

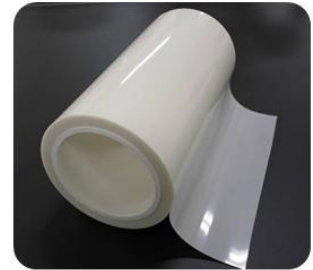
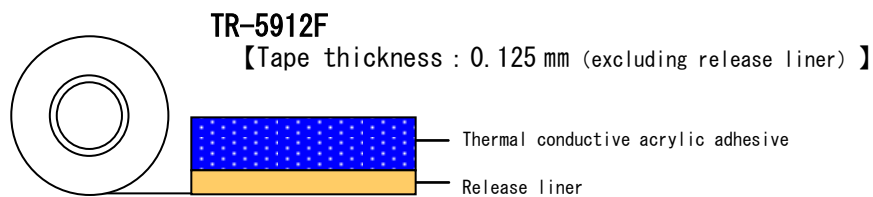
Double-coated adhesive tape

## TR-5912F

### Outline

Nitto Denko thermal conductive adhesive tape TR-5912F offers superior thermal conductive property by using the thermal conductive adhesive layer. TR-5912F acquires flammability UL94 V-0 certification. The tape can be used various area such as electronics.

### Structure



### Features

- Superior thermal conductive property.
- Excellent adhesion and superior adhesive reliability.
- Flammability UL94 V-0[Halogen-free]. [ file No. : QMFZ2. E52859 ].
- 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)
0.125	275, 550, 1100	20, 50

For details, please contact us.

TR-5912F 10-P-0304\_E (1/6)

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## Properties

● 180 degree peeling adhesion for each substrate

Substrate	TR-5912F
Stainless steel plate	16.4
Aluminum plate (A1050)	14.1
Aluminum plate (A6063)	17.9
Acrylic plate	19.2
Glass epoxy plate	23.5
Bakelite plate	26.3
Ceramics plate	19.8
White solder resist for LED	43.8

(Unit : N/20 mm)

Tape area : 20mm width

Lining material : No. 31B #25

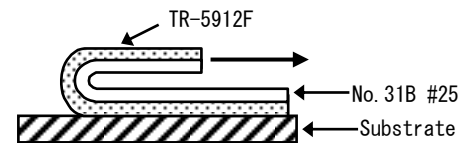
Pressing condition : 1pass back and forth with 2-kg roller at 23 degree C/50%RH

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

Peeling speed : 300 mm/min

Peeling angle : 180 degree

Measurement temperature : 23 degree C/50%RH



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

Condition	TR-5912F
Initial (23 degree C/50%RH × 30min)	16.4
23 degree C × 42 days (1000hrs)	16.7
60 degree C × 42 days (1000hrs)	17.0
100 degree C × 42 days (1000hrs)	20.5
120 degree C × 42 days (1000hrs)	25.1
85 degree C /85%RH × 42 days (1000hrs)	25.0
Thermal shock [1000cycles] ※1	21.3

(Unit : N/20 mm)

Substrate : Stainless steel plate

Lining material : No. 31B #25

Pressing condition : 1pass back and forth with 2-kg roller at 23 degree C/50%RH

Applying condition : Refer to the left table.

Peeling speed : 300 mm/min

Peeling angle : 180 degree

Measurement temperature : 23 degree C/50%RH

※1 : Thermal shock condition

[-40 degree C × 30min ⇒ 125 degree C × 30min ⇒]  
× 1000 cycles

TR-5912F 10-P-0304\_E (2/6)

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## Properties

### ●Holding power

Temperature	TR-5912F
23 degree C	0.1
40 degree C	0.1
80 degree C	0.1
100 degree C	0.1

(Unit:mm/hr)

Substrate : Aluminum plate

Applying condition:

Measurement temperature ×30min

Measurement temperature :

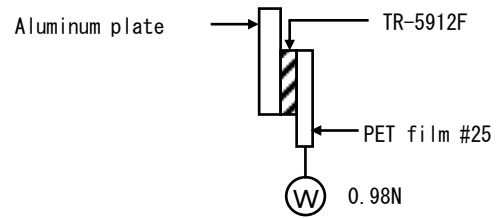
23 degree C, 40 degree C,

80 degree C, 100 degree C

Tape area : 10mm × 10 mm

Load : 0.98N(100g)

Load time : 1hr



### ●Holding power -Aging(durability) at each condition after applying

Condition	TR-5912F
Initial (23 degree C/50%RH)	0.1
23 degree C × 42 days (1000hrs)	0.1
60 degree C × 42 days (1000hrs)	0.1
100 degree C × 42 days (1000hrs)	0.1
60 degree C /90%RH × 42 days (1000hrs)	0.1
Thermal shock [1000cycles]※1	0.1

(Unit:mm/hr)

Substrate : Aluminum plate

Applying condition: Refer to the left table.

Measurement temperature : 40 degree C

Tape area : 10mm × 10 mm

Load : 0.98N(100g)

Load time : 1hr

※1 : Thermal shock condition

[-40 degree C × 30min ⇒ 125 degree C × 30min ⇒]  
 × 1000 cycles

TR-5912F 10-P-0304\_E (3/6)

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## Properties

### ● Thermal conductivity

TR-5912F	
Thermal conductivity	1.1

(Unit : W/m·K)

Laser-flush method

Test temperature : 23 degree C

### ● Thermal resistance

TR-5912F	
Thermal resistance	1.8

(Unit : cm<sup>2</sup>·K/W)

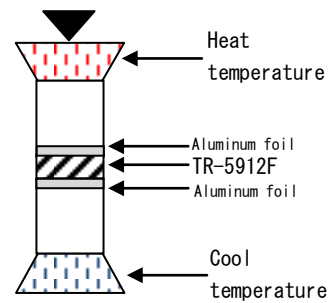
Steady state heat flow method

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-5912F
Initial (23 degree C/50%RH)	1.8
60 degree C×42 days (1000hrs)	1.8
100 degree C×42 days (1000hrs)	1.8
120 degree C×42 days (1000hrs)	1.8
85 degree C /85%RH×42 days (1000hrs)	1.8
Thermal shock [1000cycles]※1	1.8

(Unit : cm<sup>2</sup>·K/W)

Substrate : Aluminum plate

Applying condition: Refer to the left table.

Steady state heat flow method

Tape area: 20mm×20mm

Heat temperature : 80 degree C

Cool temperature : 20 degree C

Load : 250kPa

※1 : Thermal shock condition

[-40 degree C ×30min

⇒125 degree C×30min⇒]

×1000 cycles

TR-5912F 10-P-0304\_E (4/6)

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## Properties

### ●Flammability

	TR-5912F
UL94	V-0 QMFZ2 E52859

(Unit : -)

Measurement condition : Refer to UL94 V test

### ●Electrical insulating property

	TR-5912F
Breakdown voltage	0.5

(Unit : kV)

Measurement temperature : 23 degree C

Measurement humidity : 50%RH

Voltage rising rate : 1kV/s

Load : 4.9N

### ●Total VOC emission

Condition	TR-5912F
80 degree C×0.5 hrs	30
130 degree C×0.5 hrs	70

(Unit :  $\mu$ g/g)

Tape area:5cm<sup>2</sup>

Applying condition: Refer to the left table.

Heating method: 20mL vial bottle

Measurement : Quantity of volatile gas 1mL

TR-5912F 10-P-0304\_E (5/6)

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## Precautions when using

---

- 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

---

- 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

WARNING
<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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TR-5912F 10-P-0304\_E (6/6)

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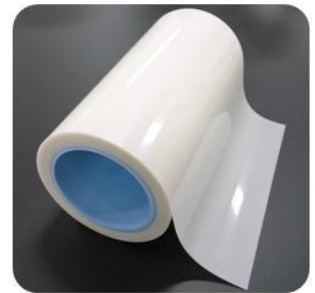
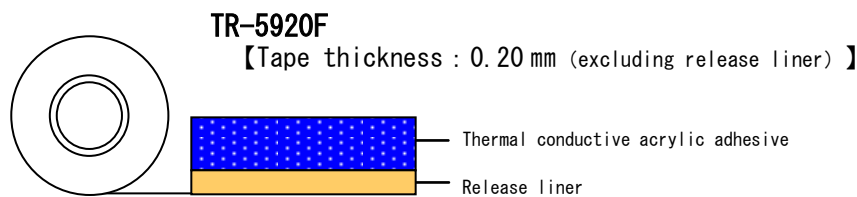
Double-coated adhesive tape

## TR-5920F

### Outline

Nitto Denko thermal conductive adhesive tape TR-5920F offers superior thermal conductive property by using the thermal conductive adhesive layer. TR-5920F acquires flammability UL94 V-0 certification. The tape can be used various area such as electronics.

### Structure



### Features

- Superior thermal conductive property.
- Excellent adhesion and superior adhesive reliability.
- Flammability UL94 V-0[Halogen-free]. [ file No. : QMFZ2. E52859 ].
- 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)
0.20	275, 550, 1100	20, 50

For details, please contact us.

TR-5920F 10-P-0306\_E (1/6)

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## Properties

● 180 degree peeling adhesion for each substrate

Substrate	TR-5920F
Stainless steel plate	17.0
Aluminum plate (A1050)	14.6
Aluminum plate (A6063)	18.5
Acrylic plate	19.9
Glass epoxy plate	25.5
Bakelite plate	28.8
Ceramics plate	20.5
White solder resist for LED	44.5

(Unit : N/20 mm)

Tape area : 20mm width

Lining material : No. 31B #25

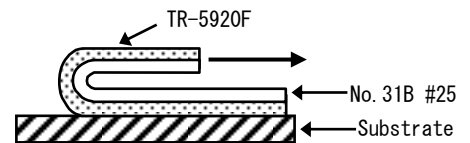
Pressing condition : 1pass back and forth with 2-kg roller at 23 degree C/50%RH

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

Peeling speed : 300 mm/min

Peeling angle : 180 degree

Measurement temperature : 23 degree C/50%RH



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

Condition	TR-5920F
Initial (23 degree C/50%RH × 30min)	17.0
23 degree C × 42 days (1000hrs)	17.5
60 degree C × 42 days (1000hrs)	17.8
100 degree C × 42 days (1000hrs)	22.4
120 degree C × 42 days (1000hrs)	26.5
85 degree C /85%RH × 42 days (1000hrs)	25.9
Thermal shock [1000cycles]※1	22.5

(Unit : N/20 mm)

Substrate : Stainless steel plate

Lining material : No. 31B #25

Pressing condition : 1pass back and forth with 2-kg roller at 23 degree C/50%RH

Applying condition : Refer to the left table.

Peeling speed : 300 mm/min

Peeling angle : 180 degree

Measurement temperature : 23 degree C/50%RH

※1 : Thermal shock condition

[-40 degree C × 30min ⇒ 125 degree C × 30min ⇒]  
× 1000 cycles

TR-5920F 10-P-0306\_E (2/6)

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## Properties

### ●Holding power

Temperature	TR-5920F
23 degree C	0.1
40 degree C	0.1
80 degree C	0.1
100 degree C	0.1

(Unit:mm/hr)

Substrate : Aluminum plate

Applying condition:

Measurement temperature ×30min

Measurement temperature :

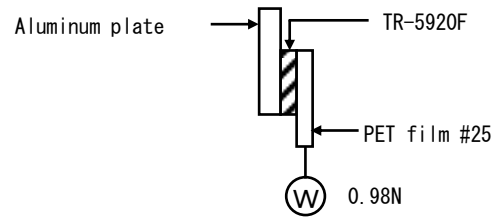
23 degree C, 40 degree C,

80 degree C, 100 degree C

Tape area : 10mm × 10 mm

Load : 0.98N(100g)

Load time : 1hr



### ●Holding power -Aging(durability) at each condition after applying

Condition	TR-5920F
Initial (23 degree C/50%RH)	0.1
23 degree C × 42 days (1000hrs)	0.1
60 degree C × 42 days (1000hrs)	0.1
100 degree C × 42 days (1000hrs)	0.1
60 degree C /90%RH × 42 days (1000hrs)	0.1
Thermal shock [1000cycles] ※ 1	0.1

(Unit:mm/hr)

Substrate : Aluminum plate

Applying condition: Refer to the left table.

Measurement temperature : 40 degree C

Tape area : 10mm × 10 mm

Load : 0.98N(100g)

Load time : 1hr

※ 1 : Thermal shock condition

[-40 degree C × 30min ⇒ 125 degree C × 30min ⇒]  
× 1000 cycles

TR-5920F 10-P-0306\_E (3/6)

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## Properties

### ● Thermal conductivity

	TR-5920F
Thermal conductivity	1.1

(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-5920F
Thermal resistance	2.2

(Unit : cm<sup>2</sup>·K/W)

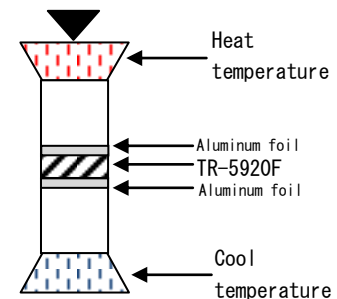
Steady state heat flow method

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-5920F
Initial (23 degree C/50%RH)	2.2
60 degree C×42 days (1000hrs)	2.2
100 degree C×42 days (1000hrs)	2.2
120 degree C×42 days (1000hrs)	2.2
85 degree C /85%RH×42 days (1000hrs)	2.2
Thermal shock [1000cycles]※1	2.2

(Unit : cm<sup>2</sup>·K/W)

Substrate : Aluminum plate

Applying condition: Refer to the left table.

Steady state heat flow method

Tape area: 20mm×20mm

Heat temperature : 80 degree C

Cool temperature : 20 degree C

Load : 250kPa

※1 : Thermal shock condition

[-40 degree C ×30min

⇒125 degree C×30min⇒]

×1000 cycles

TR-5920F 10-P-0306\_E (4/6)

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## Properties

### ●Flammability

	TR-5920F
UL94	V-0 QMFZ2 E52859

(Unit : -)

Measurement condition : Refer to UL94 V test

### ●Electrical insulating property

	TR-5920F
Breakdown voltage	2.1

(Unit : kV)

Measurement temperature : 23 degree C

Measurement humidity : 50%RH

Voltage rising rate : 1kV/s

Load : 4.9N

### ●Total VOC emission

Condition	TR-5920F
80 degree C×0.5 hrs	43
130 degree C×0.5 hrs	106

(Unit :  $\mu$ g/g)

Tape area:5cm<sup>2</sup>

Applying condition: Refer to the left table.

Heating method: 20mL vial bottle

Measurement : Quantity of volatile gas 1mL

TR-5920F 10-P-0306\_E (5/6)

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### Precautions when using

---

- 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

---

- 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

WARNING
<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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TR-5920F 10-P-0306\_E (6/6)

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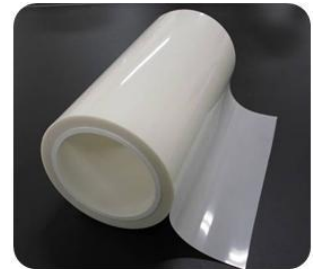
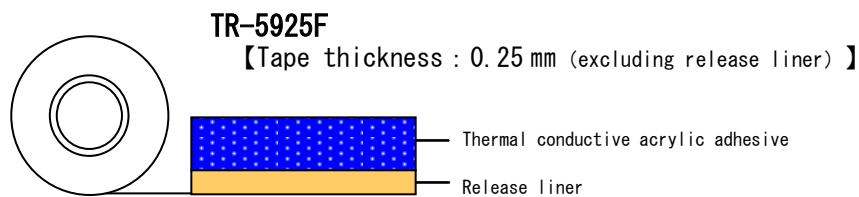
Double-coated adhesive tape

## TR-5925F

### Outline

Nitto Denko thermal conductive adhesive tape TR-5925F offers superior thermal conductive property by using the thermal conductive adhesive layer. TR-5925F acquires flammability UL94 V-0 certification. The tape can be used various area such as electronics.

### Structure



### Features

- Superior thermal conductive property.
- Excellent adhesion and superior adhesive reliability.
- Flammability UL94 V-0[Halogen-free]. [ file No. : QMFZ2. E52859 ].
- 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)
0.25	275, 550, 1100	20, 50

For details, please contact us.

TR-5925F 10-P-0307\_E (1/6)

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## Properties

● 180 degree peeling adhesion for each substrate

Substrate	TR-5925F
Stainless steel plate	18.3
Aluminum plate (A1050)	15.6
Aluminum plate (A6063)	19.7
Acrylic plate	21.0
Glass epoxy plate	26.6
Bakelite plate	29.8
Ceramics plate	22.5
White solder resist for LED	44.5

(Unit : N/20 mm)

Tape area : 20mm width

Lining material : No. 31B #25

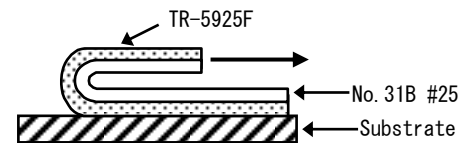
Pressing condition : 1pass back and forth with 2-kg roller at 23 degree C/50%RH

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

Peeling speed : 300 mm/min

Peeling angle : 180 degree

Measurement temperature : 23 degree C/50%RH



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

Condition	TR-5925F
Initial (23 degree C/50%RH×30min)	18.3
23 degree C×42 days (1000hrs)	18.8
60 degree C×42 days (1000hrs)	19.0
100 degree C×42 days (1000hrs)	22.9
120 degree C×42 days (1000hrs)	26.8
85 degree C /85%RH×42 days (1000hrs)	26.4
Thermal shock [1000cycles] <sup>※1</sup>	22.8

(Unit : N/20 mm)

Substrate : Stainless steel plate

Lining material : No. 31B #25

Pressing condition : 1pass back and forth with 2-kg roller at 23 degree C/50%RH

Applying condition : Refer to the left table.

Peeling speed : 300 mm/min

Peeling angle : 180 degree

Measurement temperature : 23 degree C/50%RH

※1 : Thermal shock condition

[-40 degree C ×30min⇒125 degree C×30min⇒]  
×1000 cycles

TR-5925F 10-P-0307\_E (2/6)

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## Properties

### ●Holding power

Temperature	TR-5925F
23 degree C	0.1
40 degree C	0.1
80 degree C	0.1
100 degree C	0.1

(Unit:mm/hr)

Substrate : Aluminum plate

Applying condition:

Measurement temperature ×30min

Measurement temperature :

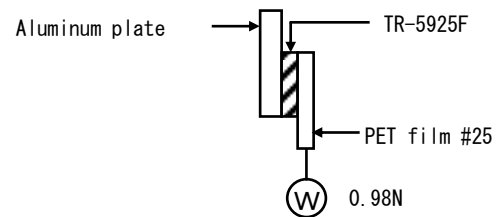
23 degree C, 40 degree C,

80 degree C, 100 degree C

Tape area : 10mm × 10 mm

Load : 0.98N(100g)

Load time : 1hr



### ●Holding power -Aging(durability) at each condition after applying

Condition	TR-5925F
Initial (23 degree C/50%RH)	0.1
23 degree C × 42 days (1000hrs)	0.1
60 degree C × 42 days (1000hrs)	0.1
100 degree C × 42 days (1000hrs)	0.1
60 degree C /90%RH × 42 days (1000hrs)	0.1
Thermal shock [1000cycles]※1	0.1

(Unit:mm/hr)

Substrate : Aluminum plate

Applying condition: Refer to the left table.

Measurement temperature : 40 degree C

Tape area : 10mm × 10 mm

Load : 0.98N(100g)

Load time : 1hr

※1 : Thermal shock condition

[-40 degree C × 30min ⇒ 125 degree C × 30min ⇒]  
× 1000 cycles

TR-5925F 10-P-0307\_E (3/6)

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## Properties

### ● Thermal conductivity

TR-5925F	
Thermal conductivity	1.1

(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-5925F	
Thermal resistance	2.8

(Unit : cm<sup>2</sup>·K/W)

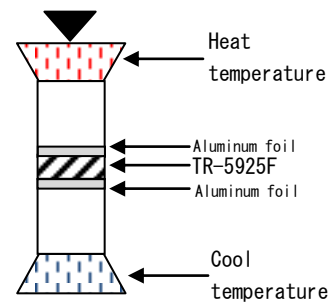
Steady state heat flow method

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-5925F
Initial (23 degree C/50%RH)	2.8
60 degree C×42 days (1000hrs)	2.8
100 degree C×42 days (1000hrs)	2.8
120 degree C×42 days (1000hrs)	2.8
85 degree C /85%RH×42 days (1000hrs)	2.8
Thermal shock [1000cycles] <sup>※1</sup>	2.8

(Unit : cm<sup>2</sup>·K/W)

Substrate : Aluminum plate

Applying condition: Refer to the left table.

Steady state heat flow method

Tape area: 20mm×20mm

Heat temperature : 80 degree C

Cool temperature : 20 degree C

Load : 250kPa

※1 : Thermal shock condition

[-40 degree C ×30min

⇒125 degree C×30min⇒]

×1000 cycles

TR-5925F 10-P-0307\_E (4/6)

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## Properties

### ●Flammability

	TR-5925F
UL94	V-0 QMFZ2 E52859

(Unit : -)

Measurement condition : Refer to UL94 V test

### ●Electrical insulating property

	TR-5925F
Breakdown voltage	3.1

(Unit : kV)

Measurement temperature : 23 degree C

Measurement humidity : 50%RH

Voltage rising rate : 1kV/s

Load : 4.9N

### ●Total VOC emission

Condition	TR-5925F
80 degree C×0.5 hrs	53
130 degree C×0.5 hrs	133

(Unit :  $\mu$ g/g)

Tape area:5cm<sup>2</sup>

Applying condition: Refer to the left table.

Heating method: 20mL vial bottle

Measurement : Quantity of volatile gas 1mL

TR-5925F 10-P-0307\_E (5/6)

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## Precautions when using

---

- 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

---

- 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

WARNING
<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>

Published in December 2013

TR-5925F 10-P-0307\_E (6/6)

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Double-coated adhesive tape

# TR-5325F

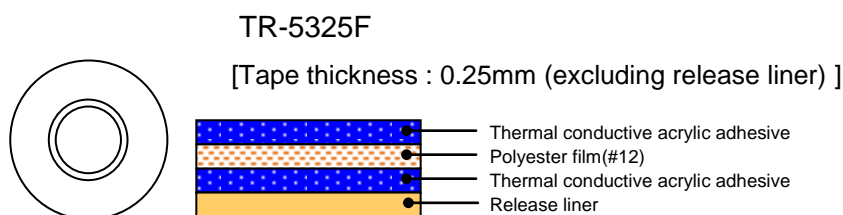
## Outline

Nitto Denko thermal conductive adhesive tape TR-5325F offers superior thermal conductive property by using the thermal conductive adhesive layer.

TR-5325F acquires flammability UL94 V-0 certification.

TR-5325F 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.
- Flammability UL94 V-0 [Halogen-free]. [ file No. : QMFZ2.E52859 ]
- 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)
0.25	10 - 1000	20

For details, please contact us.

TR-5325F 10-P-0269\_E (1/6)

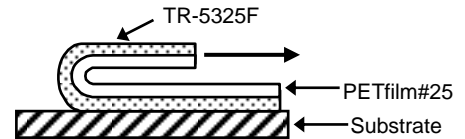
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Properties

- 180 degree peeling adhesion for each substrate

Substrate	TR-5325F
Stainless steel plate	11.4
Aluminum plate (A1050)	9.8
Aluminum plate (A6063)	12.4
Acrylic plate	13.3
Glass epoxy plate	17.2
Bakelite plate	19.2
Ceramics plate	13.7
White solder resist for LED	33.8

(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 adhesion -Aging(durability) at each condition after applying

Condition	TR-5325F
Initial (23 degree C/50%RH x30min)	11.4
23 degree Cx42 days (1000 hrs)	13.8
60 degree Cx42 days (1000 hrs)	17.4
100 degree Cx42 days (1000 hrs)	21.3
120 degree Cx42 days (1000 hrs)	25.0
85 degree C/85%RHx42 days (1000 hrs)	24.9
Thermal shock [1000cycles]*1	22.6

(Unit: N/20 mm)  
 Substrate: Stainless steel plate  
 Lining material: PET film#25  
 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: Thermal shock condition  
 [-40 degree C x 30min->125 degree Cx30min-->]  
 x 1000 cycles

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## Properties

### ● Holding power

Temperature	TR-5325F
23 degree C	0.1
40 degree C	0.1
80 degree C	0.1
100 degree C	0.1

(Unit : mm/hr)

Substrate: Aluminum plate

Applying condition:

Measurement temperature x 30min

Measurement temperature:

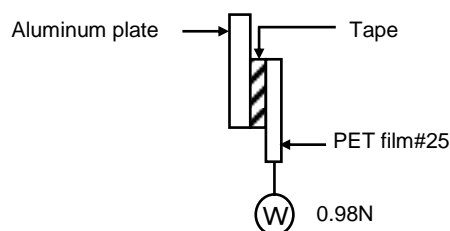
23 degree C, 40 degree C,

80 degree C, 100 degree C

Tape area: 10mm x 10mm

Load: 0.98N(100g)

Load time: 1 hr



### ● Holding power -Aging(durability) at each condition after applying

Condition	TR-5325F
Initial (23 degree C/50%RH)	0.1
23 degree Cx42 days (1000 hrs)	0.1
60 degree Cx42 days (1000 hrs)	0.1
100 degree Cx42 days (1000 hrs)	0.1
60 degree C/90%RHx42 days (1000 hrs)	0.1
Thermal shock [1000cycles]*1	0.1

(Unit : mm/hr)

Substrate: Aluminum plate

Applying condition: Refer to the left fig.

Measurement temperature:40 degree C,

Tape area: 10mm x 10mm

Load: 0.98N(100g)

Load time: 1 hr

\*1: Thermal shock condition

[-40 degree C x 30min->125 degree Cx30min-->]  
x 1000 cycles

TR-5325F 10-P-0269\_E (3/6)

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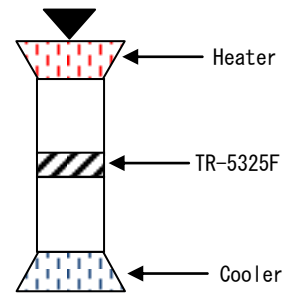
## Properties

### ● Thermal conductivity

	TR-5325F
Thermal conductivity	0.7

(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-5325F
Thermal resistance	3.5

(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 conductivity -Aging(durability) at each condition after applying

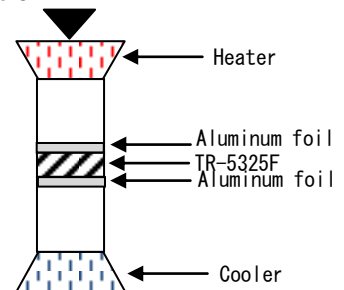
Condition	TR-5325F
Initial (23 degree C/50%RH)	0.7
60 degree Cx42 days (1000 hrs)	0.7
100 degree Cx42 days (1000 hrs)	0.7
120 degree Cx42 days (1000 hrs)	0.7
85 degree C/85%RHx42 days (1000 hrs)	0.7
Thermal shock [1000cycles]*1	0.7

(Unit: W/m K)

Applying condition: Refer to the left fig.

Steady state heat flow method  
Substrate: Aluminum foil  
Tape area: 20mm × 20mm  
Heat temperature: 80 degree C  
Cool temperature: 20 degree C  
Load: 250kPa

\*1: Thermal shock condition  
[-40 degree C x 30min->125 degree Cx30min->] x 1000 cycles



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

Condition	TR-5325F
Initial (23 degree C/50%RH)	4.0
60 degree Cx42 days (1000 hrs)	4.0
100 degree Cx42 days (1000 hrs)	4.1
120 degree Cx42 days (1000 hrs)	4.0
85 degree C/85%RHx42 days (1000 hrs)	3.9
Thermal shock [1000cycles]*1	4.2

(Unit : cm<sup>2</sup>·K/W)

Applying condition: Refer to the left fig.

Steady state heat flow method  
Substrate: Aluminum foil  
Tape area: 20mm × 20mm  
Heat temperature: 80 degree C  
Cool temperature: 20 degree C  
Load: 250kPa

\*1: Thermal shock condition  
[-40 degree C x 30min->125 degree Cx30min->] x 1000 cycles

TR-5325F 10-P-0269\_E (4/6)

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## Properties

### ● Flammability

	TR-5325F
UL94	V-0 QMFZ2 E52859

(Unit : -)

Measurement condition: Refer to UL94 V test.

### ● Electrical insulating property

	TR-5325F
Breakdown voltage	8.9

(Unit : kV)

Measurement temperature: 23 degree C

Measurement humidity: 50%RH

Voltage rising rate: 1kV/s

Load: 4.9N

### ● Total VOC emission

Condition	TR-5325F
80 degree Cx0.5 hrs	50
130 degree Cx0.5 hrs	130

(Unit: μg/g)

Tape area: 5cm<sup>2</sup>

Applying condition: Refer to the left fig.

Heating method: 20mL vial bottle

Measurement: Quantity of volatile gas 1mL

TR-5325F 10-P-0269\_E (5/6)

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## Precautions when using

---

- 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

---

- 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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TR-5325F 10-P-0269\_E (6/6)

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Thermal conductive double-coated adhesive tape

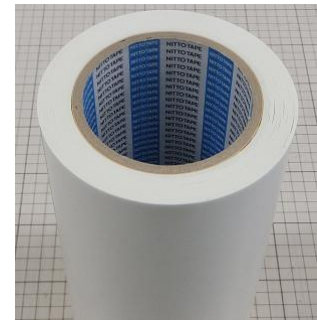
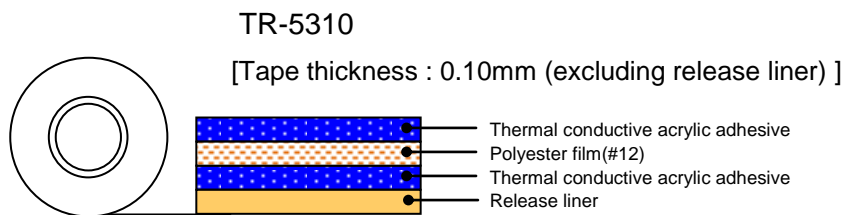
## TR-5310

### 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.

TR-5310 10-P-0256\_E (1/5)

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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:

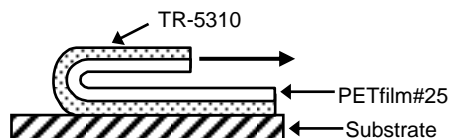
1 pass back and forth with 2-kg roller  
at 23 degree C/50%RH

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

TR-5310 10-P-0256\_E (2/5)

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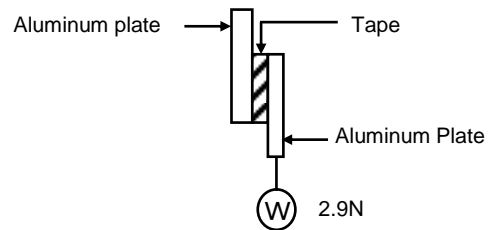
## Properties

### ● 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

TR-5310 10-P-0256\_E (3/5)

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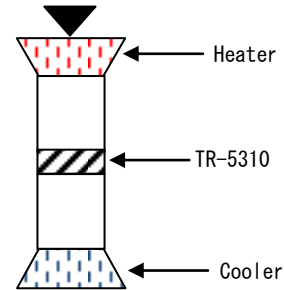
## Properties

### ● 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

TR-5310 10-P-0256\_E (4/5)

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## Precautions when using

---

- 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

---

- 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

WARNING
<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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TR-5310 10-P-0256\_E (5/5)

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