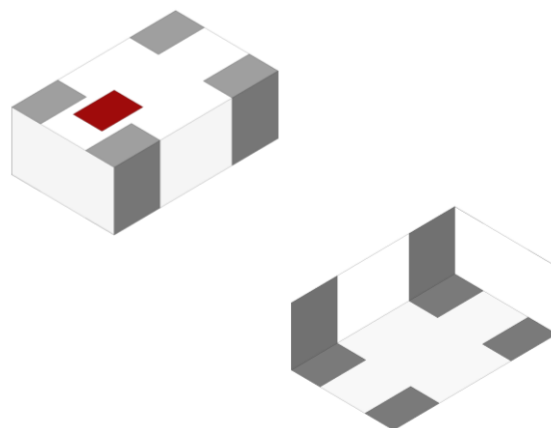




2450 MHz 90° Hybrid Coupler, AEC-Q200

- 2400 – 2500 MHz passband
- Bluetooth, WiFi, Zigbee, ANT+, Zigbee, Channel Sounding, ISM, MIMO, AoA/D, LoRa, Thread
- Works well with 2.4GHz RHCP antenna p/n: 2440AT62B0085002U
- SMD, EIA 0805
- RoHS compliant



General Specifications¹

Passband Frequency (MHz)	2400 - 2500
Insertion Loss (dB)	3.5 ±0.5
Return Loss (dB)	14 Min.
Amplitude Balance (dB)	1.0 Max
Phase Deviation (degrees)	90 ±3
Isolation (dB)	15 Min.

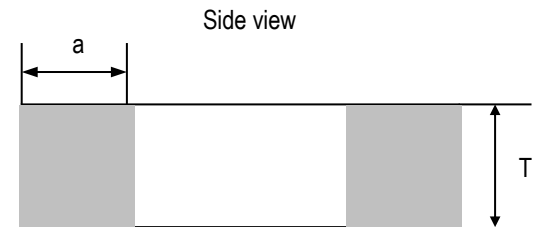
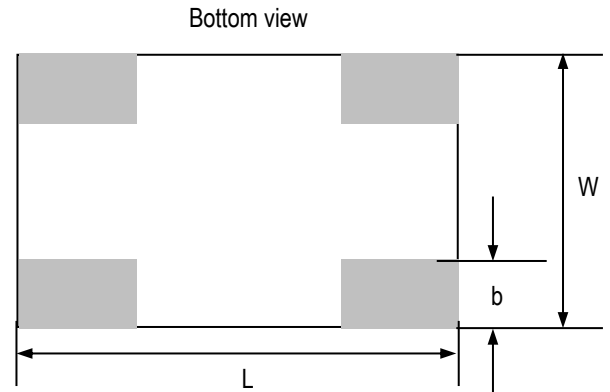
Maximum Ratings

Power Capacity (W)	3 Max. (CW)
Operating Temperature (°C)	-40 to +105
Recommended Storage Conditions post-installation (°C)	-40 to +105
Recommended Storage Conditions and Period for Unused T&R Product	45% - 75% RH +5 to +35 °C 18 Months Max.

¹ General specifications measured on Johanson's evaluation board P/N 2450CH15A0100001CE1.

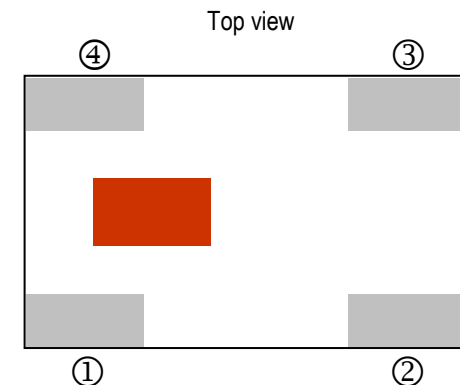
Mechanical Dimensions

	Inches			Millimeters		
L	0.079	±	0.004	2.00	±	0.10
W	0.049	±	0.004	1.25	±	0.10
T	0.028	±	0.004	0.70	±	0.10
a	0.022	±	0.010	0.56	±	0.25
b	0.014	±	0.006	0.35	±	0.15



Terminal Configuration^{2 3}

Pin Number	Function
1	Termination (50Ω)
2	In (Input)
3	Out2 (90°)
4	Out1 (0°)

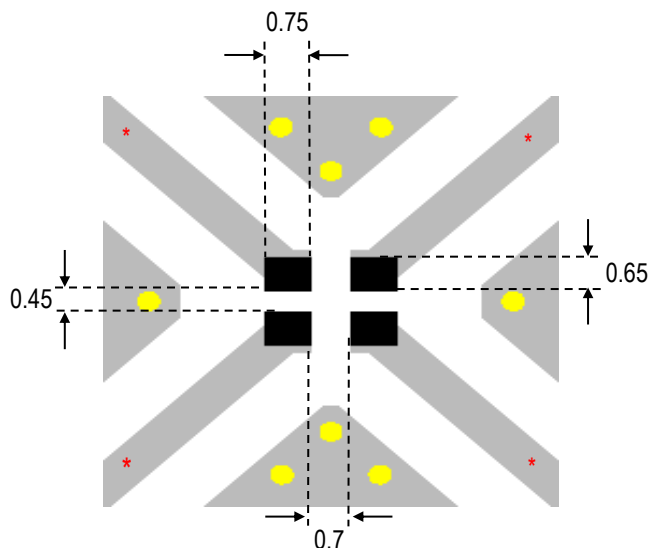


If you'd like the CAD PCB layout, s-parameters, or have any questions,
contact our application engineers at <https://www.johansontechnology.com/ask-a-question>

² The termination type is Nickel Tin. Go to: <https://www.johansontechnology.com/tech-notes/typical-soldering-profile-ipc> for Typical Soldering Profile..

³ This is a bi-directional device.

Recommended PCB Layout



Units in mm

Solder Resist

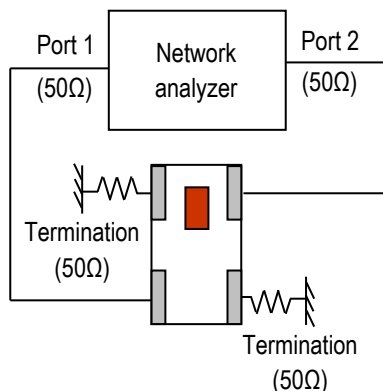
Land

Through-hole ($\phi 0.35$)

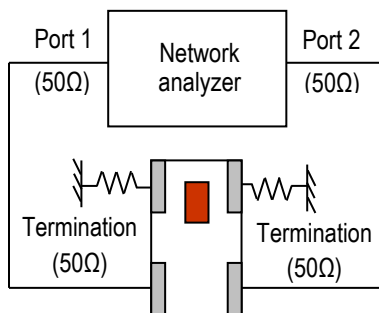
* Transmission line width should be designed to match 50 Ω characteristic impedance, depending on PCB material and thickness.

Measuring Diagram

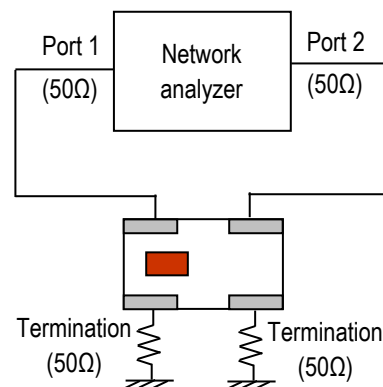
Insertion Loss 1 and Return Loss



Insertion Loss 2 and Return Loss



Isolation



Amplitude Balance & Phase Deviation

$$\text{Amplitude Balance} = \text{dB(I.L.1)} - \text{dB(I.L.2)}$$

$$\text{Phase Deviation} = \text{Phase(I.L.1)} - \text{Phase(I.L.2)}$$

S-Parameter Port# Designation to 2450CH15A0100002E component Pin#

Port1 (of s-parameter) connects to pin2 (of 2450CH15A0100002E)

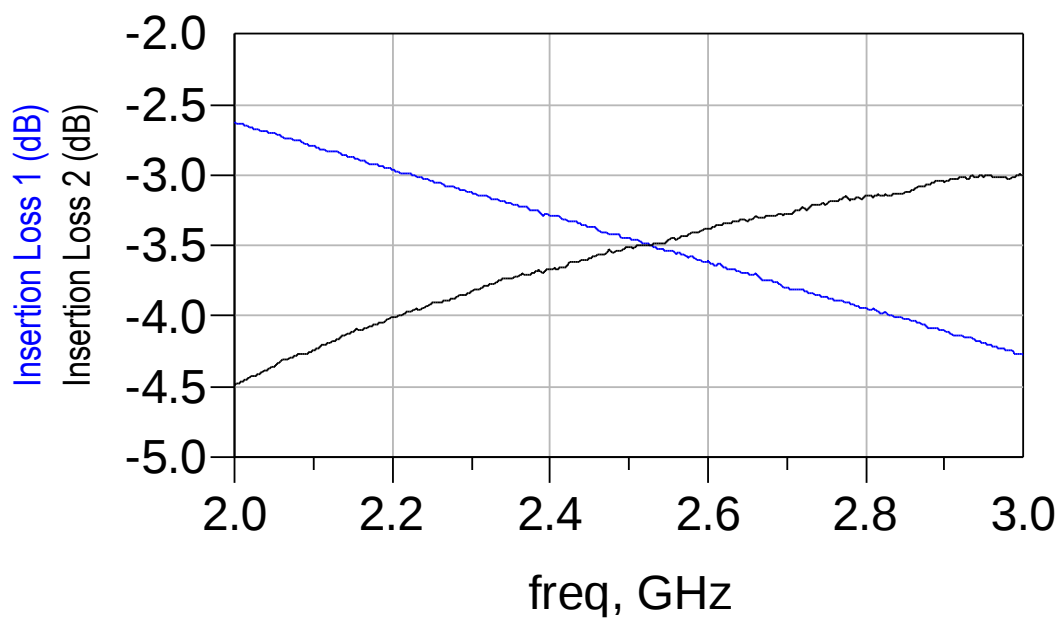
Port2 (of s-parameter) connects to pin1 (of 2450CH15A0100002E)

Port3 (of s-parameter) connects to pin4 (of 2450CH15A0100002E)

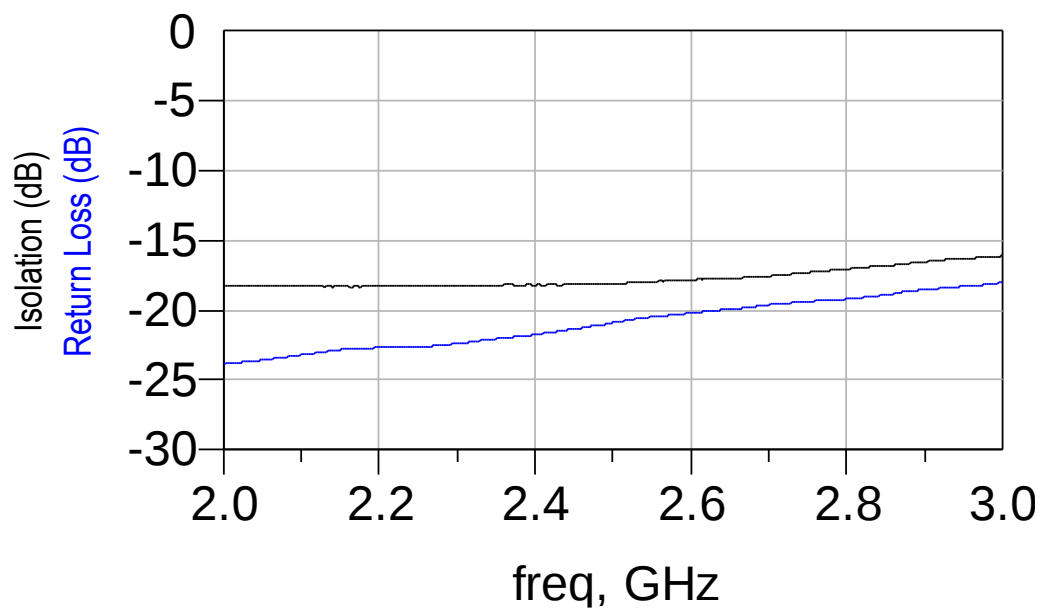
Port4 (of s-parameter) connects to pin3 (of 2450CH15A0100002E)

RF Measurements (T = 25°C)

Insertion Loss 1 & 2



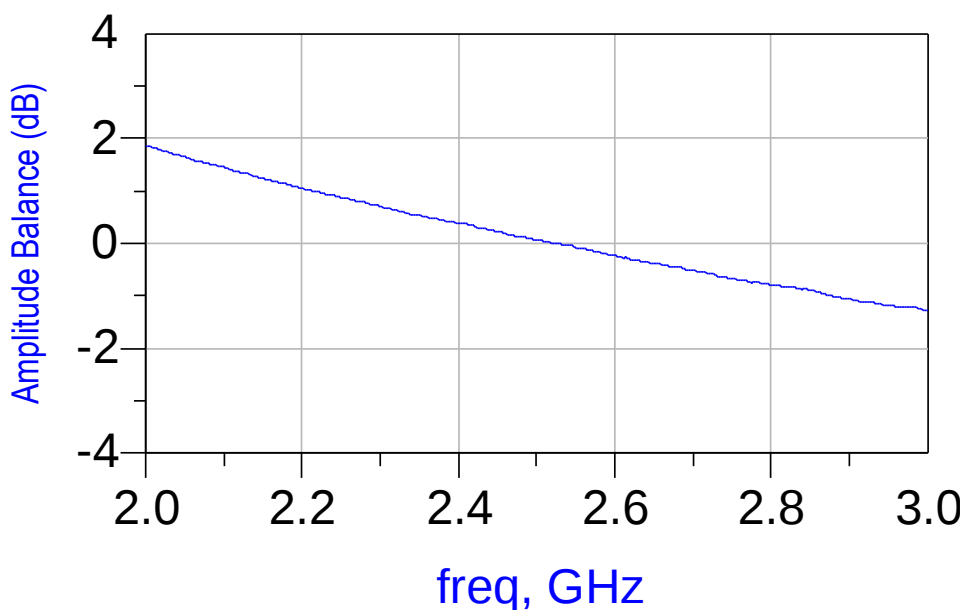
Return Loss and Isolation



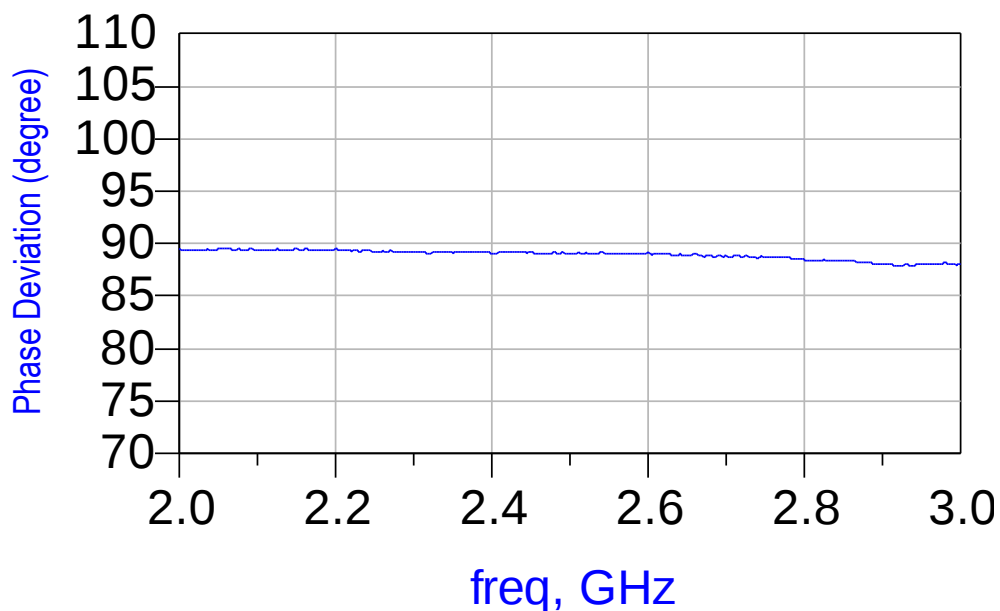


RF Measurements (T = 25°C)

Amplitude Balance



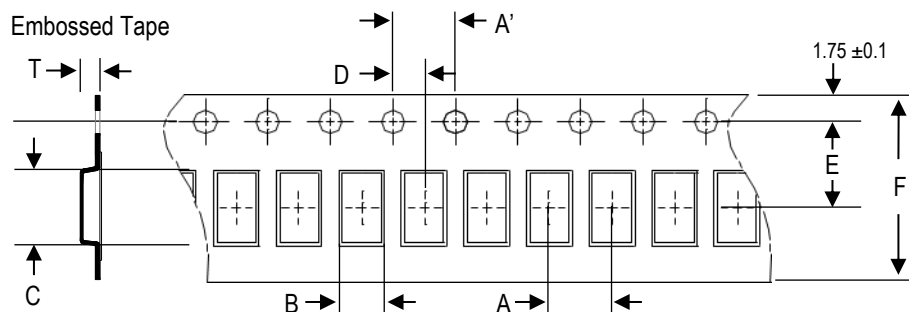
Phase Deviation



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

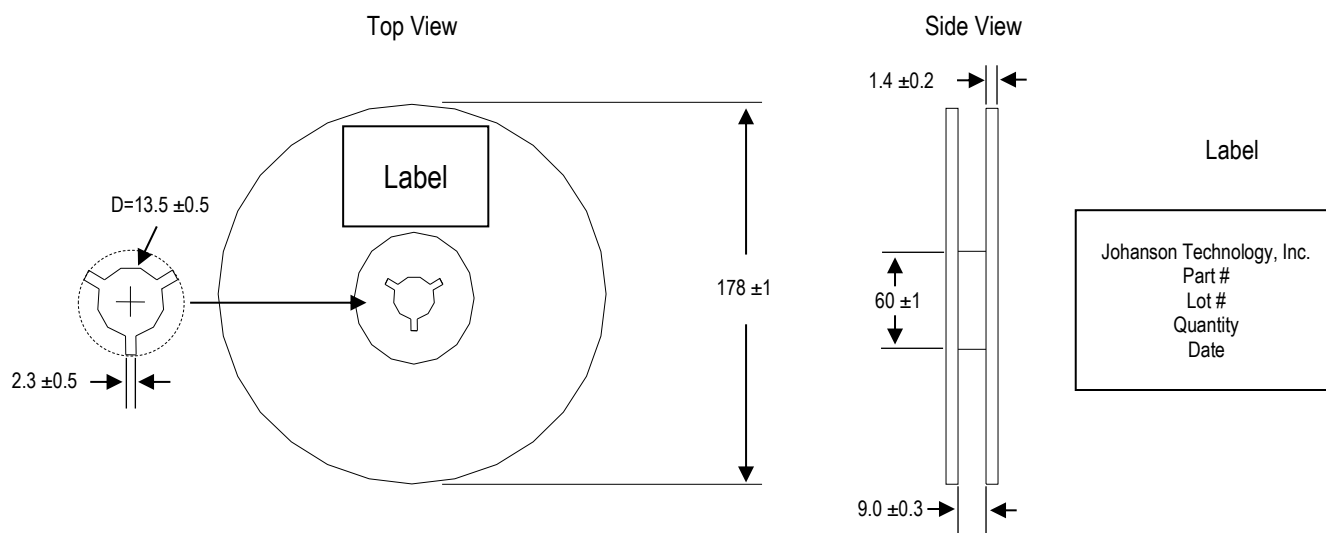
Tape and Reel Specification (Units in mm)

Tape Dimensions

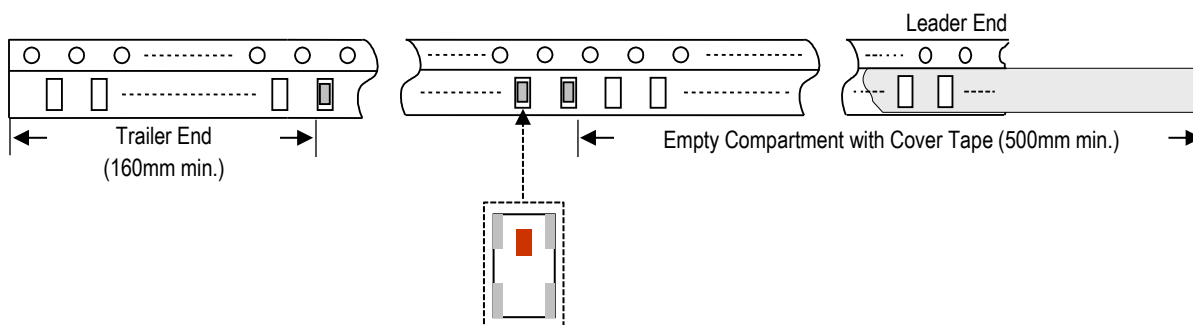


A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
4.0 ±0.1	4.0 ±0.1	1.35 ±0.05	2.15 ±0.05	2.0 ±0.05	3.5 ±0.1	8.0 ±0.1	1.0 ±0.05	4,000pcs.	Plastic (Embossed)

Reel Dimensions



Leader and Trailer Dimensions



Orderable Part Numbers

Packaging Style	Part Number	Termination
Bulk (loose pcs.)	2450CH15A0100002B	Nickel Tin
T & R (7" Reel Embossed Tape)	2450CH15A0100002E (Qty: 4,000 pcs/reel)	
Evaluation Board with 4 SMA Connector	2450CH15A0100001CE1	

Important Links

[2450CH15A0100002E Product Page](#)

[More RF Hybrid Couplers](#)

[RF Antennas](#)

[Soldering Information](#)

[MSL Information](#)

[Packaging Information](#)

[Recommended Storage Condition and Max Shelf Life](#)

[RoHS Compliance](#)

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