

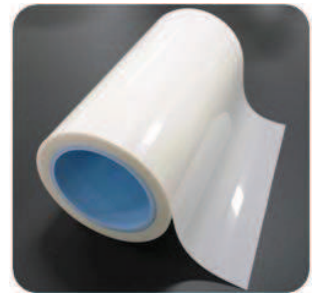
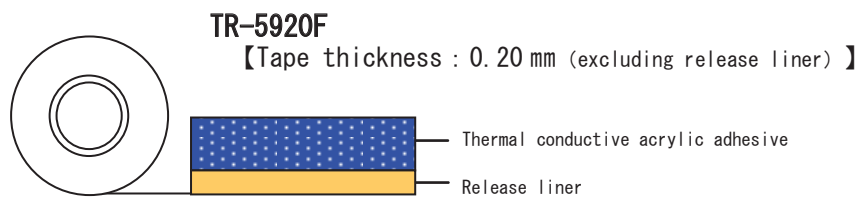
Double-coated adhesive tape

## 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.

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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

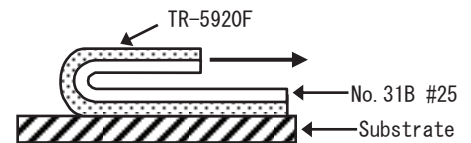
Pressing condition : 1pass back and forth with 2-kg roller at 23 degree C/50%RH

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] <sup>※1</sup>	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

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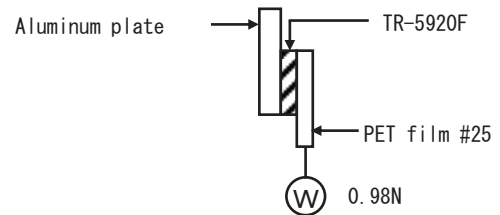
## Properties

### ●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

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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)

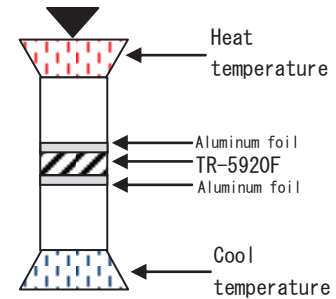
Steady state heat flow method

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] <sup>※1</sup>	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

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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

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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

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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