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**EPOXY FILM ADHESIVE**  
**ESP8550**

**Flexible "Stress-Free"  
 Melt-Bondable Epoxy Film  
 Electrical Conductive Adhesive  
 Moisture-Temperature Resistant  
 IDEAL FOR:**

- Large Area Die Attach**
- Mismatched CTE Substrate Attach**
- Electrical & Thermal Ground Plane Bonding**

**DESCRIPTION:**

Tack-Free ESP8550 is a solvent resistant, silver-filled, epoxy film adhesive designed for bonding die and substrate to a mismatched substrate or carrier. This novel, B-staged electrically conductive adhesive can be induced to flow at 80-150°C and cured like paste adhesive without pressure. The dry, tack-free handling of the film makes it ideal for an automated pick and place assembly.

ESP8550 has excellent thermal conductivity and its low Tg adhesive (-60°C) imposes minimum thermal stress on bonded parts during thermal cycling or shock testing.

**AVAILABILITY:**

ESP8550 is available in sheet sizes or as custom preforms. Standard thicknesses are 0.003" and 0.006". Special thicknesses are available.

**APPLICATION PROCEDURE**

- ( 1 ) Remove film from protective paper.
- ( 2 ) Cut to desired size.
- ( 3 ) Place and tack on substrate >80°C without pressure.
- ( 4 ) Place and situate parts with placement pressure. Cure according to one of the recommended schedules.

**TYPICAL PROPERTIES\***

Electrical Resistivity ( 150 °C/ 10 min. )	<4x10 <sup>-4</sup> ohm-cm
Dielectric Strength (Volts/mil)	Not Applicable
Glass Transition Temp.(°C)	-60
Current Carrying Capabilities	>200A/mm <sup>2</sup>
Lap-Shear Strength	N/A
Device Push-off Strength	1000 psi
	6.9 N/mm <sup>2</sup>
Hardness (Type)	82 (A)
Cured Density (gm/cc)	3.5
Thermal Conductivity	45 Btu-in/hr-ft <sup>2</sup> -°F
	6.4 W/m-°C
Linear Thermal Expansion	110
Coeff. (ppm/°C)	
Maximum Continuous	150
Operation Temp. (°C)	

\* Properties given are typical values and not intended for use in preparing specifications. The user is advised to evaluate the product in the manner the product is intended to be used in manufacturing and in the final product.

**CURE SCHEDULES:**

<u>Temperature</u>	<u>Time</u>	<u>Pressure</u>
80°C	8 hr	5-10 psi
125°C	2 hr	5-10 psi
150°C	1 hr	5-10 psi
175°C	35 min	5-10 psi
200°C	20 min	5-10 psi

The die or component can also be tacked on the substrate at 80°C or higher with placement pressure. When a fillet around the edge of the die or component is observed, the pressure can be released for the rest of the bonding cycle.

**SHELF LIFE:**

<u>Storage temperature</u>	<u>Shelf Life</u>
0-5°C	1yr in sealed package

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