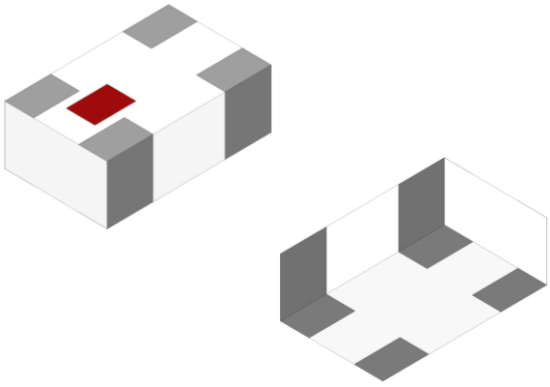
1.575 GHz 90° Hybrid Coupler

- 1560 – 1590 MHz passband
- GNSS L1/B1/E1 receivers
- SMD, EIA 0805
- RoHS compliant



General Specifications[1] [2]

Passband Frequency (MHz)	1560 - 1590
Insertion Loss (dB)	3.3 ±0.5
Return Loss (dB)	10 Min.
Amplitude Balance (dB)	1.0 Max
Phase Deviation (degrees)	90 ±3
Isolation (dB)	16 Min.

Maximum Ratings

Power Capacity (W)	3 Max. (CW)
Operating Temperature (°C)	-40 to +85
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 PN 1575CH15A0030001CE1.

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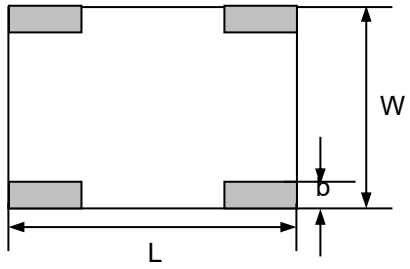
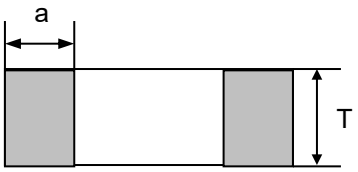
Mechanical Dimensions

	Inches			Millimeters		
L	0.079	±	0.004	2.0	±	0.1
W	0.049	±	0.004	1.25	±	0.1
T	0.028	±	0.004	0.7	±	0.1
a	0.022	±	0.010	0.56	±	0.25
b	0.014	±	0.006	0.35	±	0.15

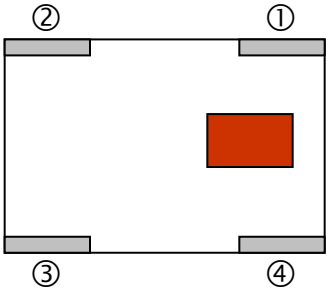
Bottom view



Side view



Top view



Terminal Configuration[3]

Pin Number	Function
1	TERMINATION
2	INPUT
3	OUTPUT2
4	OUTPUT1

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

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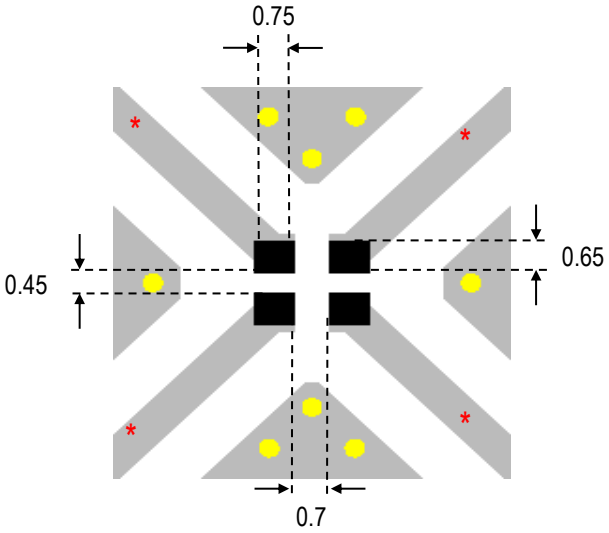
Recommended PCB Layout



Units in mm

Solder Resist

Land

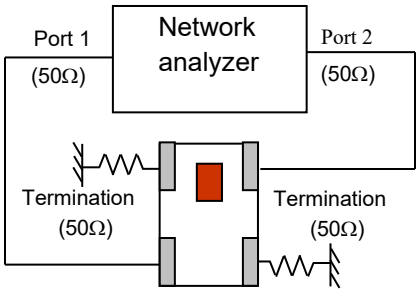
Through-hole (ϕ0.35)

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

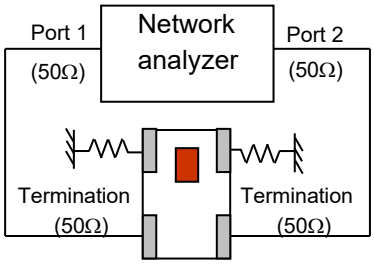
If you would like the full reference design package or have any questions,
contact our application engineers at https://www.johansontechnology.com/ask-a-question

Measuring Diagram

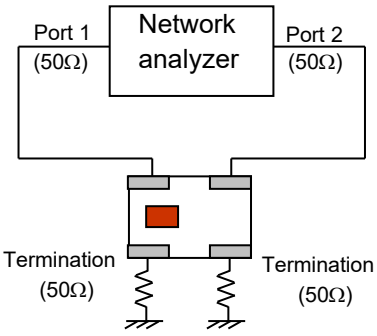
Insertion Loss 1 & Return Loss



Insertion Loss 2 & Return Loss



Isolation



Amplitude Balance & Phase Deviation

Amp_Balance = dB(I.L.1) - dB(I.L.2)

Phase_Deviation = Phase(I.L.1) - Phase(I.L.2)

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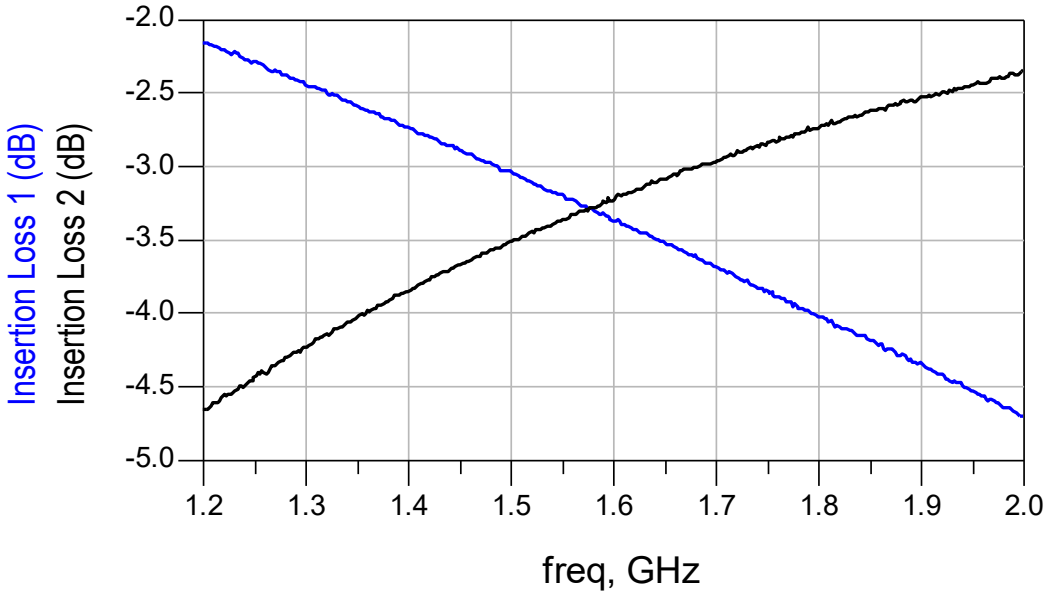
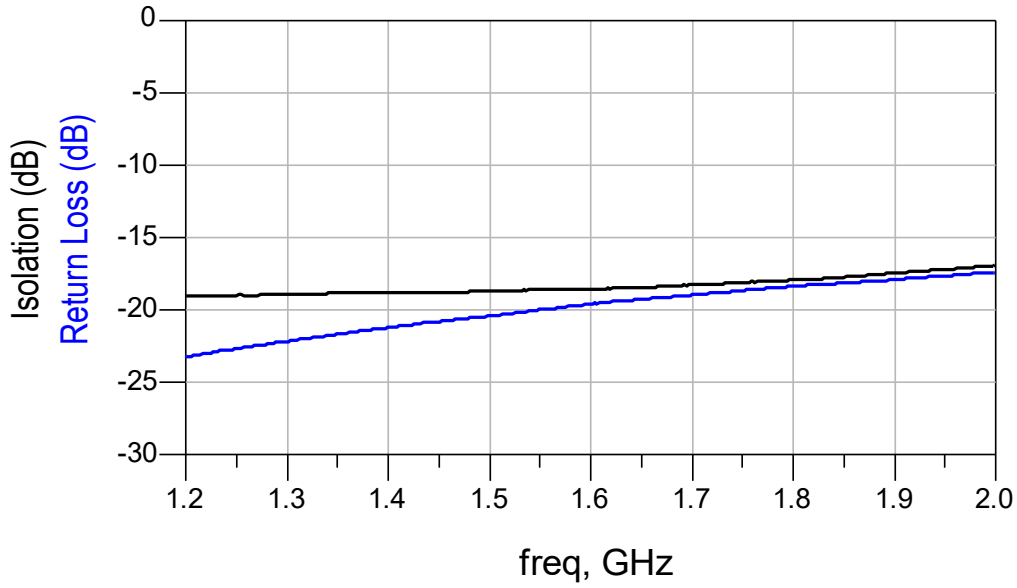
RF Measurement

Insertion Loss 1 & 2



Return Loss and Isolation



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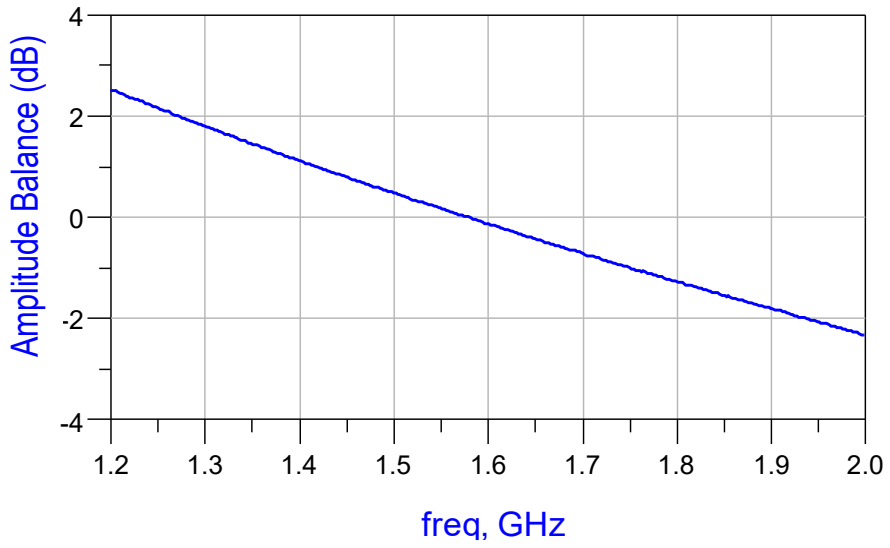
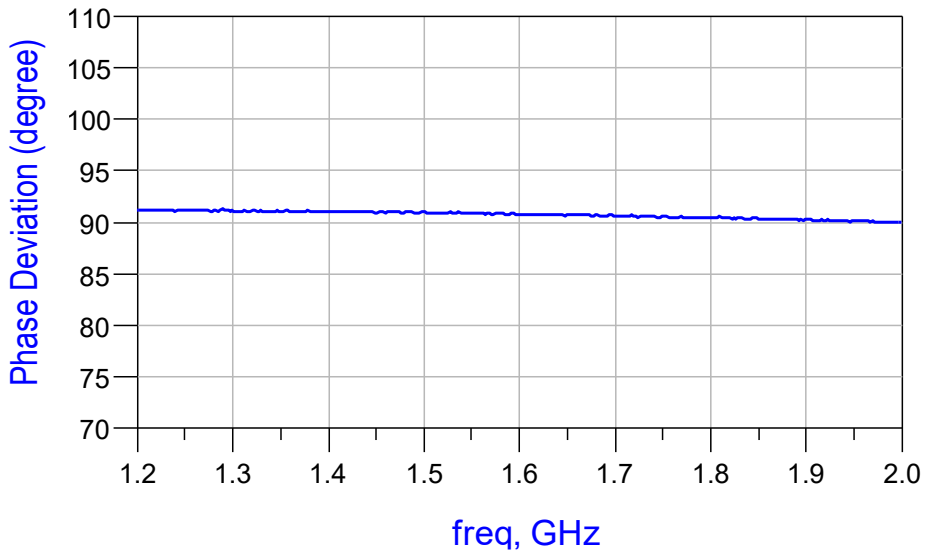
Amplitude Balance



Phase Deviation



S-parameter and layout file available upon request, contact our application engineers at https://www.johansontechnology.com/ask-a-question

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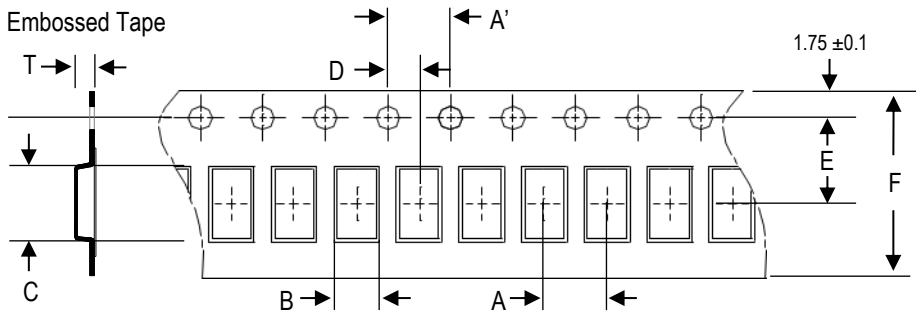
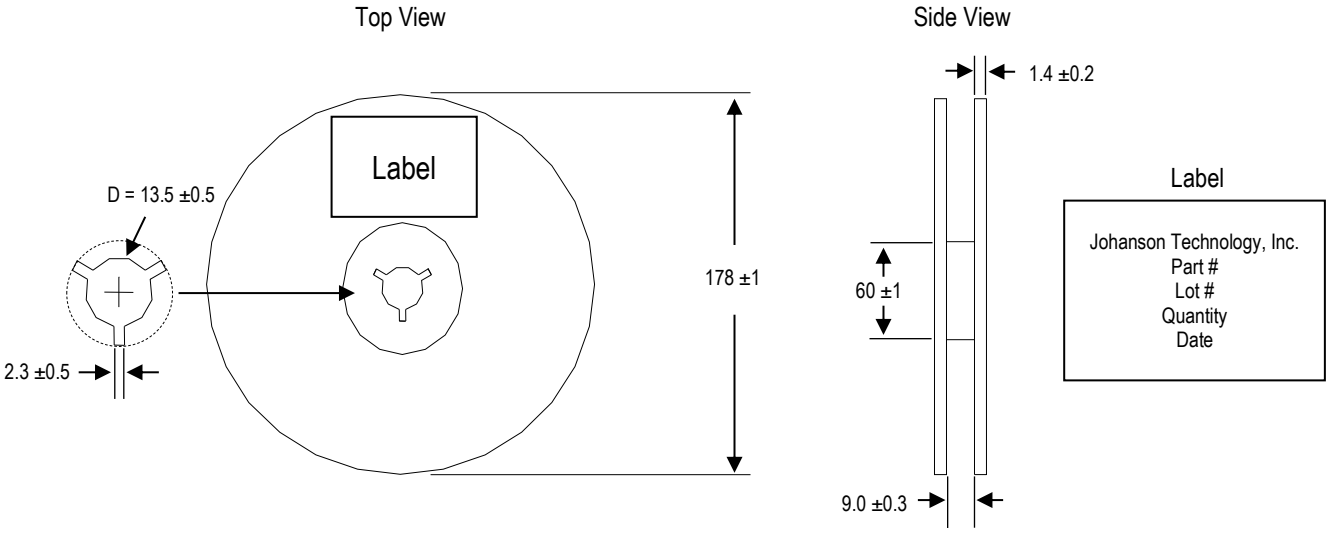
Tape and Reel Specifications (Units in mm)

Tape Dimensions

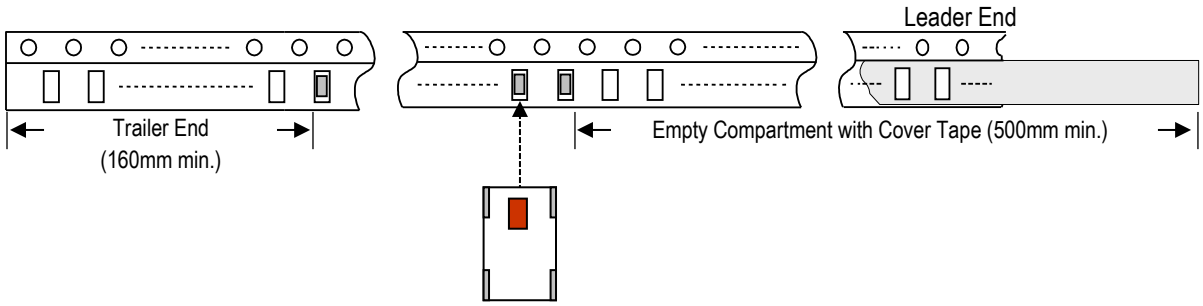


A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
4.0 ±0.1	4.0 ±0.1	1.35 ±0.05	2.15 ±0.05	2.0 ±0.05	3.5 ±0.1	8.0 ±0.1	1.0 ±0.05	4,000pcs.	Plastic (Embossed)

Reel Dimensions



Leader and Trailer Dimensions



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Orderable Part Numbers

Packaging Style	Part Number	Termination
Bulk (loose pcs.)	1575CH15A0030001B	Nickel Tin
T & R (7" Reel Embossed Tape)	1575CH15A0030001E (Qty: 4,000 pcs./reel)	
Evaluation Board with 4 SMA Connector	1575CH15A0030001CE1	

Important Links

1575CH15A0030001E Product Page

More Couplers

Antenna Tuning, Optimization, and Validation Services

Soldering Information

MSL Information

Packaging Information

Recommended Storage Condition and Max Shelf Life

RoHS Compliance

Contact our application engineers for a PCB layout review.

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