

STAYSTIK® 501

Silver Filled Electrically Conductive Film

DESCRIPTION

These thermoplastic adhesive films are designed for use in a variety of electronic applications. These materials are ideal for applications where resistance to high temperature excursions is desired. These film adhesives can be used for die attach in solder sealed, hermetic packages and have demonstrated low RGA moisture readings. This high temperature, reworkable thermoplastic system offers many unique advantages in applications traditionally ill-suited to thermoset adhesives.

Fully Polymerized Resin – No “Cure”
Easily Reworkable – No Outgassing
Bonds in Seconds – Not in Hours or Minutes
Low Modulus Reduces Stress to Bonded Materials

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

TYPICAL PROPERTIES

Typical Properties	501	611	415	811
Filler Material	Silver	AlN	None	Alumina
Attach Temperature Range	300 to 375 °C	300 to 375 °C	300 to 375 °C	300 to 375 °C
Continuous Use Range	-65 to 200 °C	-65 to 200 °C	-65 to 200 °C	-65 to 200 °C
Max Excursion Temperature	400°C	400°C	400°C	400°C
Thermal Conductivity (W/mK)	≥ 3.0	≥ 1.0	≤ 0.25	≤ 0.6
Volume Resistivity (Ohm-cm)	≤ 5 x 10 ⁻⁴	≥ 1 x 10 ⁺⁹	≥ 1 x 10 ⁺⁹	≥ 1 x 10 ⁺⁹
Die Shear Adhesion @ 25 °C	≥ 3500 psi	≥ 3500 psi	≥ 3500 psi	≥ 3500 psi
Elastic Modulus (psi)	≥ 360,000	≥ 360,000	≥ 360,000	≥ 360,000
Glass Transition Temp. (T _g)	180 to 185 °C	180 to 185 °C	180 to 185 °C	180 to 185 °C

Typical Properties	501	611	415	811
Shelf Life @ 25 °C	1 year	1 year	1 year	1 year

FILM AVAILABILITY

1. Sheet material is available in thicknesses of 0.0015", 0.003", and 0.005".
Sheet sizes range from 4" x 4" up to a maximum of 10" x 12".
2. Preforms: same thicknesses apply. We have a fully equipped stamping facility on site. Provide your dimensions or drawing.
3. Rolls / Tape: We have the capability to provide long strips of film adhesive slit to 0.250" or wider for continuous feed bonding machines.

BONDING

Bond film material at 300 to 375 °C. Pressure required is dependent on temperature and dwell time at temperature. Lower temperatures require higher pressures. Higher temperatures require little or no pressure. It is critical that both interfaces to be bonded reach the required temperature. Typical pressures for most applications range from 1 to 10 psi. Time required to form a bond will depend on the application. Bonds can be formed in seconds under optimum conditions. Typical bond times are 10 to 60 seconds. Equipment used for heating can range in sophistication from a hot plate to a box oven or continuous feed belt furnace.

SAFETY & WARNING

It is recommended that the company/operator read and review the Safety Data Sheets for the appropriate health and safety warnings before use. **Safety Data Sheets are available.**

STORAGE

Material should be stored at room temperature (25 °C). Do not freeze. It is recommended that film be kept in nitrogen cabinet or desiccator to prevent exposure to moisture. If the material is kept beyond the recommended shelf life, it is not necessarily unusable. But, a quality control should be performed on the properties relevant to the application.

CONTACT INFORMATION

To confirm this document is the most recent version, please contact
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Also read carefully warning and safety information on the Safety Data Sheet. This data sheet contains technical information required for safe and economical operation of this product. READ IT THOROUGHLY PRIOR TO PRODUCT USE. Emergency safety directory assistance: US 1 202 464 2554, Europe + 44 1235 239 670, Asia + 65 3158 1074, Brazil 0800 707 7022 and 0800 172 020, Mexico 01800 002 1400 and (55) 5559 1588

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