

127-03-F

B-STAGED THERMALLY CONDUCTIVE TRANSFERABLE ADHESIVE FILM

DESCRIPTION:

127-03-F is a B-staged, thermally conductive, transferable, epoxy adhesive film. Some applications for 127-03-F include, but are not limited to, die attachment, printed circuit board fabrication, advanced material composites, LED attachment and heat sink bonding. The chemistry in 127-03 features excellent thermal stability and high temperature properties and is able to absorb stress when bonding mismatched CTE substrates. This product has been formulated to have improved handling in the B-staged form and is available in thicknesses from 1 to 5 mils (see product codes below). Other thicknesses are available upon request.

UNIQUE FEATURES

- * Excellent Thermal Conductivity
- * Easy Liner Release
- * Excellent Chemical Resistance
- * Minimal Flow During Cure
- * Low CTE
- * Excellent High Temperature Performance

GENERAL FILM DESCRIPTION

Substrate Type: PET Release Liner
 Conductive Coating Type: Aluminum Nitride/Polymer

Product Code	Adhesive Thickness (mils)
127-03-F1	1
127-03-F2	2
127-03-F3	3
127-03-F4	4
127-03-F5	5

TYPICAL CURED PROPERTIES

Property	Value	Units
Volume Resistivity	1×10^{16}	$\Omega - \text{cm}$
Dielectric Constant (1 KHz)	4.1	-
Dielectric Constant (1 MHz)	3.9	-
Dissipation Factor (1 KHz)	0.027	-
Dissipation Factor (1 MHz)	0.038	-
Thermal Conductivity	4.3	W/mK
Operating Temperature	-55 to 230	$^{\circ}\text{C}$
Peak Temperature	325	$^{\circ}\text{C}$
Glass Transition Temperature (Tg)	150	$^{\circ}\text{C}$
Coefficient of Thermal Expansion - Below Tg	50×10^{-6}	In/in/ $^{\circ}\text{C}$
	- Above Tg	60×10^{-6}
T-Shear Strength, min.	2000	psi
Peel Strength (copper to copper @ 90 $^{\circ}$)	9	Pli

CURING GUIDELINES

<u>Temperature (°C)</u>	<u>Time (min.)</u>
160	60
175	30
200	15

These temperatures and times are presented as a guide only. The end-user is encouraged to experiment to determine optimum curing schedule.

HANDLING AND STORAGE

This product is shipped frozen and should be stored frozen to optimize shelf life. **Care should be taken in handling frozen/cold sheets, they are more likely to crack at this point (avoid flexing film if stored at -40°C). Allow material to warm to room temperature before handling.** Please refer to Applying/Transfer Procedure for more details.

SHELF LIFE

1 month at 25°C or 3 months at -10°C.

APPLYING/TRANSFER PROCEDURE

To ensure a good bond, the bonding surfaces should be free of any contaminants such as oils, greases, fingerprints, etc.

1. Remove the film from cold storage and allow it to warm to room temperature.
2. After the film has been warmed to room temperature, remove release liner from one side.
3. Preheat substrate to 50°C to 70°C.
4. Locate the adhesive onto the preheated substrate. Smooth out any trapped air by hand, with a roller or any other smoothing device. Some pressure is advisable to ensure intimate contact between the adhesive and substrate.
5. Allow the substrate to cool to room temperature (cooler is better) and remove release liner. This is very important to allow for easy and clean separation of the final release liner from the adhesive.
6. Place the two substrates to be bonded together under uniform pressure. It is advisable to preheat the device(s) being used to apply pressure. An unheated device will result in longer cure times and less uniformity of cure.
7. Cure at the desired cure schedule. Refer to the cure schedules above for guide information.

All technical information is based on data obtained by CMI personnel and is believed to be reliable. No warranty is either expressed or implied with respect to results or possible infringements on patents.

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