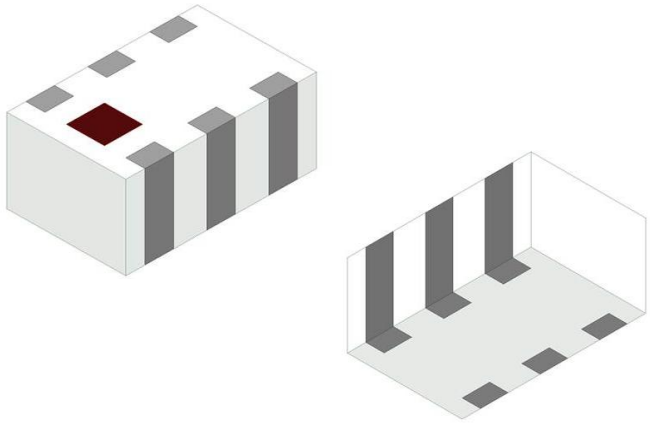
# 900 / 2450 MHz RF Diplexer

- 863 - 960 / 2400 - 2500 MHz operational bands
- Sub-GHz ISM, WiFi, Bluetooth, Zigbee, etc.
- SMD, EIA 0805
- RoHS compliant



## General Specifications[1] [2]

| Passband Frequency (MHz) | 863 - 960 | 1710 - 2700 |
|---|---|---|
| Insertion Loss (dB) | 0.57 Typ. (0.65 Max.) | 1.3 Typ. (1.4 Max.) |
| Return Loss (dB) | 9.5 Min. | 9.5 Min. |
| Attenuation (dB) | 27.5 Typ. (25 Min.)<br>@1726 - 1920 MHz | 22 Typ. (17 Min.)<br>@1850 - 1910 MHz |
| | 23 Typ. (17 Min.)<br>@2589 - 2880 MHz | 36.1 Typ. (20 Min.)<br>@4800 - 2500 MHz |
| | 14 Typ. (9 Min.)<br>@3452 - 3840 MHz | 17 Typ. (12 Min.)<br>@7200 - 7500 MHz |
| Isolation (dB) | 33 Typ. (30 Min.)<br>@2400 - 2500 MHz | 44 Typ. (35 Min.)<br>@863 - 960 MHz |

## Maximum Ratings

| | |
|---|---|
| Power Capacity (W) | 2 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<br>+5 to +35 °C<br>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 0900DP15A2450001CE1.



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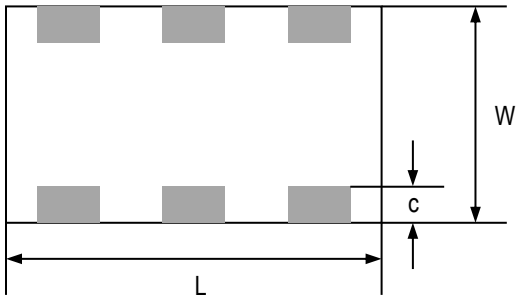
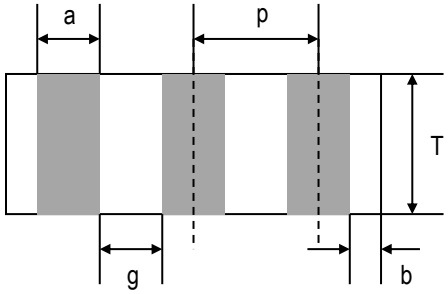
## Mechanical Dimensions

| | Inches | | | Millimeters | | |
|---|---|---|---|---|---|---|
| **L** | 0.079 | ± | 0.006 | 2.00 | ± | 0.15 |
| **W** | 0.049 | ± | 0.006 | 1.25 | ± | 0.15 |
| **T** | 0.037 | ± | 0.004 | 0.95 | ± | 0.10 |
| **a** | 0.012 | ± | 0.006 | 0.30 | ± | 0.15 |
| **b** | 0.008 | ± | 0.006 | 0.20 | ± | 0.15 |
| **c** | 0.012 | +0.004/-0.008 | | 0.30 | +0.1/-0.2 | |
| **g** | 0.014 | ± | 0.004 | 0.35 | ± | 0.10 |
| **p** | 0.026 | ± | 0.002 | 0.65 | ± | 0.05 |

Bottom view



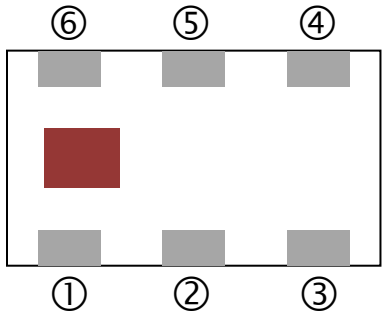

Side view




## Terminal Configuration[3]

| Pin Number | Function |
|---|---|
| 1 | Higher Freq. Port |
| 2 | GND |
| 3 | Lower Freq. Port |
| 4 | GND |
| 5 | Common Port |
| 6 | GND |

Top view




[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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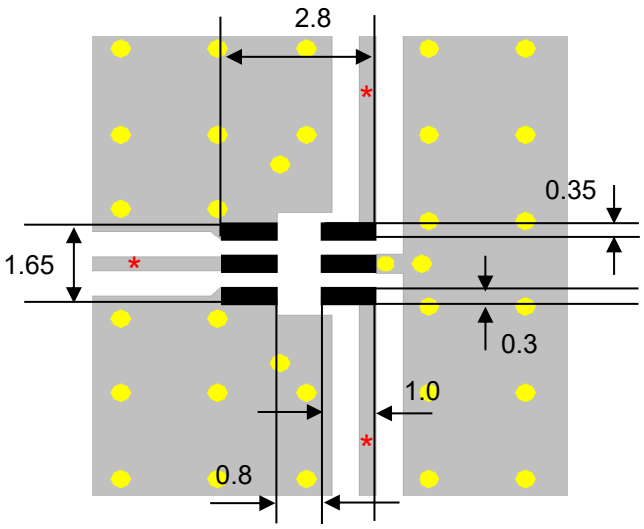
## Recommended PCB Layout

Note: Mount device with colored mark facing up.




Units in mm

Solder Resist

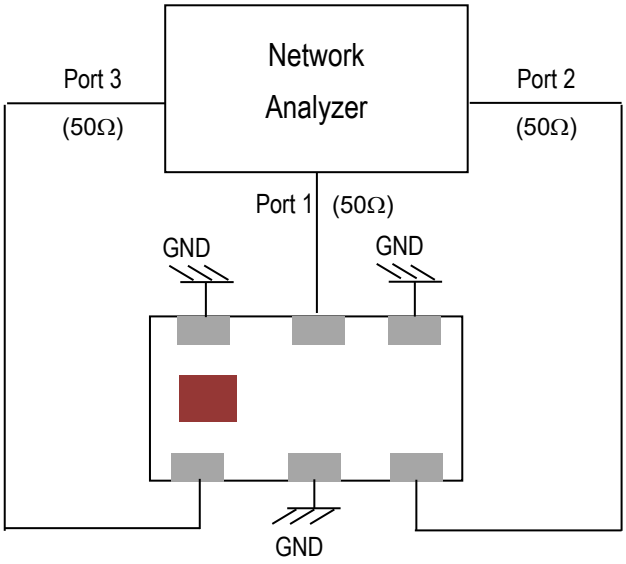
Land

Through-hole ($\phi$ 0.35)

* 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



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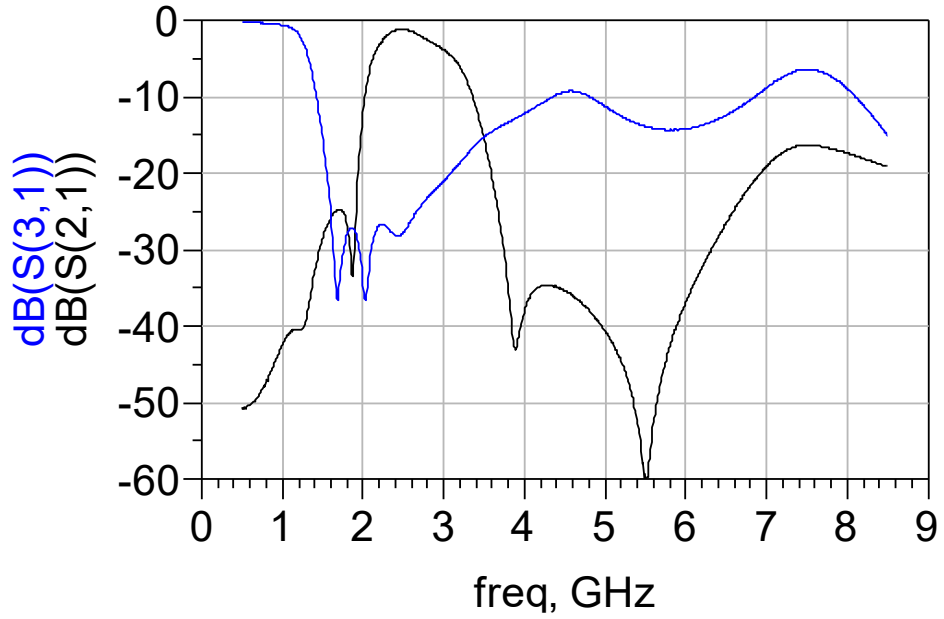
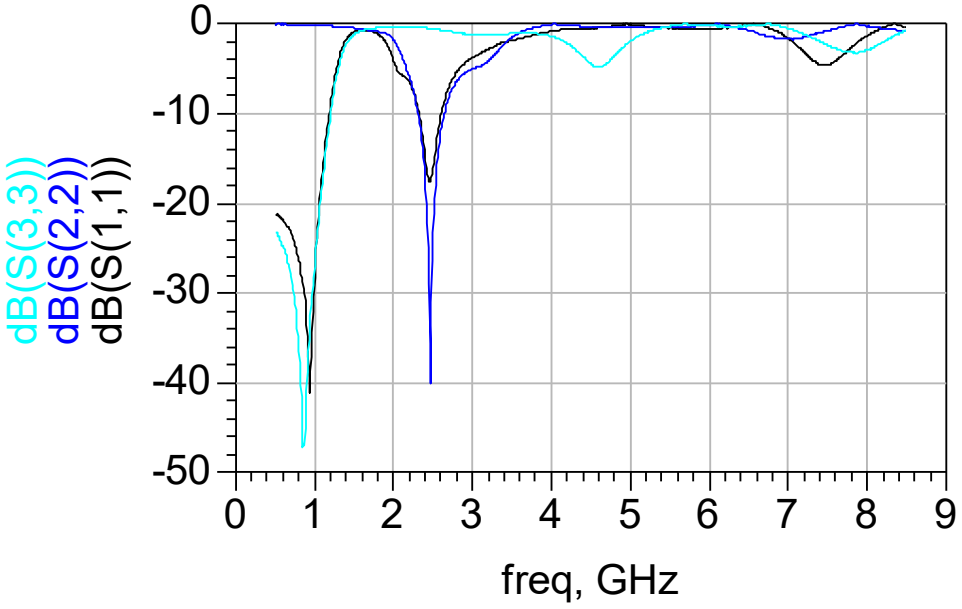
## RF Measurements (T = 25°C)

**Insertion Loss and Attenuation**




**Return Loss**




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



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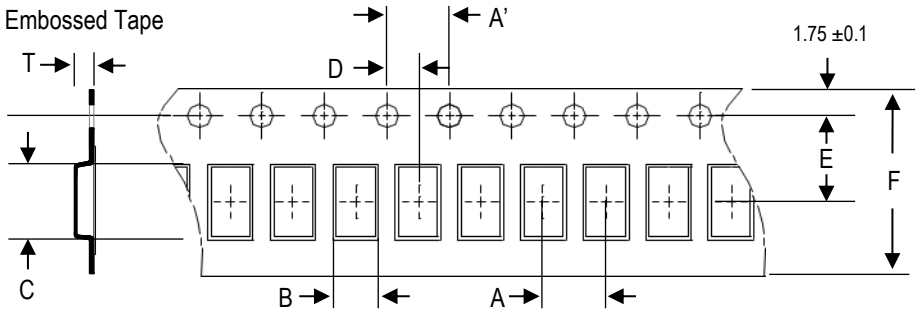
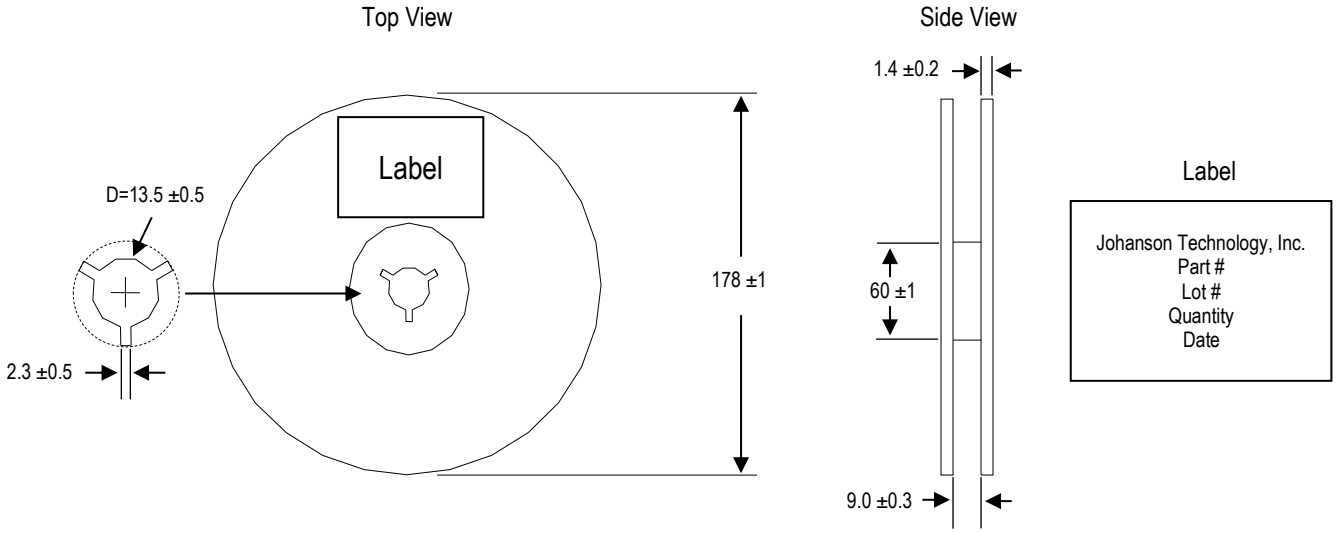
## Tape and Reel Specification (Units in mm)

### Tape Dimensions

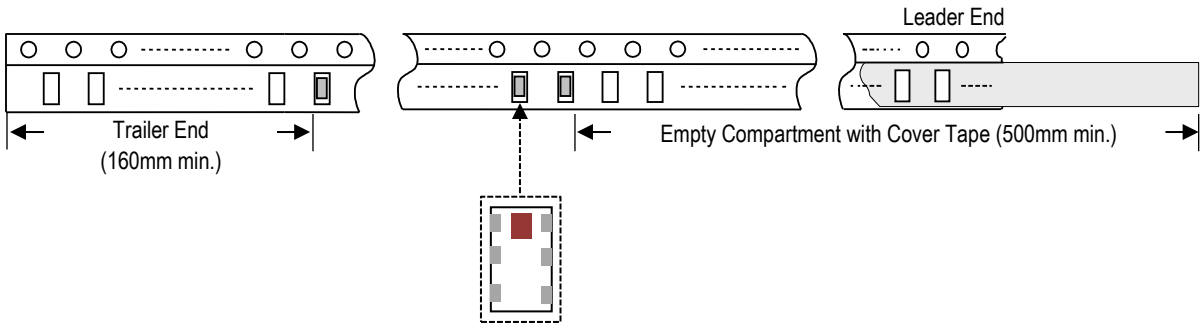



| A | A' | B | C | D | E | F | T | Quantity/reel | Tape material |
|---|---|---|---|---|---|---|---|---|---|
| 4.0 ±0.1 | 4.0 ±0.1 | 1.35 ±0.05 | 2.15 ±0.05 | 2.0 ±0.05 | 3.5 ±0.1 | 8.0 ±0.1 | 1.08 ±0.05 | 4,000 pcs | Plastic (Embossed) |

### Reel Dimensions




### Leader and Trailer Dimensions



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## Orderable Part Numbers

| Packaging Style | Part Number | Termination |
|---|---|---|
| Bulk (loose pcs.) | 0900DP15A2450001B | Nickel Tin |
| T & R (7" Reel Embossed Tape) | 0900DP15A2450001E (Qty: 4,000 pcs/reel) | |
| Evaluation Board with 3 SMA Connector | 0900DP15A2450001CE1 | |

## Important Links

0900DP15A2450001E Product Page

More RF Diplexers

Soldering Information

MSL Information

Packaging Information

Recommended Storage Condition and Max Shelf Life

RoHS Compliance





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