

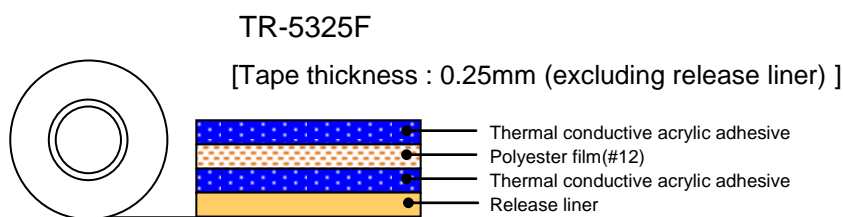
Double-coated adhesive tape

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.

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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

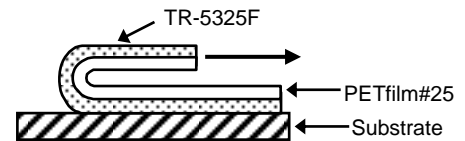
at 23 degree C/50%RH

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:

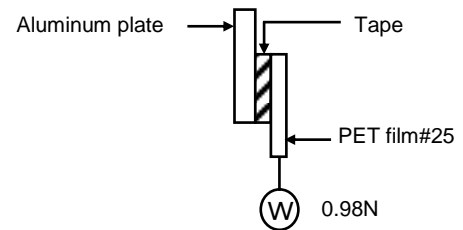
23 degree C, 40 degree C,

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

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Properties

● Thermal conductivity

| | TR-5325F |
|----------------------|----------|
| Thermal conductivity | 0.7 |

(Unit: W/m K)

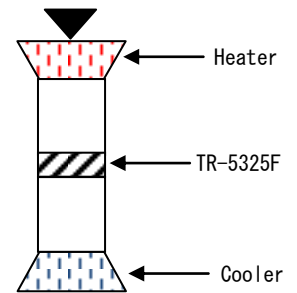
Steady state heat flow method

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 : cm²·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 C×42 days (1000 hrs) | 0.7 |
| 100 degree C×42 days (1000 hrs) | 0.7 |
| 120 degree C×42 days (1000 hrs) | 0.7 |
| 85 degree C/85%RH×42 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

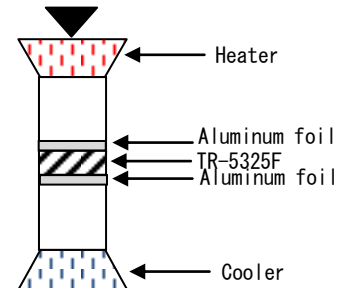
Substrate: Aluminum foil

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 C×42 days (1000 hrs) | 4.0 |
| 100 degree C×42 days (1000 hrs) | 4.1 |
| 120 degree C×42 days (1000 hrs) | 4.0 |
| 85 degree C/85%RH×42 days (1000 hrs) | 3.9 |
| Thermal shock [1000cycles]*1 | 4.2 |

 (Unit : cm²·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

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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: $\mu\text{g/g}$)Tape area: 5cm²

Applying condition: Refer to the left fig.

Heating method: 20mL vial bottle

Measurement: Quantity of volatile gas 1mL

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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">● 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.● Use in combination with another method of joining if there is possibility of an accident. |

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