

90° Hybrid, 4-8GHz, SMA Female

WMQH-4-8-S

Key Features

- Octave band.
- High isolation.
- Excellent return loss.
- Low unbalance.

WMQH-4-8-S is a 90-degree hybrid that covers C band applications in an aluminum enclosure measuring 1.00 x 0.50 x 0.38 inches. The 4-8GHz frequency response has typical 23dB isolation between outputs, and 1.15:1 typical VSWR. Werbel's unique approach to stripline devices allows for tight phase balance in production quantities with minimal time to delivery. Assembled and tested in USA.



Photo is representative.

Specifications	Min.	Typ.	Max.	Units
Frequency	4	--	8	GHz
Impedance	--	50	--	Ohm
Phase Difference	--	90	--	Degrees
Total Loss ¹ (J1-J3 and J1-J4)	--	3.2±0.4	±0.9	dB
Isolation	16	23	--	dB
Return Loss (all ports)	17	24	--	dB
Amplitude Balance	--	0.43	1.4	dB
Phase Balance (±)	--	1.85	4.0	Degrees
Input Power (CW) ²	--	--	50	Watts

Mechanical

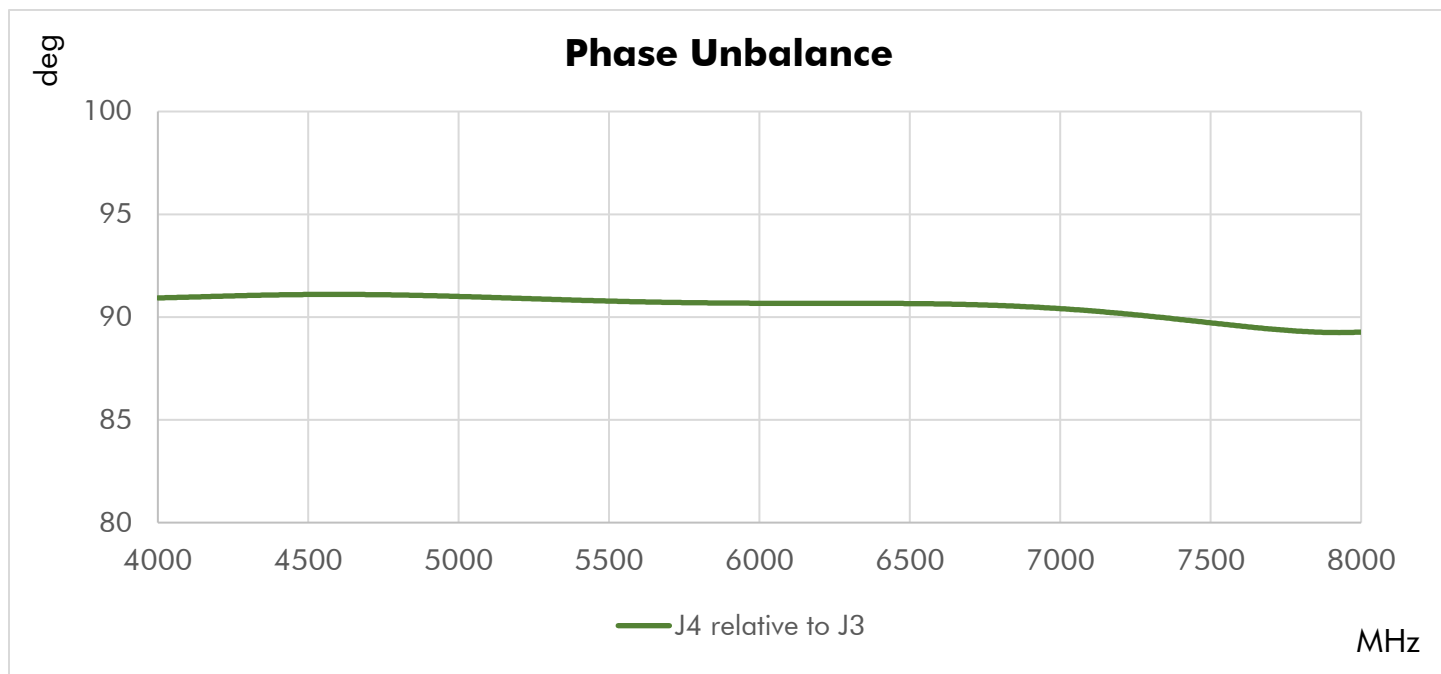
Connector Interface	SMA-Female
Operating Temperature ³	-40 to +85 °C
Storage Temperature	-55 to +100 °C
Weight	0.6 oz (16.7 g)
Humidity	10-90% non-condensing
Environment	Indoor Use Only

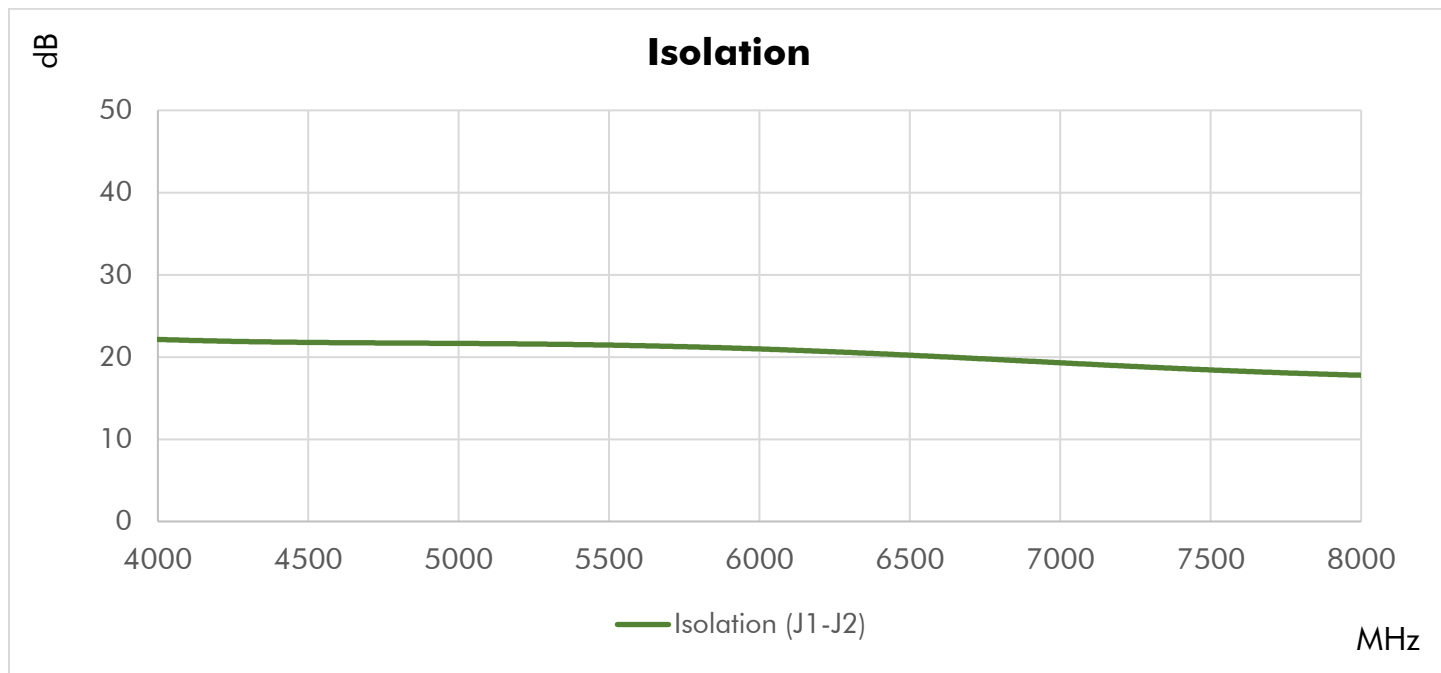
1. Total Loss includes insertion loss and frequency sensitivity.
2. All output ports should be terminated in a 50-ohm load with 1.2:1 max VSWR.
3. Specifications are at +25°C.
4. To the best of our knowledge at the time of publication.

Materials

RoHS and REACH Compliant ⁴	
Enclosure	Aluminum
Connectors	Stainless Steel
Contacts	Be Cu, Gold Plated
Insulators	PTFE
Finish	Green Paint

Typical Performance at +25 °C

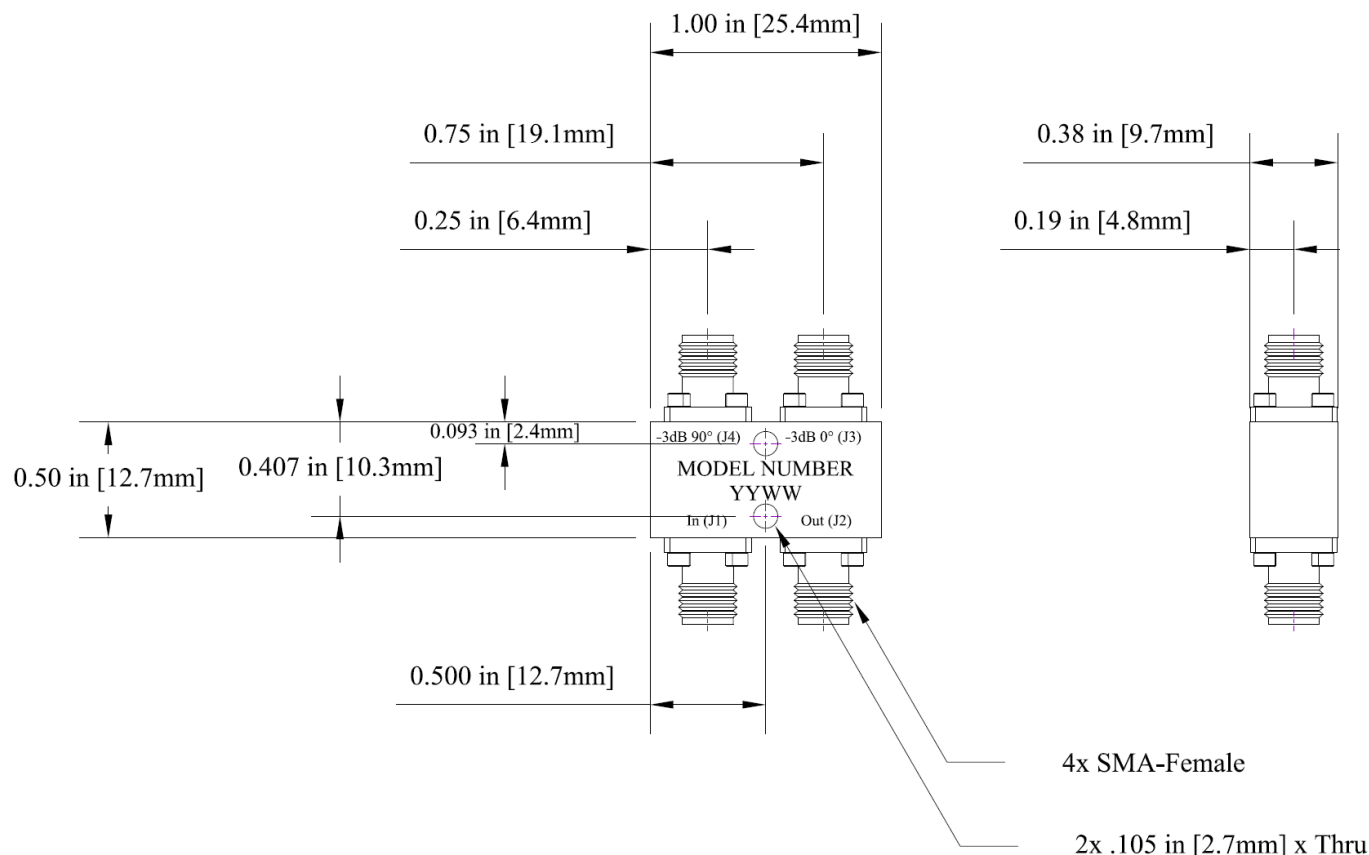




Typical Performance at +25 °C

Frequency (MHz)	Insertion Loss (dB) J1-J3	Coupling (dB) J1-J4	Amplitude Unbalance (dB)	Phase Unbalance (deg)	Isolation (dB) J1-J2	Return Loss (dB) J1
4000	2.6	3.3	0.7	90.3	22.1	21.4
4200	3.1	3.3	0.3	89.9	21.9	23.6
4400	3.1	3.2	0.1	89.6	21.8	23.5
4600	3.2	3.1	0.1	90.4	21.8	23.0
4800	3.3	3.1	0.2	89.8	21.7	23.8
5000	3.3	3.0	0.4	89.6	21.6	23.9
5200	3.5	3.0	0.6	90.2	21.7	23.1
5400	3.5	2.9	0.6	88.8	21.5	23.2
5600	3.6	2.9	0.7	89.1	21.4	23.5
5800	3.7	2.9	0.8	89.2	21.3	23.2
6000	3.6	2.8	0.8	89.1	21.0	22.3
6200	3.6	2.8	0.8	89.0	20.7	23.1
6400	3.5	2.8	0.7	88.9	20.3	22.6
6600	3.5	2.8	0.7	89.0	20.0	22.3
6800	3.2	2.6	0.6	89.0	19.4	22.1
7000	3.5	2.8	0.6	88.4	19.2	22.0
7200	3.6	3.1	0.5	87.7	19.1	21.7
7400	3.4	3.0	0.4	87.7	18.6	21.5
7600	3.6	3.3	0.4	86.7	18.4	21.3
7800	3.6	3.5	0.1	86.4	18.4	21.7
8000	3.2	3.3	0.1	86.8	17.8	21.5

Outline Dimensions



Outline # OL-Q0408

Dimensions are in inches, [mm] shown for convenience.

Tolerances on 2-pl decimals: $\pm .03$. 3-pl decimals: $\pm .015$.

Port Configuration

		OUTPUT			
		J1	J2	J3	J4
INPUT	J1	--	ISO	0°	+90°
	J2	ISO	--	+90°	0°
	J3	0°	+90°	--	ISO
	J4	+90°	0°	ISO	--

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