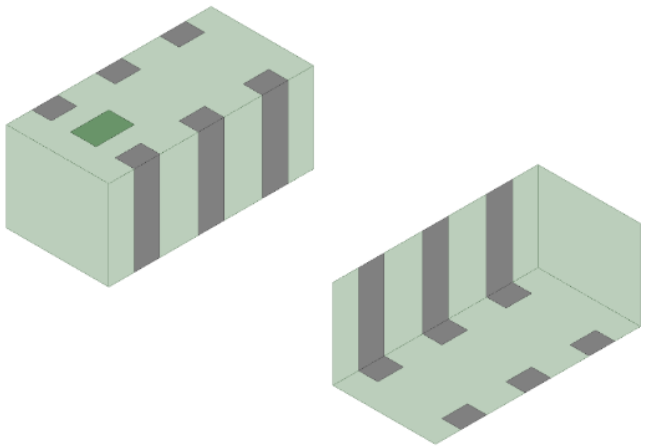
# 2450 / 6100 MHz RF Diplexer

- 2400 - 2500 / 5170 - 7125 MHz operational bands
- Bluetooth, WiFi, WiFi 6E
- SMD, EIA 0603
- RoHS compliant



## General Specifications[1] [2]

| Passband Frequency (MHz) | 2400 - 2500 | 5170 - 7125 |
|---|---|---|
| Insertion Loss (dB) | 0.6 Typ. (0.8 Max.) | 0.9 Typ. (1.15 Max.) |
| Return Loss (dB) | 12 Min. | 10 Min. |
| Attenuation (dB) | 2 Min. @3300 - 4800 MHz<br>33 Min. @4800 - 5000 MHz<br>25 Min. @5170 - 7125 MHz<br>25 Min. @7200 - 7500 MHz<br>27 Min. @9600 - 10000 MHz<br>20 Min. @12000 - 12500 MHz | 35 Min. @70 - 108MHz<br>35 Min. @700 - 915MHz<br>15 Min. @915 - 960MHz<br>30 Min. @1425 - 1470MHz<br>28 Min. @1470 - 1557MHz<br>26 Min. @1557 - 1607MHz<br>35 Min. @1710 - 1785MHz<br>26 Min. @1805 - 1850MHz<br>35 Min. @1850 - 1910MHz<br>35 Min. @1910 - 2020MHz<br>23 Min. @2110 - 2200MHz<br>26 Min. @2300 - 2400MHz<br>25 Min. @2400 - 2500MHz<br>20 Min. @2500 - 2690MHz<br>10 Min. @3400 - 3800MHz<br>25 Min. @10340 - 14250MHz<br>30 Min. @15510 - 19500MHz<br>22 Min. @19500 - 21375MHz |

[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 2450DP14A6100001CE1.



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## 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<br>+5 to +35°C<br>18 Months Max. |



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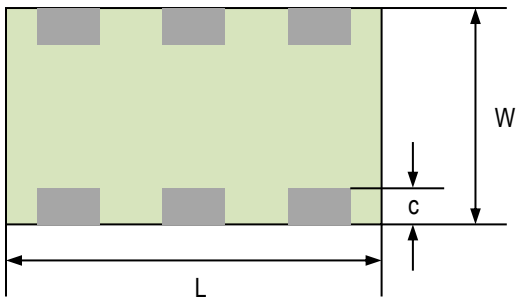
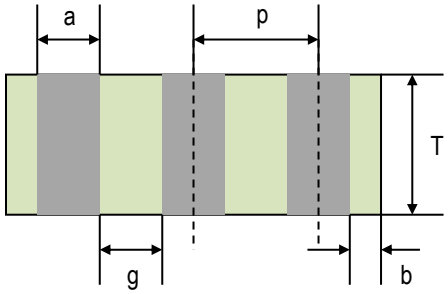
## Mechanical Dimensions

| | Inches | | | Millimeters | | |
|---|---|---|---|---|---|---|
| **L** | 0.063 | ± | 0.004 | 1.60 | ± | 0.10 |
| **W** | 0.031 | ± | 0.004 | 0.80 | ± | 0.10 |
| **T** | 0.028 | | Max. | 0.70 | | Max. |
| **a** | 0.008 | ± | 0.004 | 0.20 | ± | 0.10 |
| **b** | 0.008 | | +0.004/-0.006 | 0.20 | | +0.1/-0.15 |
| **c** | 0.006 | ± | 0.004 | 0.15 | ± | 0.10 |
| **g** | 0.012 | ± | 0.004 | 0.30 | ± | 0.10 |
| **p** | 0.020 | ± | 0.002 | 0.50 | ± | 0.05 |

Bottom view



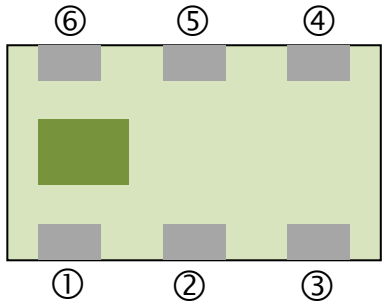

Side view




## Terminal Configuration[3]

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

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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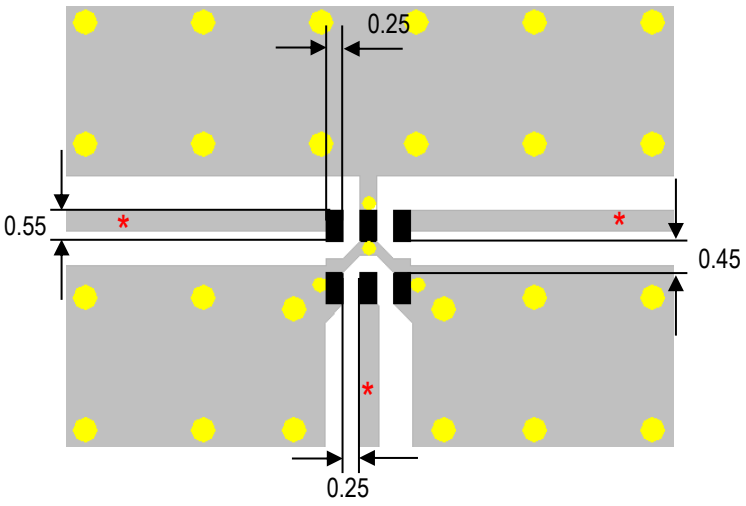
## Recommended PCB Layout

Note: Mount device with colored mark facing up.




Units: mm

Solder Resist

Land

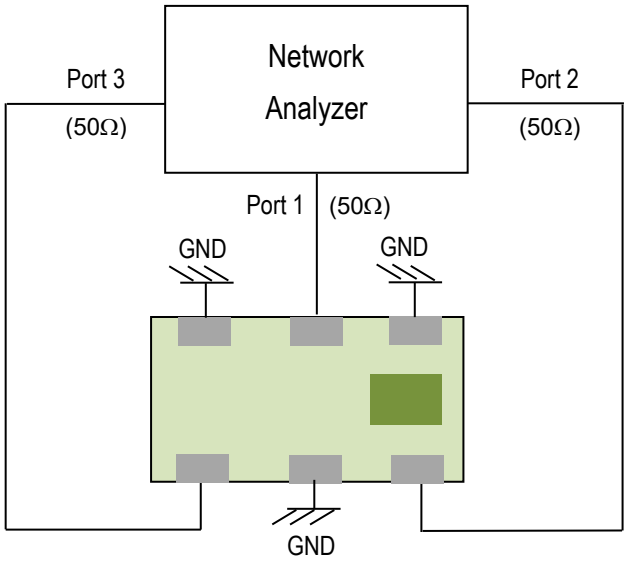
Through-hole ($\phi$0.35)

Through-hole ($\phi$0.2)

* 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



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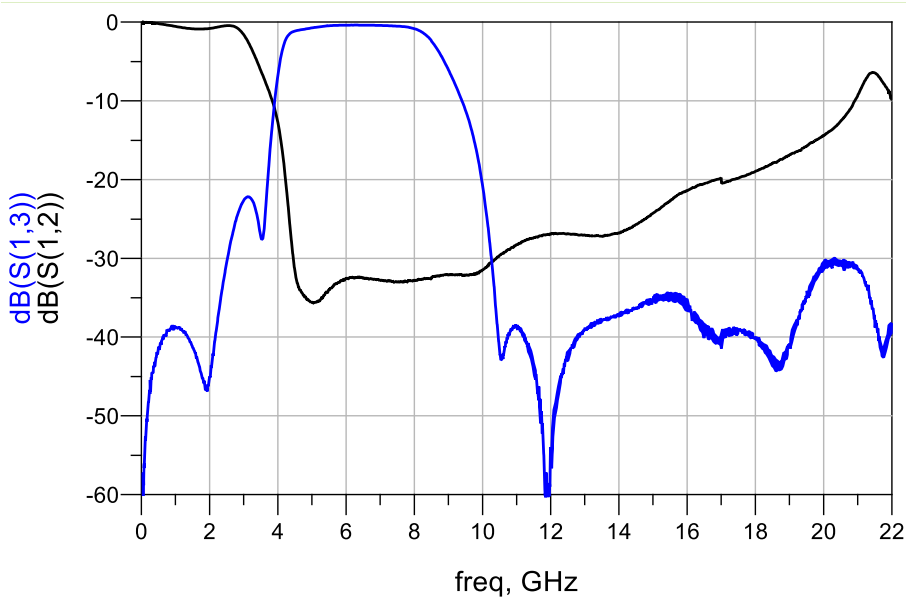
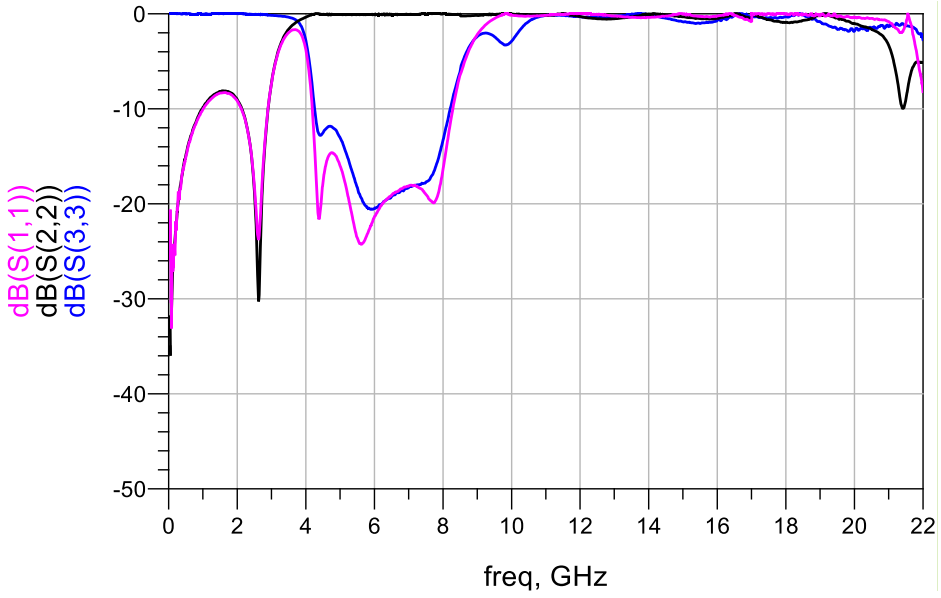
## RF Measurement (T = 25°C)

### 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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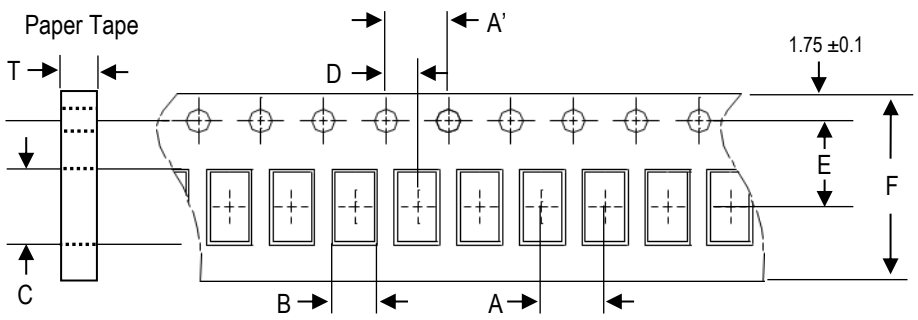
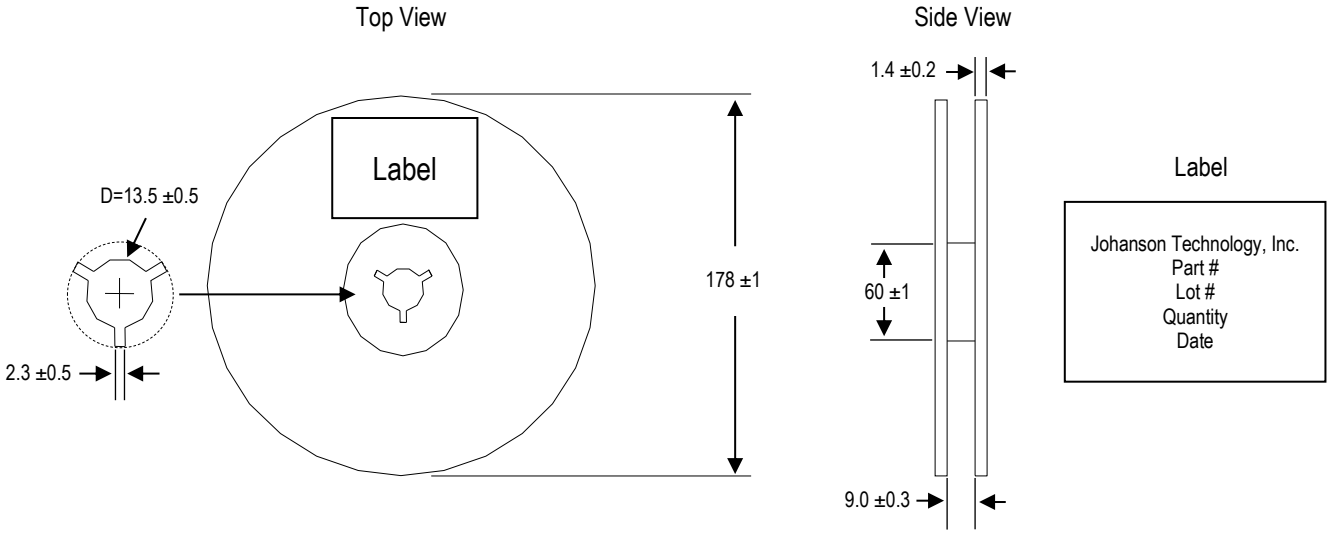
## Tape and Reel Specifications (Units in mm)

### Tape Dimensions

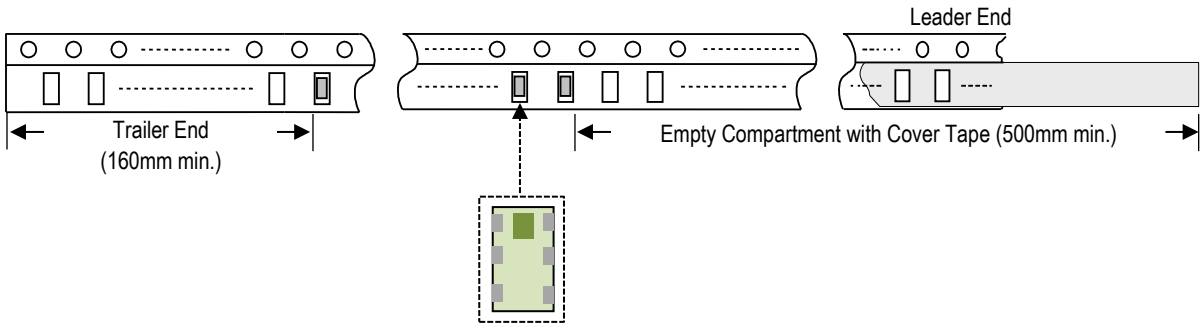



| A | A' | B | C | D | E | F | T | Quantity/reel | Tape material |
|---|---|---|---|---|---|---|---|---|---|
| 4.0 ±0.1 | 4.0 ±0.1 | 1.1 ±0.05 | 1.92 ±0.05 | 2.0 ±0.05 | 3.5 ±0.05 | 8.0 ±0.1 | 0.8 ±0.05 | 4,000pcs | Paper |

### Reel Dimensions




### Leader and Trailer Dimensions



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## Orderable Part Numbers

| Packaging Style | Part Number | Termination |
|---|---|---|
| Bulk (loose pcs.) | 2450DP14A6100001B | Nickel Tin |
| T & R (7" Reel Paper Tape) | 2450DP14A6100001T (Qty: 4,000 pcs./reel) | |
| Evaluation Board with 3 SMA Connector | 2450DP14A6100001CE1 | |

## Important Links

2450DP14A6100001T Product Page

More Diplexers

Antenna Tuning, Optimization, and Validation Services

Soldering Information

MSL Information

Packaging Information

Recommended Storage Condition and Max Shelf Life

RoHS Compliance





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