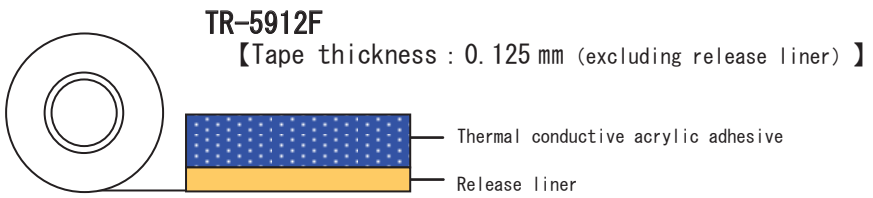
Double-coated adhesive tape

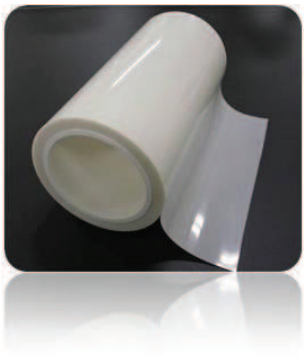
TR-5912F

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

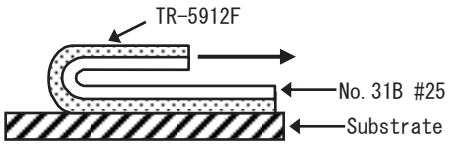
For details, please contact us.

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

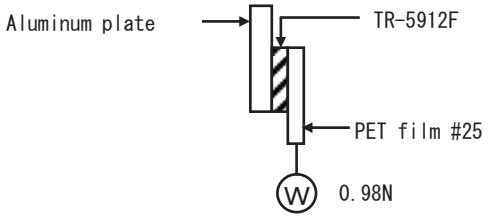
※1 : Thermal shock condition
[-40 degree C ×30min⇒125 degree C×30min⇒]
×1000 cycles

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

Properties

●Thermal conductivity

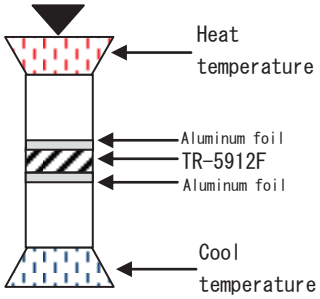
	TR-5912F
Thermal conductivity	1.1

(Unit : W/m·K)
Laser-flush method
Test temperature : 23 degree C

●Thermal resistance

	TR-5912F
Thermal resistance	1.8

(Unit : cm^2·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^2·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

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 : μg/g)
Tape area:5cm^2
Applying condition: Refer to the left table.
Heating method: 20mL vial bottle
Measurement : Quantity of volatile gas 1mL

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
●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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