3M™ Thermally Conductive Silicone Interface Pad 5515S

Product Description
3M™ Thermally Conductive Silicone Interface Pad 5515S is the same as 3M™ Thermally Conductive Interface Silicone Pad 5515, but with a thin 13 µm polyimide film laminated onto it to help enhance the electrical insulation performance, anti-abrasion and ease of handling and die-cutting. The main function of this product is to help provide a preferential heat transfer path between heat generating components and heat sinks, heat spreaders or other cooling devices.

Features and Benefits
- Thin for lower thermal impedance, 0.20mm and 0.25mm thick products available
- High thermal conductivity
- Excellent electrical insulation properties
- Good dimensional stability for easy and convenient converting
- Anti-abrasion
- Good conformability performance
- High pressure relaxation
- Inherent surface tack allows pre-assembly
- This product is available in a roll format

Product Uses
This product can be used for heat management of electronic devices and joining/stacking parts in electronic components. Mechanical fastening such as clamp, bracket, screw and additional tapes and adhesives bonding can be used in parallel with this pad.

Product Construction
3M™ Thermally Conductive Silicone Interface Pad 5515S

Removable Film Liner
13 µm PI Film Carrier
Thermally Conductive Silicone Elastomer
Removable Film Liner

Standard thickness (Silicone layer + PI film): 0.25 mm

Application Ideas
- IC Packaging Heat Conduction
- Insulation TIM between Power and TR and HS
- Assembly of Metal/Ceramic Heat Sink Device
- Spacer for Battery Module/Pack
- COF Chip Heat Conduction
- LED Module/Board TIM
- HD TV Address IC Chip and Scan Module
- Thin Gap Filling between between Board, Module and Chassis
Typical Physical Properties and Performance Characteristics

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

<table>
<thead>
<tr>
<th>Property</th>
<th>3M™ Thermally Conductive Silicone Interface Pad 5515S-20 and 5515S-25 Value</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness (mm)</td>
<td>0.2 / 0.25 (±0.025mm)</td>
<td>–</td>
</tr>
<tr>
<td>Thermal Conductivity (W/mK)*</td>
<td>2.7</td>
<td>QTM-500</td>
</tr>
<tr>
<td>Density (g/cm³, @ 25°C)*</td>
<td>2.8 (±0.25)</td>
<td>TS-TM-441</td>
</tr>
<tr>
<td>Hardness (Shore 00)*</td>
<td>90 (±10)</td>
<td>ASTM D2240</td>
</tr>
<tr>
<td>Volume Resistivity (Ω-cm)*</td>
<td>8.6 x 10¹⁴</td>
<td>ASTM D257</td>
</tr>
<tr>
<td>Dielectric Strength (kV/mm)*</td>
<td>17.7</td>
<td>ASTM D149</td>
</tr>
<tr>
<td>Dielectric Constant*</td>
<td>100 Hz, 1 KHz, 1 Mhz</td>
<td>ASTM D150</td>
</tr>
<tr>
<td></td>
<td>18.4, 18.2, 18.3</td>
<td></td>
</tr>
</tbody>
</table>

*3M™ Thermally Conductive Interface Silicone Pad 5515S-25 tested.

Heat resistance of 3M™ Thermally Conductive Interface Silicone Pad 5515S-25

<table>
<thead>
<tr>
<th>Duration</th>
<th>Initial</th>
<th>100</th>
<th>500</th>
<th>1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Conductivity (W/mK)</td>
<td>2.7</td>
<td>2.7</td>
<td>2.7</td>
<td>2.7</td>
</tr>
<tr>
<td>Hardness (Shore 00)</td>
<td>93</td>
<td>94</td>
<td>94</td>
<td>94</td>
</tr>
<tr>
<td>Appearance</td>
<td>–</td>
<td>No effect</td>
<td>No effect</td>
<td>No effect</td>
</tr>
</tbody>
</table>

Aged at 130°C in high temperature chamber.

Application Techniques

- Positioning is dependent upon the total amount of surface contact developed. Firm application pressure helps develop better contact.
- To obtain optimum thermal conductivity, the wetting surfaces must be maximized. For better contact, clean, dry and well unified surface condition is recommended. Typical surface cleaning solvents are isopropyl alcohol and water (rubbing alcohol) or heptane. Note: Be sure to follow manufacturer’s safety precautions and directions for use when using solvents.
- Ideal application temperature range is from 0°C to 40°C. Initial application to surfaces at temperatures below 0°C is not recommended because the pad becomes too firm to be wetted readily. However, once properly applied, low temperature holding is generally satisfactory.
Storage and Shelf Life
The shelf life of 3M™ Thermally Conductive Silicone Interface Pad 5515S is 12 months from the manufacture date when stored in original packaging at 21°C (70°F) and 50% relative humidity.

Regulatory
For regulatory information about this product, contact your 3M representative.

Technical Information
The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

Product Use
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