-STD-202 Screening Available

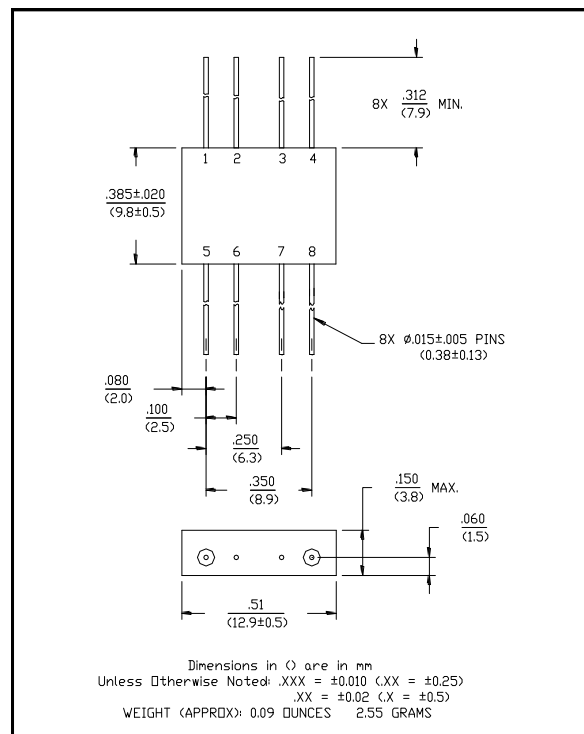
Description

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.

Phasing Diagram

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

FP-2



Pin Configuration

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

Electrical Specifications¹: T_A = -55°C to +85°C

Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
Insertion Loss ²	Less Coupling	1- 2 GHz	dB	—	—	0.3
Isolation	—	1- 2 GHz	dB	18	—	—
Amplitude Balance	—	1- 2 GHz	dB	—	—	1.0
VSWR	—	1- 2 GHz	Ratio	—	—	1.5:1
Deviation from Quadrature	—	1- 2 GHz	°	—	—	5

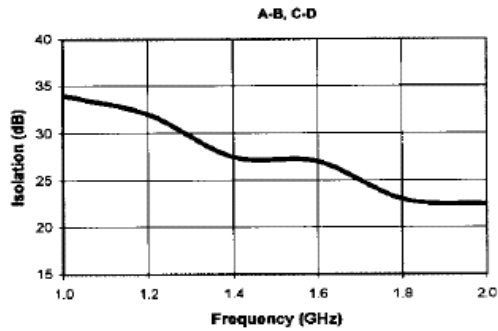
1. All specifications apply with 50 ohm source and load impedance.

2. Average of coupled output less 3 dB.

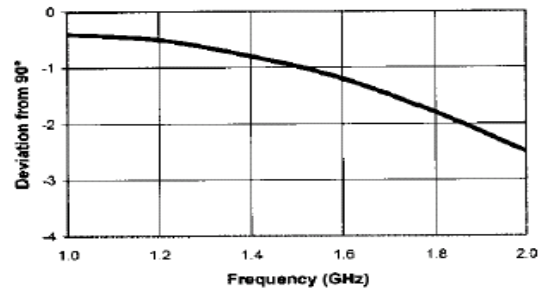
This product contains elements protected by United States Patent Number 3,484,724.

Typical Performance Curves

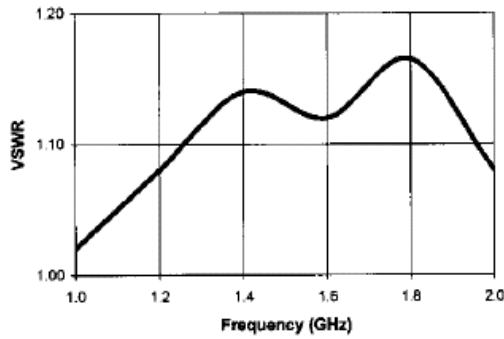
Isolation



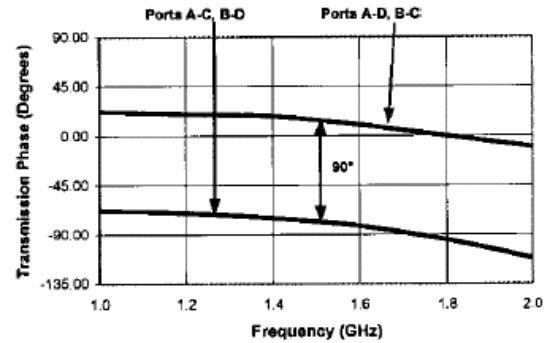
Deviation from Quadrature



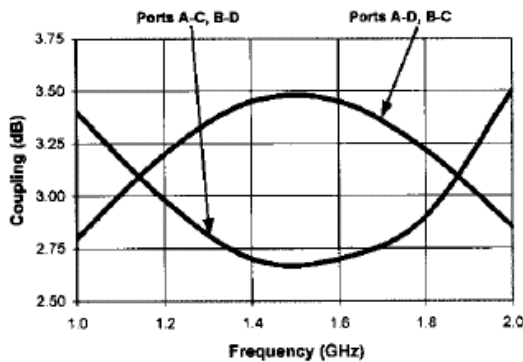
VSWR



Transmission Phase



Coupling



Ordering Information

Part Number	Package
JH-141 PIN	FP-2

M/A-COM Technology Solutions Inc. All rights reserved.

Information in this document is provided in connection with M/A-COM Technology Solutions Inc ("MACOM") products. These materials are provided by MACOM as a service to its customers and may be used for informational purposes only. Except as provided in MACOM's Terms and Conditions of Sale for such products or in any separate agreement related to this document, MACOM assumes no liability whatsoever. MACOM assumes no responsibility for errors or omissions in these materials. MACOM may make changes to specifications and product descriptions at any time, without notice. MACOM makes no commitment to update the information and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to its specifications and product descriptions. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document.

THESE MATERIALS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF MACOM PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, CONSEQUENTIAL OR INCIDENTAL DAMAGES, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. MACOM FURTHER DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. MACOM SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS, WHICH MAY RESULT FROM THE USE OF THESE MATERIALS.

MACOM products are not intended for use in medical, lifesaving or life sustaining applications. MACOM customers using or selling MACOM products for use in such applications do so at their own risk and agree to fully indemnify MACOM for any damages resulting from such improper use or sale.