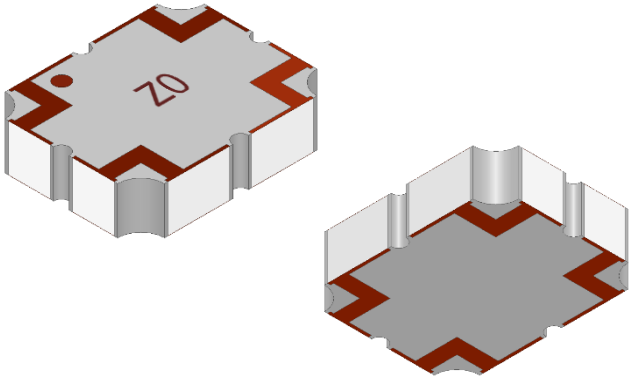
700 – 1000 MHz High Power 90deg Hybrid RF Coupler

- For wireless applications, such as LTE/4G/5G/DCS/AMPS
- Ideal for base stations
- High power, 300 Watts
- Surface Mount Device



General Specifications[1] [2]

Passband Frequency (MHz)	700 – 800	800 - 1000
Insertion Loss (dB)	0.14 Max.	
Return Loss (dB)	23 Min.	
Isolation (dB)	23 Min.	
Phase Deviation (degrees)	90 ± 3	
Amplitude Balance (dB)	0.4 Max.	0.3 Max.

Maximum Ratings

Power Capacity (W)	300 Max. (CW)
Operating Temperature (°C)	-55 to +125
Recommended Storage Conditions post-installation (°C)	-40 to +85
Recommended Storage Conditions and Period for Unused T&R Product	45% - 75% RH +5 to +35 °C 18 Months Max.

[1] Typical value represents average measurement at 25°C. Min./Max. values represent measurements over specified operating temperature.
[2] General specifications measured on Johanson's evaluation board P/N 0850HC47A0300001CE1.

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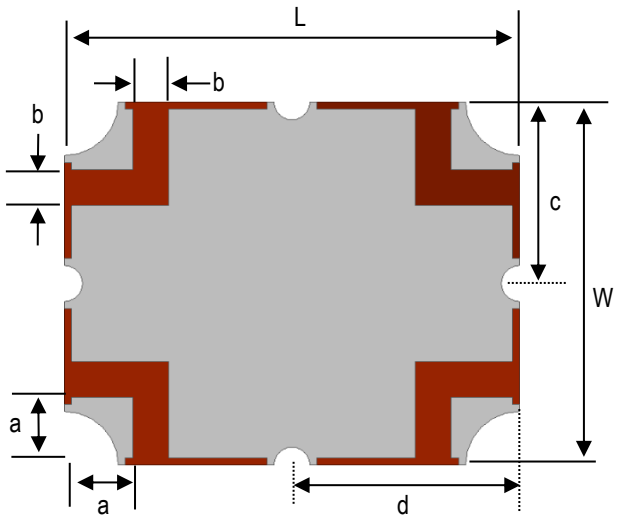
Mechanical Dimensions

	Inches			Millimeters		
L	0.250	±	0.010	6.35	±	0.25
W	0.200	±	0.010	5.08	±	0.25
T	0.059	±	0.004	1.50	±	0.10
a	0.040	±	0.004	1.01	±	0.10
b	0.020	±	0.004	0.51	±	0.10
c	0.100	±	0.004	2.54	±	0.10
d	0.125	±	0.004	3.18	±	0.10

Bottom view

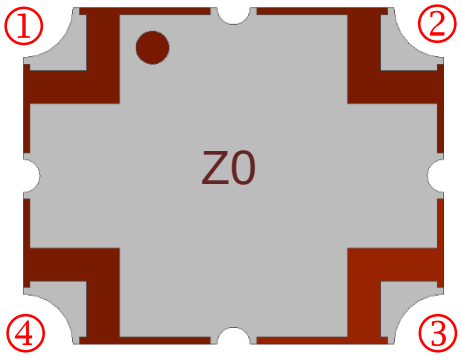


Side view

Terminal Configuration[3]

Pin Number	Function
1	Input
2	Termination
3	Main Output
4	Coupled Output

Top view



[3] The termination type is Nickel Tin. Go to: https://www.johansontechnology.com/ipcsoldering-profile for Typical Soldering Profile.

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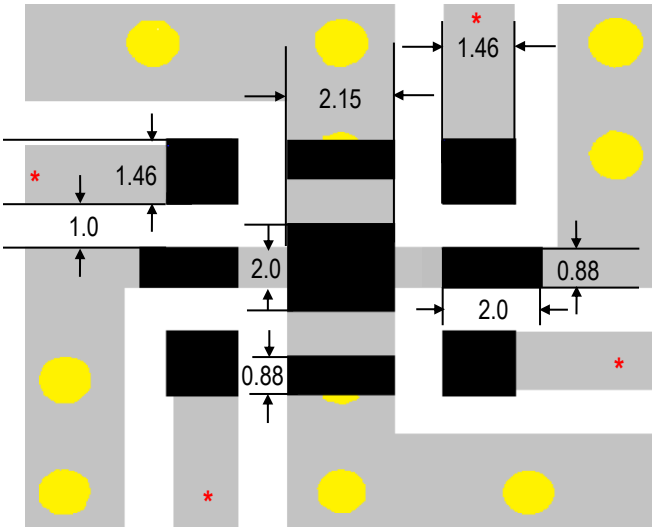
PCB Layout



Units in mm

Solder Resist

Land

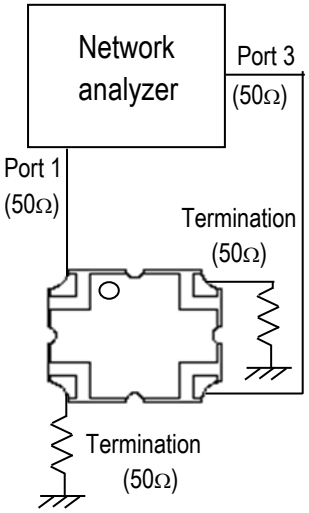
Through-hole (ϕ 1.0)

* Transmission line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

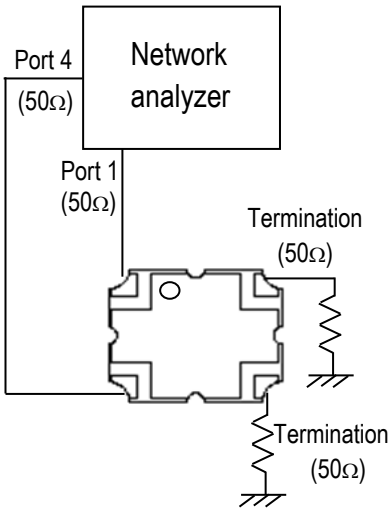
If you would like the CAD PCB layout or have any technical questions,
please contact our application engineers at https://www.johansontechnology.com/ask-a-question

Measuring Diagram

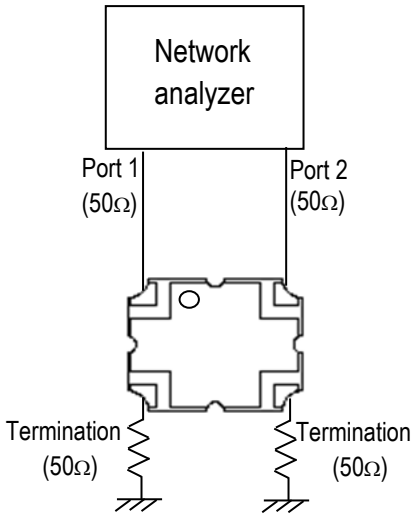
Main Out path Loss (S13)



Coupled Out path Loss (S14)



Isolation



Amplitude Balance, Phase Deviation, Insertion Loss

Amplitude_Balance = (dB(S14)-dB(S13))/2

Phase_Deviation = Phase(S13) - Phase(S14)

Insertion_Loss = $10*\log_{10}(|S13|^2+|S14|^2)$

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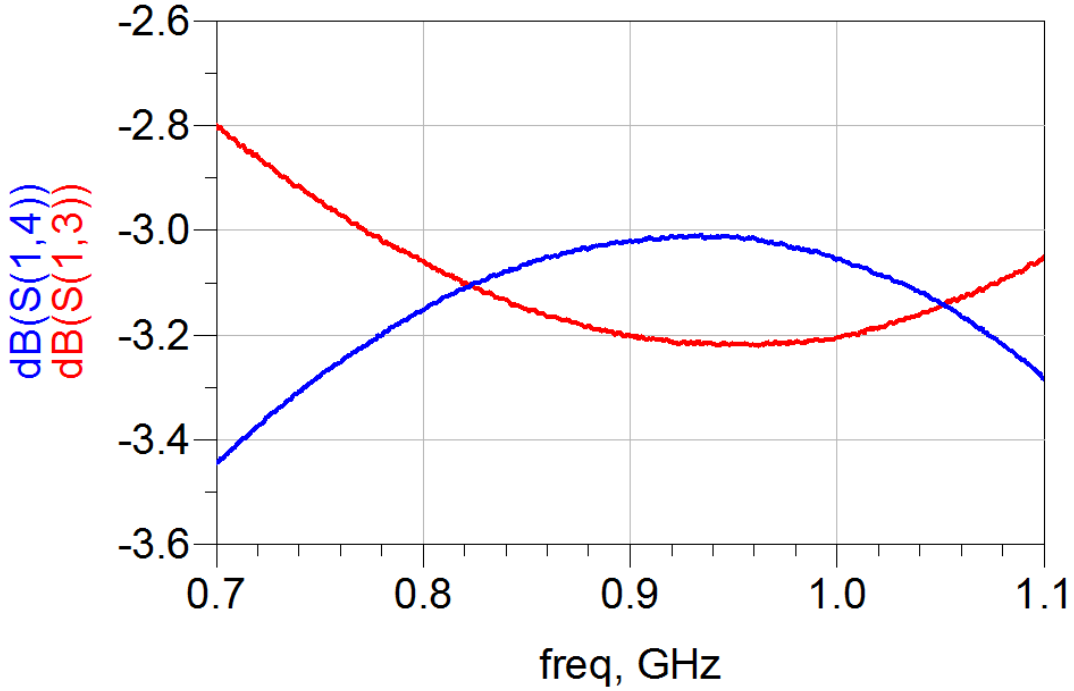
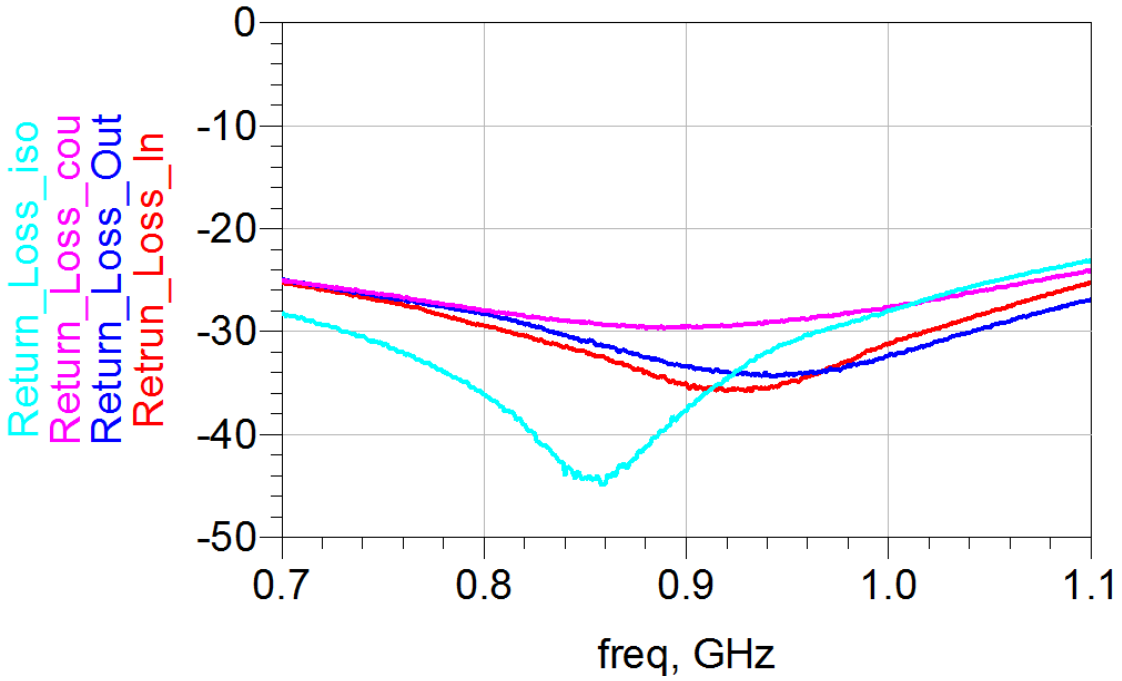
RF Measurements (T = 25°C)

Insertion Loss (Main output, coupled output)



Return Loss



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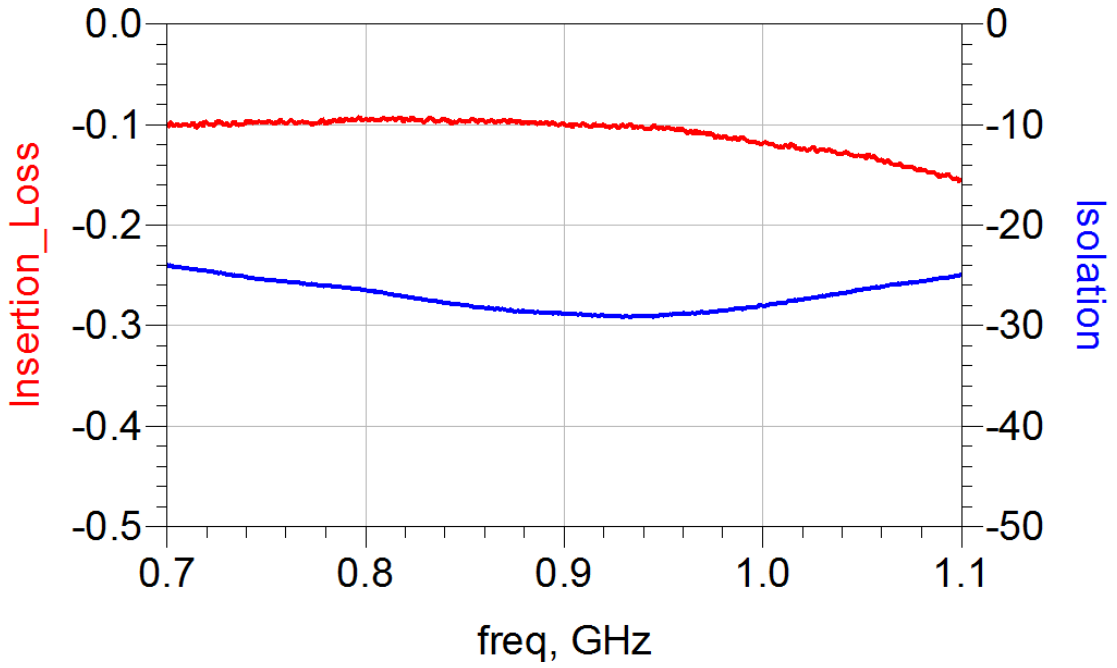
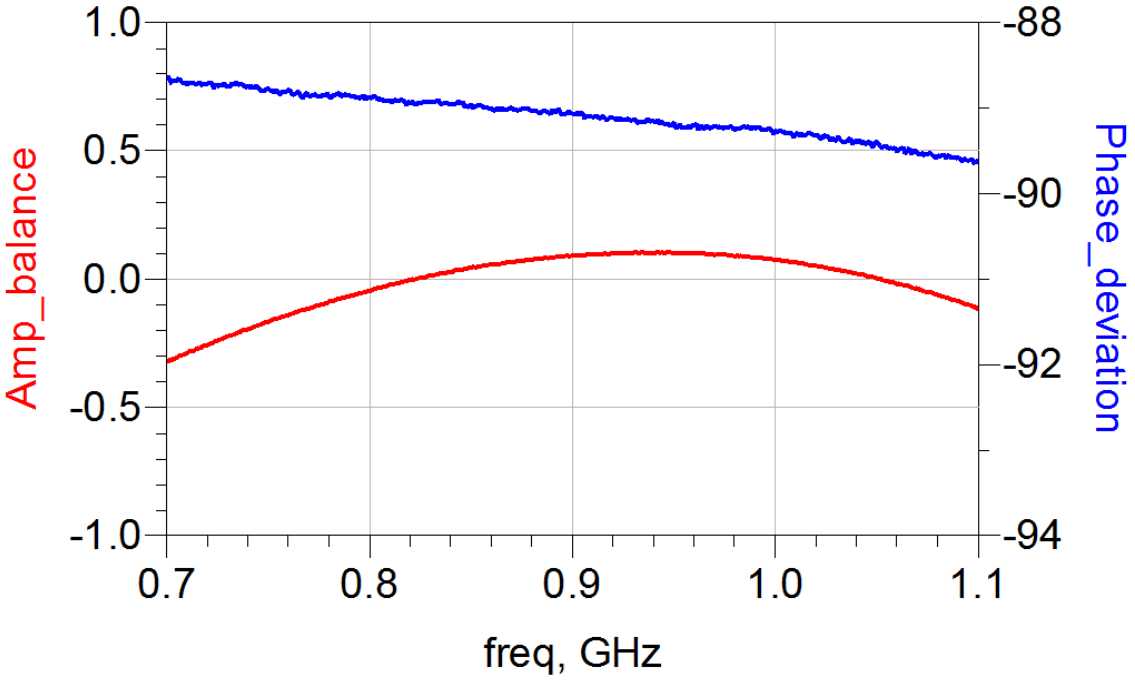
RF Measurements (Continued)

Insertion Loss and Isolation



Amplitude Balance and Phase Deviation (Main output / Coupled output)



S-parameter and layout file available upon request. Please contact us at https://www.johansontechnology.com/ask-a-question

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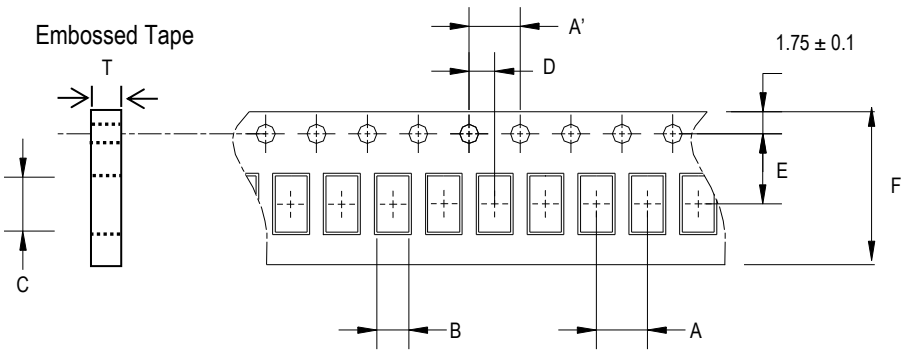
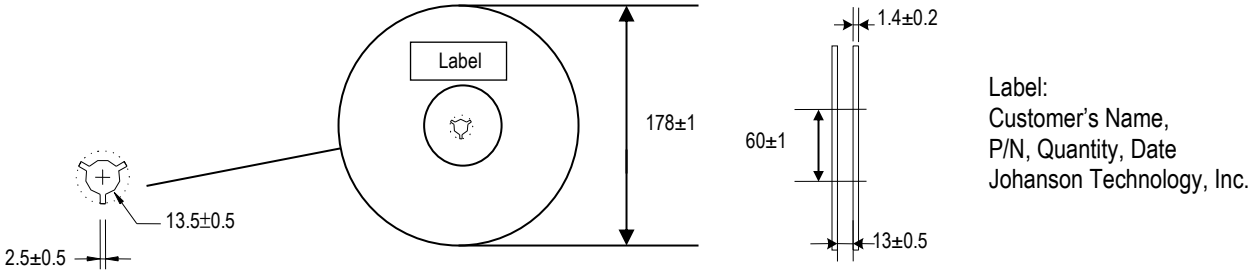
Tape and Reel Specification (Units in mm)

Tape Dimensions

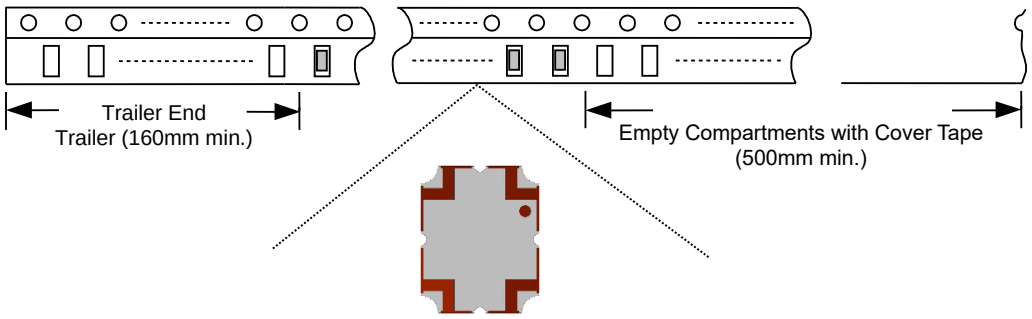


A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
8.0±0.1	4.0±0.1	5.3±0.1	6.55±0.1	2.0±0.1	5.5±0.1	12.0±0.15	1.7±0.10	1,000pcs	Plastic (Embossed)

Reel Dimensions



Leader and Trailer Tape



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Orderable Part Numbers

Packaging Style	Part Number	Termination
Bulk (loose pcs.)	0850HC47A0300001B	Nickel Tin
T & R (7" Reel Embossed Tape)	0850HC47A0300001E (Qty: 1,000 pcs/reel)	
Evaluation Board with 4 SMA Connector	0850HC47A0300001CE1	

Important Links

0850HC47A0300001E Product Page

More Couplers

Soldering Information

MSL Information

Packaging Information

Recommended Storage Condition and Max Shelf Life

RoHS Compliance

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