

Thermal conductive double-coated adhesive tape

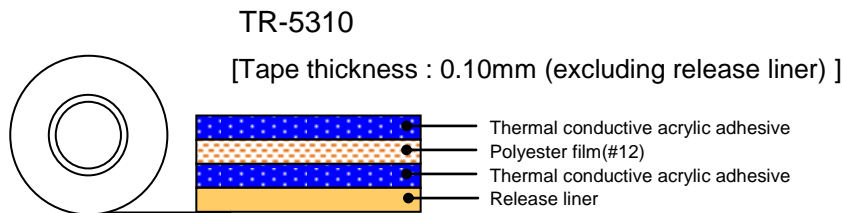
# TR-5310

## Outline

Nitto Denko thermal conductive adhesive tape TR-5310 offers superior thermal conductive property by using the thermal conductive adhesive layer.

TR-5310 offers excellent workability and processability by adopting the polyester film as base material. The tape can be used various area such as electronics.

## Structure



## Features

- Superior thermal conductive property.
- Excellent adhesion and superior adhesive reliability.
- Excellent workability and processability.
- Six restricted substances by RoHS are not contained.

## Applications

- Fixing of LED substrate to chassis
- Fixing of CPU to heat sink or heat radiation fan
- Fixing of various semiconductor packages to heat sinks
- Fixing of electronic components to heat radiation sheet

## Standard Sizes

Tape thickness (mm)	Width (mm)	Length (m)
0.10	4~250, 500	20

For details, please contact us.

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### Properties

#### ●180 degree peeling adhesion for each substrate

Substrate	TR-5310
Stainless steel plate	9.6
Aluminum plate	8.4
Glass epoxy plate	9.0
Glass plate	9.0

(Unit: N/20 mm)

Tape area: 20mm width

Lining material: PETfilm#25

Pressing condition:

1 pass back and forth with 2-kg roller

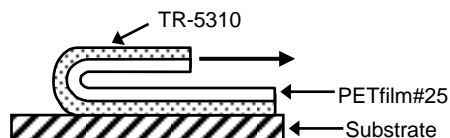
at 23 degree C/50%RH

Applying condition : 23 degree C/50%RH x 30min

Peeling speed: 300 mm/min

Peeling angle: 180 degree

Measurement temperature: 23 degree C/50%RH



#### ●180 degree peeling strength for each temperature

(Laminate at 23 degree C temperature)

Temperature	TR-5310
0 degree C	14.5
23 degree C	8.4
50 degree C	8.4
80 degree C	8.4
100 degree C	7.8
120 degree C	6.2

(Unit: N/20 mm)

Substrate: Aluminum plate

Tape area: 20mm width

Lining material: Aluminum foil

Pressing condition:

1 pass back and forth with 2-kg roller

at each temperature

Applying condition: Each temperature for 30min

Peeling speed: 300 mm/min

Peeling angle: 180 degree

Measurement temperature:

0 degree C, 23 degree C, 50 degree C, 80 degree C, 100 degree C, 120 degree C

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## Properties

### ●Holding power

Temperature	TR-5310
40 degree C	0.2
80 degree C	0.2
100 degree C	0.3
120 degree C	0.4

(Unit : mm/hr)

Substrate: Aluminum plate

Applying condition:

Measurement temperature x 30min

Measurement temperature:

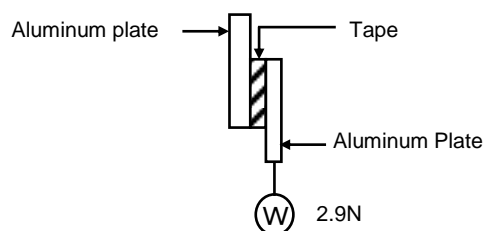
40 degree C, 80 degree C,

100 degree C, 120 degree C

Tape area: 15mm x 15mm

Load: 2.9N(300g)

Load time: 1 hr



### ●180 degree peeling adhesion -Aging(durability) at each condition after applying

Condition		TR-5310
Initial (23 degree C/50%RH x30min)		8.4
-40 degree C x 42 days		12.0
80 degree C	14 days	12.0
	28 days	13.0
	42 days	15.0
60 degree C /90%RH	42days	10.5
Heat cycle [1200cycles]*1		11.0

(Unit: N/20 mm)

Substrate: Aluminum plate

Lining material: Aluminum foil

Pressing condition:

1 pass back and forth with 2-kg roller

at 23 degree C/50%RH

Applying condition: Refer to the left fig.

Peeling speed: 300 mm/min

Peeling angle: 180 degree

Measurement temperature: 23 degree C/50%RH

\*1: Heat cycle condition

[-35 degree C x 30min->(15min)->85 degree Cx30min->(15min)->] x 1200 cycles

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## Properties

### ● Thermal conductivity

	TR-5310
Thermal conductivity	0.4

(Unit: W/m K)

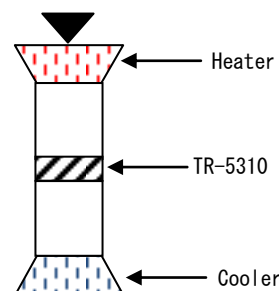
Steady state heat flow method

Tape area: 20mm × 20mm

Heat temperature: 80 degree C

Cool temperature: 20 degree C

Load: 250kPa



### ● Thermal resistance

	TR-5310
Thermal resistance	3.6

(Unit : cm<sup>2</sup>·K/W)

Steady state heat flow method

Tape area: 20mm × 20mm

Heat temperature: 80 degree C

Cool temperature: 20 degree C

Load: 250kPa

### ● Thermal resistance -Aging(durability) at each condition after applying

Condition		TR-5310
Initial		3.6
-40 degree C x 42 days		3.6
80 degree C	14 days	3.6
	28 days	3.6
	42 days	3.6
60 degree C /90%RH	42days	3.9
Heat cycle [1200cycles]*1		3.9

(Unit: cm<sup>2</sup>·K/W)

Applying condition: Refer to the left fig.

Steady state heat flow method

Substrate: Aluminum plate

Lining material: Aluminum foil

Tape area: 20mm × 20mm

Heat temperature: 80 degree C

Cool temperature: 20 degree C

Load: 250kPa

\*1: Heat cycle condition

[-35 degree C x 30min->(15min)->85 degree Cx30min->(15min)->] x 1200 cycles

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## **Precautions when using**

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- Remove all oil, moisture and dirt from the surface of the substrate before applying.
- The tape employs pressure-sensitive adhesive. Be sure to apply pressure with a roller or press when applying. Failure to do so could affect properties or appearance.
- The tape may not adhere well to significantly uneven or distorted surfaces. Level off the surface as much as possible before applying.
- Avoid setting or using such that significant stress is placed on the tape for several hours after application.

## **Precautions when storing**

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- Be sure to keep the tape in its box when not using.
- Keep in a cool dark place not exposed to direct sunlight.

## **Safety precautions**

<b>WARNING</b>
<ul style="list-style-type: none"><li>● Make sure the product is suitable for the application (objective and conditions) before attempting to use. The tape may come off depending on the substrate to or conditions under which it is applied.</li><li>● Use in combination with another method of joining if there is possibility of an accident.</li></ul>



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