

## PRODUCT DATA SHEET

QH8105

### Our patented 3 dB 90° Hybrid Couplers provide:

- Superior component performance starting at 3:1 Bandwidth.
- Thicker center boards for high power and increased repeatability.
- Bonded structures which eliminate any air gaps between substrates.
- More sections per bandwidth for better coupling flatness.
- Electrically shorter and physically smaller RF components.

### Features:

High Power

Wide Bandwidths

Small Size

Excellent Amplitude Balance

### Electrical Specifications:

Frequency: 800 - 4200 MHz  
Power: 150 W CW  
Insertion Loss: 0.55 dB Max.  
VSWR: 1.35:1 Max.  
Phase Balance: ± 5° dB Max.  
Amplitude Balance: ± 0.5 dB Max.  
Isolation: 18 dB Min.

### Mechanical Specifications:

Type: Surface Mount  
Plating Options: QH8105-Sn: Immersion Tin (RoHS)  
QH8105-Ag: Immersion Silver (RoHS)  
QH8105-Au: ENIG (RoHS)  
QH8105-Pb: ED Tin/Lead  
Size: 1.5 x 1.08 x 0.09"  
Weight: 5 grams

### Port Configurations:

**J1**  
Sum Port

**J2**  
90° Port

**J3**  
0° Port

**J4**  
Isolated Port

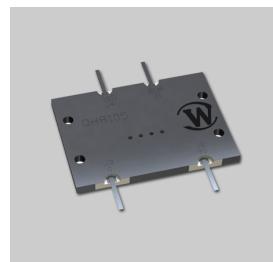
**Werlatone's** breakthrough technology allows us to build our existing line of Broadband 3 dB High Power 90° Hybrid Couplers. Connectorized 3 dB 90° Hybrid Coupler models are available with a choice of connectors. Several of our existing High Power 3 dB 90° RF Couplers are three port designs, wherein the difference port is internally terminated with a high power termination. This eliminates the need for a customer supplied external load for each Hybrid Coupler.



# WERLATONE

Model QH8105

90° Hybrids Surface Mount (SMT) & Drop

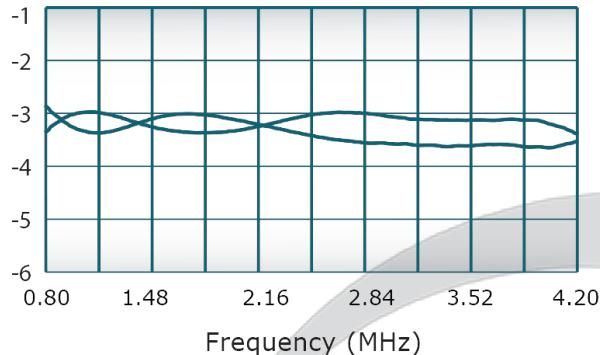


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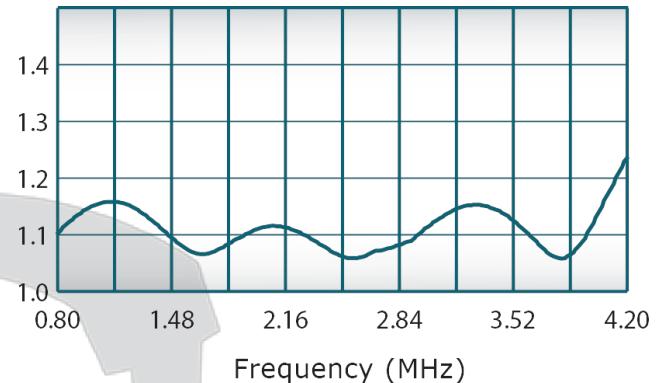
QH8105

### Performance Data (Specifications subject to change without notice):

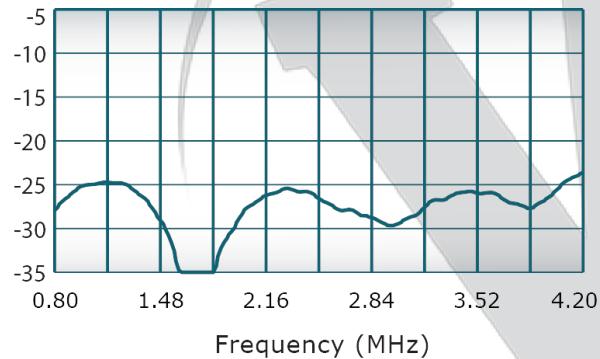
Coupling:



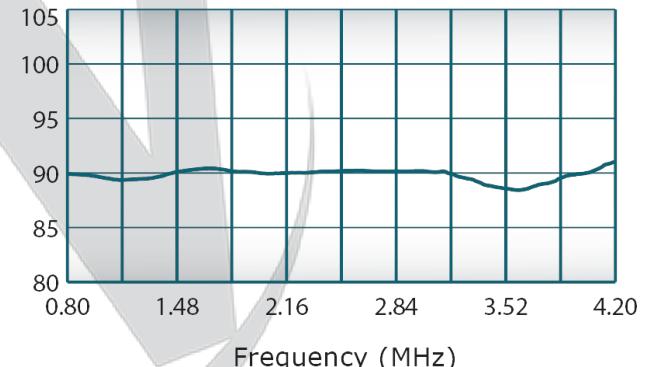
VSWR:



Isolation:



Phase Balance:



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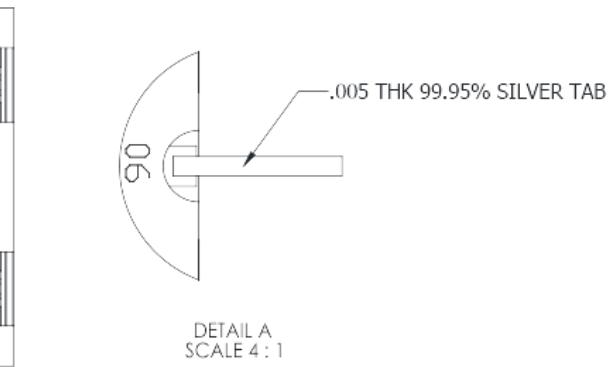
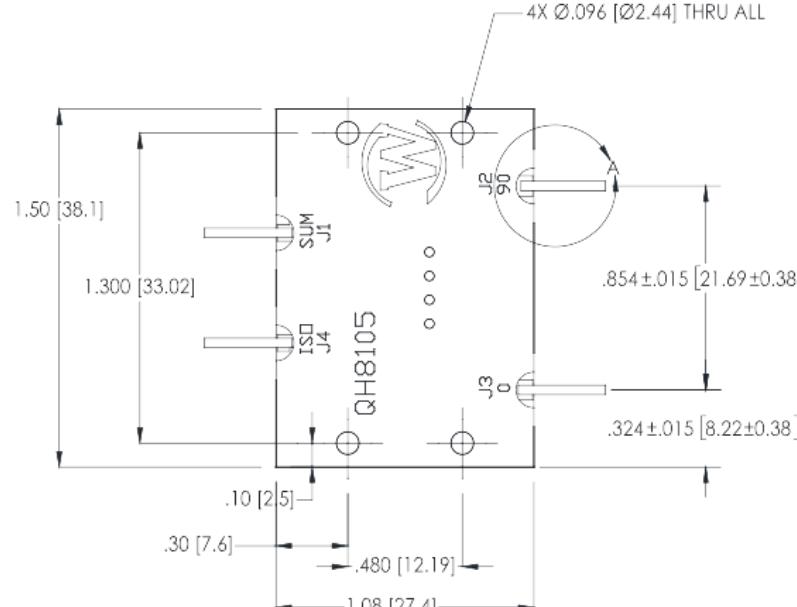
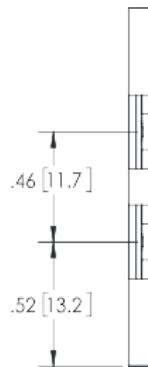
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**RESTRICTION ON USE, DUPLICATION OR  
DISCLOSURE OF PROPRIETARY INFORMATION**

REVISIONS			
REV.	REVISION RECORD	DATE	APPROVED
-	INITIAL RELEASE	10/19/2012	GP
A	ECN 7577	10/19/2012	GP
B	ECN 8213	6/6/2013	BW
C	ECN 10009	3/5/2021	BW

B

B



#### **ELECTRICAL SPECIFICATIONS:**

Frequency: 0.8 - 4.2 GHz  
 Power: 150 Watts CW  
 Insertion Loss: 0.55 dB Max.  
 Amplitude Balance:  $\pm 0.5$  dB Max.  
 Phase Balance:  $90^\circ \pm 5^\circ$  Max. (J2-J3)  
 VSWR: 1.35:1  
 Isolation: 18 dB Min.  
 Operating Temperature: -55°C To +85°C

**NOTES: UNLESS OTHERWISE SPECIFIED**

1. 4X LEADS/TABS SHOULD BE SOLDERED TO 50 Ω TRANSMISSION LINES.
2. BODY OF PART IS GND AND IS A SOLDERABLE SURFACE.

### 3. ORDERING INFORMATION:

QH8105-PB-1

Surface Finish  
Pb: ED Tin/Lead  
Ag: Immersion Silver  
Sn: Immersion Tin  
Au: ENIG

-T: RF TABS / LEADS  
BLANK: NO TABS, SOLDER PAD.

CREATE CAVITY IN PCB AND MOUNT THIS SURFACE TO HEATSINK. LEADS SHOULD BE ON SAME PLANE AS MICROSTRIP TRACE.  
ALTERNATIVELY, THIS SURFACE COULD BE SOLDERED TO A GND PLANE ON PCB WITH THERMAL VIA ARRAY.

		UNLESS OTHERWISE SPECIFIED	10IN	DATE			17 Jon Barrett Rd
		• INTERFAC DRAWING 3400-00000000	GP	10/19/2012		WERLATON SINCE 1965	Patterson, NY 12563
		• DIMENSIONS ARE IN MM	CPK	DATE	TITLE		
		• PARENTHESES INDICATE FOR REF ONLY			QH8105 -3dB Hybrid Coupler		
		• DIMENSIONS ARE IN INCHES					
		• TOLERANCES: .005	ENG/R	DATE			
		ANGLES: +2°	MEGR	DATE			
		2 PL. & 20°					
		• ENDS OF ALL BURRS ARE SHARP EDGES E10.2 MAX			SIZE	CAGE CODE	QNG NO
		• CONCENTRICITY: PARALLELISM DUL. 4000 FOR	QA	DATE			
		MACH-TOL. REINFORCING DUL. 2000 MAX					
NEXT ASSY	USED ON	APPLICATION	1/2IN	DATE	REV		
		THIRD ANGLE PROJECTION	1/2IN	SCALE	C		
			2:1				