

TT-Series Thermal Conductive Tapes

GENERAL USAGES:

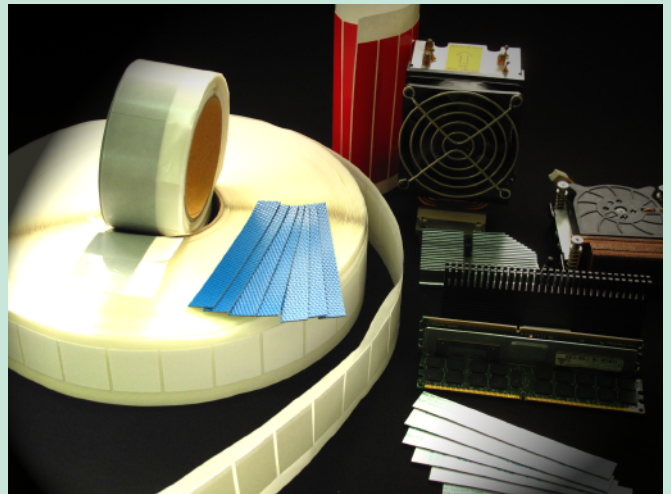
TT series is a high performance, non electrically conductive thermal conductive tape. This material reduce the thermal impedance by filling the microscopic irregularities on both the thermal solution and the integrated circuit package surface. It is a flexible solid and freestanding at room temperature without reinforcing components. The thermal performance can be maintained for 1000 hours at 130 degreeC or after 500 cycles from -25 degreeC to 125 degreeC.

BENIFITS:

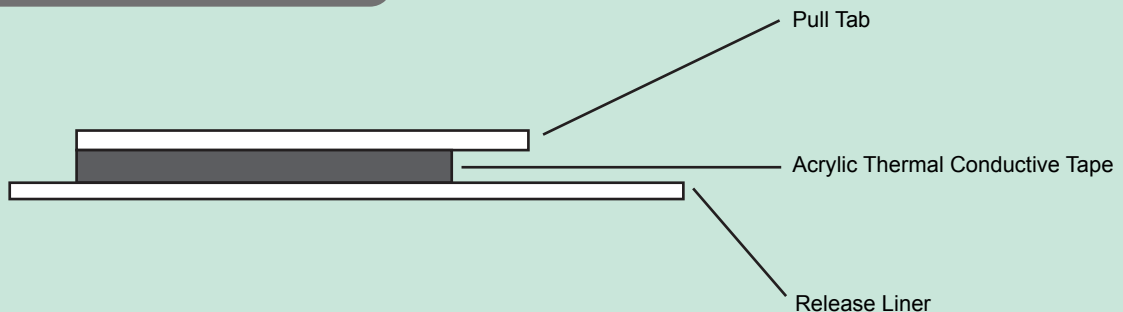
- Continuous roll package rubber
- General Thermal conductivity with competitive price
- Easy to use
- Low thermal impedance
- Self tacky

TYPICAL APPLICATIONS:

- Information products
- Laptop and Desktop PC
- Graphic card, Memory Modules



PRODUCT CONSTRUCTION:



| Backing | Adhesive | Color | Standard Roll Length | Standard Widths |
|-------------|----------|---------|----------------------|-----------------|
| Glass Fiber | Acrylic | ■ White | -- | -- |

Typical Physical Properties and Performance Characteristics

Note:

The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

| Part Number | | TT-013PC | Test Method | Remark |
|--|-------------------|---|-------------------|--------|
| Color | | Gray | Visual | |
| Characteristics | | Phase-Change Material | -- | |
| Carrier | | None - Free Film | -- | |
| Thickness (mm) | Tape | 0.13 | ASTM D-374 | |
| | Liner | 0.08 ~ 0.13 | | |
| Density (g/cm ³) | | 2.0 | ASTM D-792 | |
| Weight Loss (125 °C for 48HR) | | <0.5% | | |
| Thermal Conductivity (W/m-k) | | 3.5 | ADTMD-5470 | |
| Operation Temp. (°C) | -50 ~ | 150 (Short Term) | -- | |
| | | 125 (Long Term) | -- | |
| Phase-Change Temp (°C) | | 60 | ASTM D-3418 | |
| RoHS Compliant | | YES | SGS Certification | |
| Thermal Impedance at 70 °C (°C-cm ² /W (°C-in ² /W)) | at 60kPa (10)psi | 0.47 (0.07) | ASTM D-5470 | |
| | at 172kPa (25)psi | 0.26 (0.04) | | |
| | at 345kPa (50)psi | 0.17 (0.02) | | |
| Shelf Life | | 12 months from date of receipt by customer when stored in original carton at 22°C and 50% relative humidity | | |

1. Parameter values are not guaranteed.
2. Others technical details, contact Nernstek Service Department.

Typical Physical Properties and Performance Characteristics

Note:
The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

| Part Number | | TT-015 | | Test Method | Remark |
|-----------------------------|---|------------------------|------------------|-------------|--|
| Color | | White | | -- | |
| Adhesive Type | | Acrylic Polymer | | -- | |
| Filler | | Ceramic Powder | | -- | |
| Thickness (mm) | Tape | 0.15 | | ASTM D-3652 | |
| | Liner | 0.08~0.12 | | | |
| Density | (g/cm ³) | 1.45 | | -- | |
| Hardness | (Shore A) | 45 | | ASTM D-2240 | |
| Thermal Conductivity | (W/m-k) | 0.8 | | ASTM D-5470 | |
| Operation Temp. | (°C) | -40 ~ | 150 (Short Term) | -- | |
| | | | 90 (Long Term) | -- | |
| Insulation Strength | (Volt/mm) | 4500 | | ASTM D-149 | |
| Tensile Strength | (lbs./in) | 180 | | ASTM D-3759 | |
| Elongation | (%) | 5 | | ASTM D-3759 | |
| Static Shear Adhesion | (1kg/0.5in ²) | 22°C PASS 70°C PASS | | ASTM D-3654 | 10000 mins |
| Adhesion to Stainless Steel | (g/25.4mm) | 15 min RT | 1991 | ASTM D-3330 | 180 degree, 0.05mm Al foil 22°C, 50%RH |
| | | 72 hr RT | 2167 | | |
| Adhesion to ABS | | 15 min RT | 1536 | | |
| | | 72 hr RT | 1755 | | |
| Adhesion to PC | | 15 min RT | 1840 | | |
| | | 72 hr RT | 1950 | | |
| Adhesion to PP | | 15 min RT | 1400 | | |
| | | 72 hr RT | 1650 | | |
| Shelf Life | 12 months from date of receipt by customer when stored in original carton at 22°C and 50% relative humidity | | | | |

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Typical Physical Properties and Performance Characteristics

Note:
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| Part Number | | TT-015-A | | Test Method | Remark |
|-----------------------------|---|------------------------|------------------|-------------|--|
| Color | | Gray | | -- | |
| Adhesive Type | | Acrylic Polymer | | -- | |
| Filler | | Ceramic Powder | | -- | |
| Thickness (mm) | Tape | 0.15 | | ASTM D-3652 | |
| | Liner | 0.08~0.12 | | | |
| Density | (g/cm ³) | 1.6 | | -- | |
| Hardness | (Shore A) | 45 | | ASTM D-2240 | |
| Thermal Conductivity | (W/m-k) | 2.5 | | ASTM D-5470 | |
| Operation Temp. | (°C) | -40 ~ | 150 (Short Term) | -- | |
| | | | 90 (Long Term) | -- | |
| Insulation Strength | (Volt/mm) | >3000 | | ASTM D-149 | |
| Tensile Strength | (lbs./in) | 180 | | ASTM D-3759 | |
| Elongation | (%) | 5 | | ASTM D-3759 | |
| Static Shear Adhesion | (1kg/0.5in ²) | 22°C PASS 70°C PASS | | ASTM D-3654 | 10000 mins |
| Adhesion to Stainless Steel | (g/25.4mm) | 15 min RT | 1502 | ASTM D-3330 | 180 degree, 0.05mm Al foil 22°C, 50%RH |
| | | 72 hr RT | 1697 | | |
| Adhesion to ABS | | 15 min RT | 1391 | | |
| | | 72 hr RT | 1665 | | |
| Adhesion to PC | | 15 min RT | 1310 | | |
| | | 72 hr RT | 1628 | | |
| Adhesion to PP | | 15 min RT | 1372 | | |
| | | 72 hr RT | 1746 | | |
| Shelf Life | 12 months from date of receipt by customer when stored in original carton at 22°C and 50% relative humidity | | | | |

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Typical Physical Properties and Performance Characteristics

Note:

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| Part Number | | TT-015A-PM | Test Method | Remark |
|-----------------------------|---|------------------------|-------------|--|
| Color | | Gray | -- | |
| Adhesive Type | | Acrylic Polymer | -- | |
| Carrier | | Fiber Glass | -- | |
| Thickness (mm) | Tape | 0.15 | ASTM D-3652 | |
| | Liner | 0.06 ~ 0.14 | | |
| Density | (g/cm ³) | 2.42 | -- | |
| Hardness | (Shore A) | 42 | ASTM D-2240 | |
| Thermal Conductivity | (W/m-k) | 1.6 | ASTM D5470 | |
| Operation Temp. | (°C) | -40 ~ 150 (Short Term) | -- | |
| | | 90 (Long Term) | -- | |
| Tensile Strength | (lbs./in) | 180 | ASTM D-3759 | |
| Elongation | (%) | 5 | ASTM D-3759 | |
| Static Shear Adhesion | (1kg/0.5in ²) | 22°C PASS | ASTM D-3654 | 10000 mins |
| | | 70°C PASS | | |
| Adhesion to Stainless Steel | (g/25.4mm) | 1250 | ASTM D-3330 | 180 degree, 0.05mm Al foil 22°C, 50%RH |
| Shelf Life | 12 months from date of receipt by customer when stored in original carton at 22°C and 50% relative humidity | | | |

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Typical Physical Properties and Performance Characteristics

Note:
The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

| Part Number | | TT-025 | | Test Method | Remark |
|-----------------------------|---|------------------------|------------------|-------------|--|
| Color | | White | | -- | |
| Adhesive Type | | Acrylic Polymer | | -- | |
| Carrier | | Fiber Glass | | -- | |
| Thickness (mm) | Tape | 0.25 | | ASTM D-3652 | |
| | Liner | 0.13 | | | |
| Density | (g/cm ³) | 1.51 | | -- | |
| Hardness | (Shore A) | 45 | | ASTM D-2240 | |
| Thermal Conductivity | (W/m-k) | 1.0 | | ASTM D-5470 | |
| Operation Temp. | (°C) | -40 ~ | 150 (Short Term) | -- | |
| | | | 90 (Long Term) | -- | |
| Insulation Strength | (Volt/mm) | 6500 | | ASTM D-149 | |
| Tensile Strength | (lbs./in) | 180 | | ASTM D-3759 | |
| Elongation | (%) | 5 | | ASTM D-3759 | |
| Static Shear Adhesion | (1kg/0.5in ²) | 22°C PASS 70°C PASS | | ASTM D-3654 | 10000 mins |
| Adhesion to Stainless Steel | (g/25.4mm) | 15 min RT | 2090 | ASTM D-3330 | 180 degree, 0.05mm Al foil 22°C, 50%RH |
| | | 72 hr RT | 2275 | | |
| Adhesion to ABS | | 15 min RT | 1612 | | |
| | | 72 hr RT | 1842 | | |
| Adhesion to PC | | 15 min RT | 1932 | | |
| | | 72 hr RT | 2047 | | |
| Adhesion to PP | | 15 min RT | 1470 | | |
| | | 72 hr RT | 1732 | | |
| Shelf Life | 12 months from date of receipt by customer when stored in original carton at 22°C and 50% relative humidity | | | | |

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Typical Physical Properties and Performance Characteristics

Note:
The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

| Part Number | | TT-025-A | | Test Method | Remark |
|-----------------------------|---|------------------------|------|-------------|--|
| Color | | Gray | | -- | |
| Adhesive Type | | Acrylic Polymer | | -- | |
| Carrier | | Fiber Glass | | -- | |
| Thickness (mm) | Tape | 0.25 | | ASTM D-3652 | |
| | Liner | 0.08~0.13 | | | |
| Density | (g/cm ³) | 1.6 | | -- | |
| Hardness | (Shore A) | 40 | | ASTM D-2240 | |
| Thermal Conductivity | (W/m-k) | 2.5 | | ASTM D-5470 | |
| Operation Temp. | (°C) | -40 ~ 150 (Short Term) | | -- | |
| | | 90 (Long Term) | | -- | |
| Insulation Strength | (Volt/mm) | >4000 | | ASTM D-149 | |
| Tensile Strength | (lbs./in) | 180 | | ASTM D-3759 | |
| Elongation | (%) | 5 | | ASTM D-3759 | |
| Static Shear Adhesion | (1kg/0.5in ²) | 22°C PASS 70°C PASS | | ASTM D-3654 | 10000 mins |
| Adhesion to Stainless Steel | (g/25.4mm) | 15 min RT | 1731 | ASTM D-3330 | 180 degree, 0.05mm Al foil 22°C, 50%RH |
| | | 72 hr RT | 1953 | | |
| Adhesion to ABS | | 15 min RT | 1603 | | |
| | | 72 hr RT | 1911 | | |
| Adhesion to PC | | 15 min RT | 1515 | | |
| | | 72 hr RT | 1868 | | |
| Adhesion to PP | | 15 min RT | 1490 | | |
| | | 72 hr RT | 1842 | | |
| Shelf Life | 12 months from date of receipt by customer when stored in original carton at 22°C and 50% relative humidity | | | | |

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