

# COOLPhase®

## PHASE CHANGE THERMAL PADS

The COOLPhase® series features high-performance polymer matrix materials, renowned for their exceptional wettability. This characteristic significantly reduces thermal contact resistance between heat-generating and heat-dissipating surfaces.

Uniquely designed to operate optimally at temperatures between 50°C and 60°C, COOLPhase® materials exhibit a transformative property. When softened within this temperature range, they naturally

flow to fill any air gaps, ensuring efficient thermal transfer. This process allows for exceptional long-term reliability, a key advantage over traditional thermal pastes that may degrade over time.

COOLPhase® sets a new standard in thermal management solutions, providing durability and effective heat transfer for a wide range of applications.

## Features

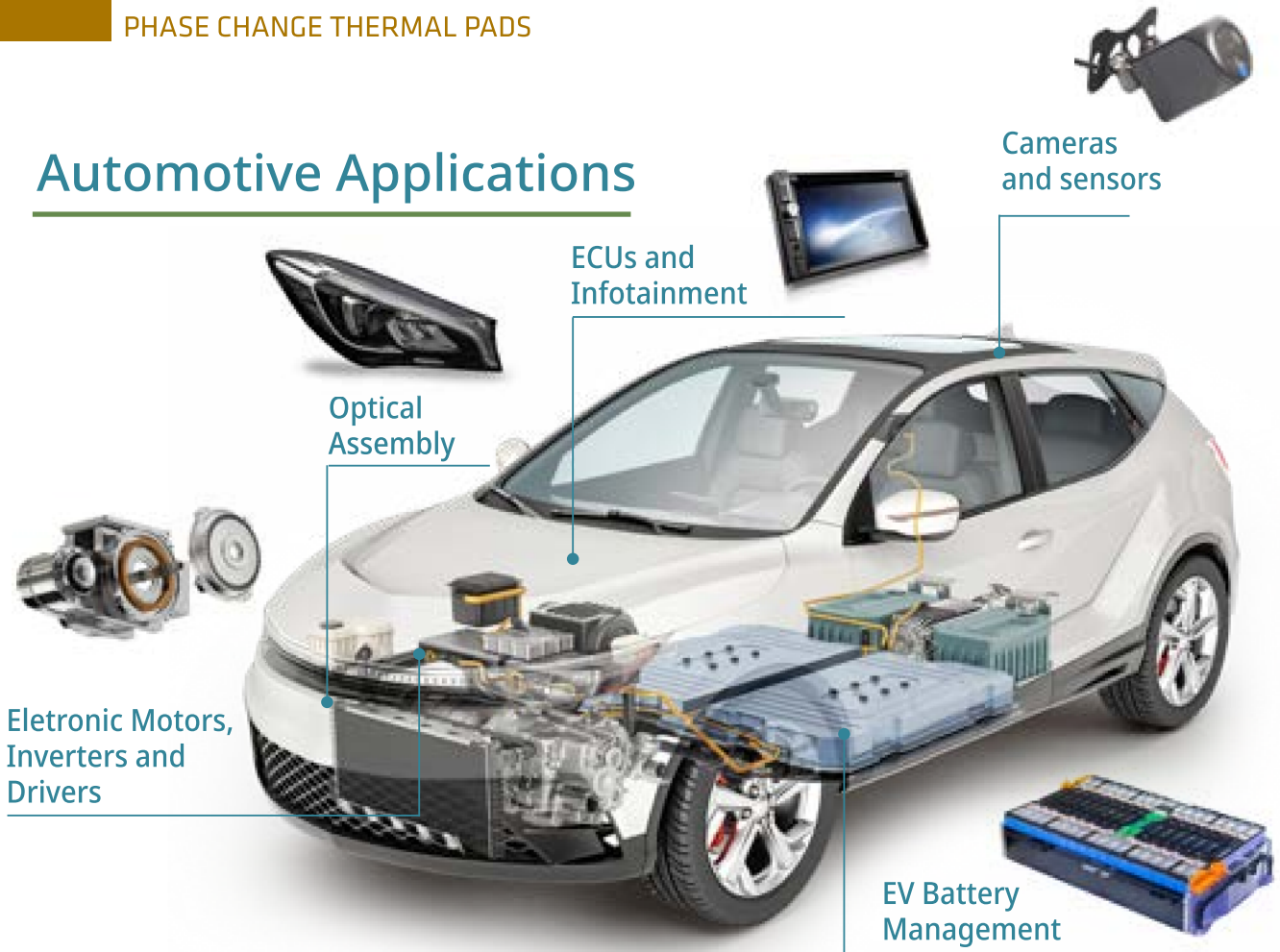
- High-Thermal Conductivity
- Low Contact Resistance
- Easy to assemble
- RoHs and REACH compliant

## Delivery Format

- Sheets of 7.9" x 15.9"
- Die-cut parts
- Other formats available upon request



## Automotive Applications



## Industrial and electronic equipment

- LED Lighting
- Cameras, Laptops, Tablets e Mobile devices
- IGBT modules and electronic components such as MOSFETs, Transistors and ICs



## Telecommunications

- Optical Transceivers
- Base Stations
- Servers
- Antennas and IoT Devices
- Infrastructure for 5G networks

| PROPERTIES                     | Standard          | Unit                  | PH 1038                | PH 1045                | PH 1055                |
|--------------------------------|-------------------|-----------------------|------------------------|------------------------|------------------------|
| <b>Mechanical / Mechanical</b> |                   |                       |                        |                        |                        |
| Color                          | Visual            | -                     | Grey                   | Grey                   | Grey                   |
| Shelf Life                     | -                 | years                 | 2                      | 2                      | 2                      |
| Available Thicknesses          | ASTM D374         | mm                    | 0.25 to 1.00           | 0.25 to 1.00           | 0.25 to 1.00           |
| Density                        | ASTM D792         | g/cm <sup>3</sup>     | 1.30                   | 1.35                   | 13.50                  |
| Phase Change Temperature       | -                 | °C                    | 50 to 60               | 50 to 60               | 50 to 60               |
| Flammability Class             | UL 94             | -                     | V0                     | V0                     | V0                     |
| <b>Thermal</b>                 |                   |                       |                        |                        |                        |
| Thermal Conductivity           | ASTM D5470        | W/m.k                 | 3.8                    | 4.5                    | 5.5                    |
| Volume Resistivity             | ASTM D257         | ohm-cm                | 3.0 x 10 <sup>12</sup> | 3.0 x 10 <sup>12</sup> | 3.0 x 10 <sup>12</sup> |
| Thermal impedance              | ASTM D5470 @70psi | °C-in <sup>2</sup> /W | 0.13                   | 0.20                   | 0.55                   |
| Operating Temperature          | ASTM D5470        | °C                    | -45 to 125             | -45 to 125             | -45 to 125             |
| <b>Electrical</b>              |                   |                       |                        |                        |                        |
| Dielectric Strength            | ASTM D149         | kV/mm                 | 3.00                   | 4.00                   | 4.00                   |

\*Other thicknesses and performance levels under request

## Application & Use Instructions

1. Prepare the surface: remove any dust, debris or residue from the contact surfaces. If necessary, use alcohol and a lint-free cloth.
2. Peel-off the liner: remove the protective film on one side of the COOLPhase®
3. Apply the COOLPhase® to the component: carefully align the pad over the component, making sure it covers its entire surface. Apply

even pressure to the pad, pressing it down firmly to ensure good contact.

4. Remove the remaining liner: carefully peel off the remaining protective film to expose the top surface of the COOLPhase®

## Removal Instructions

1. Gently lift the COOLPhase®: using a plastic or non-abrasive tool, such as a plastic spudger, carefully lift one edge of the pad. Avoid using metal tools, as they can damage the component.
2. Peel off the pad: slowly peel off the COOLPhase® from the electronic component, using gentle and even pressure. If the pad is stuck firmly, you can use a little heat, such as from an hair dryer

or a heat gun to soften the adhesive and make it easier to remove.

3. Clean the component: once the COOLPhase® is removed, you may need to clean the component surface to remove any residue. You can use a lint-free cloth with isopropyl alcohol (IPA) to clean the component surface thoroughly.