ELECTRONICS, INC.
44 FARRAND STREET
BLOOMFIELD, NJ 07003
(973) 748–5089
http://www.nteinc.com

NTE425
Thermal Interface Pad
Self−Adhesive, 1.65” x 1.65”

Description:

The NTE425 is designed as a pressure sensitive, thermal interface material for use between a high performance processor and a heat sink. NTE425 is a thermally conductive, inherently tacky, +55°C phase change composite supplied on a polyester carrier liner with high visibility protective tabs.

Features:

- Thermal Impedance: 0.08°C−in^2/W (@ 25psi)
- Inherently Tacky, +55°C Phase Change Composite
- High Visibility Protective Tabs
- Pressure Sensitive Phase Change Thermal Interface Material

Typical Applications:

- Computer and Peripherals
- High Performance Computer Processors
- Graphic Cords
- Power Modules

Typical Properties:

Physical Property	Typical Value	Metric Value	Test Method
Color	Black	Black	Visual
Reinforcement Carrier	None	None	***
Thickness	0.003”	0.077mm	ASTM D374
Continuous Use Temperature	+248°F	+120°C	***
Phase Change Temperature	+131°F	+55°C	DSC
Electrical	**Typical Value**	**Metric Value**	**Test Method**
Flame Rating	94 V−O	94 V−O	U.L.
Thermal	**Typical Value**	**Metric Value**	**Test Method**
Thermal Conductivity (Note 2)	0.7W/m−K	0.7W/m−K	ASTM D5470

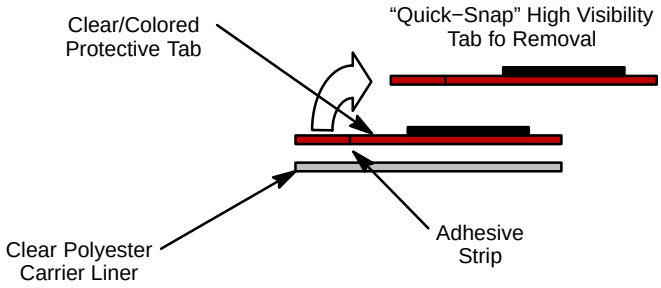
Thermal Impedance vs. Pressure					
Pressure, psi	10	25	50	100	200
TO220 Thermal Performance	0.60°C/W	0.53°C/W	0.46°C/W	0.40°C/W	0.35°C/W
Thermal Impedance (Note 1)	0.09°C−in^2/W	0.08°C−in^2/W	0.07°C−in^2/W	0.06°C−in^2/W	0.05°C−in^2/W

Note 1. The ASTM D5470 (Modified) test fixture was used with the material sample conditioned at +60°C prior to test. The recorded value includes interfacial thermal resistance. These values are given to the customer for reference only. Actual application thermal performance is primarily controlled via surface “wet−out” and material “bond−line” or thickness. Within the application, these are directly related to surface roughness, flatness and pressure applied.

Note 2. This is a measured thermal conductivity of the coating. Since the coating is a phase change compound, it will respond to heat and pressure induced stresses. The overall thermal conductivity of post−phase change material is highly dependent upon the heat and pressure applied. These characteristics are not accounted for in ASTM D5470.

Application Methods:

Hand−apply the NTE425 to a room temperature heat sink. The NTE425 pad exhibits inherent tack and can be hand−applied similar to an adhesive pad. The tab liner can remain on the heat sink and pad throughout shipping and handling until it is ready for final assembly.



Installation Instructions:

Step 1: Prepare heat sink for removal.

Step 2: Remove old thermal material via repeated scraping action with a plastic or wooden device. This device can be used to peel the material away without scratching the heat sink surface.

Step 3: With most of the old material removed, begin to clean the remaining residue and heat sink surface with Isopropyl Alcohol. Use a cotton swab or lint free wipe to clean the heat sink surface to a polished shine.

Step 4: Once the cleaning solvent has dried, the new heat sink interface pad is ready for application.

Step 5: Apply the NTE425 by placing the material to the heat sink interface. Using finger pressure, wipe from corner to corner to minimize entrapment of air at the interface. Continue to use a wiping action to ensure full "wet−out" of the NTE425 pad to the interface of the heat sink.

Step 6: Peel away protective liner from thermal pad and re−install heat sink being careful not to damage or contaminate thermal pad.

Special Guidelines:

Pay special attention to the following guidlines while installing a processor:
Caution: *The processor may be destroyed if* ***all*** *of these guidelines are not followed.*

- Never operate the processor without having an approved heat sink fully and properly attached with the appropriate thermal interface. In order to function, the heat sink must be attached to the socket with the supplied clip.
- Make sure the heat sink used has been tested for the speed rating of the processor used.
- Never run a processor at megahertz speeds greater than the rated megahertz speed.
- Always use an appropriate amount of thermal phase−change compound (Note 3).
- ***Never*** power up the board with the processor heat sink fans unplugged.
- Plug the fans into the fan header connector on the motherboard or power supply as specified by the motherboard manual.
- If the heat sink needs to be removed from the processor, the old phase−change material must be completely removed from the heat sink and processor. Then, new material (NTE425) must be installed (Note 4).

Note 3. For production builds, thermal grease is **never** an appropriate solution. Thermal grease can be used for short−term testing and validation. When used for a longer period, thermal grease has a tendency to be pumped out from the gap between the processor and the heat sink due to the differing thermal expansion and contraction rates of the aluminum heat sink and the processor.

Note 4. Only use a soft plastic scraper to gently remove the old phase−change material from the heat sink and/or the processor.