PRODUCT DATA SHEET

InFORMS®
Reinforced Matrixed Solder Composite

Introduction
InFORMS® are reinforced matrixed solder composites. This process produces a reinforced solder fabrication with improved bondline thickness. A uniform bondline maximizes the thermal and mechanical reliability in the solder joint, therefore, producing solder joints that are higher in reliability.

InFORMS® can be manufactured into a wide variety of shapes, including rectangles, discs, and custom shapes, to suit specific application requirements. InFORMS® are also available in ribbon* form for automated assembly.

Product Advantages
InFORMS® offer dramatically improved handling when compared to conventional solder alloy or indium sheet, foil, ribbon, or large preform materials. InFORMS® also offer increased tensile and compressive strength via the substrate materials while retaining the unique attributes of the outer layer metal (e.g., the softness, ductility, and other advantages of indium).

Applications
InFORMS® provide engineers with an enhanced material for the development of new, or the improvement of existing, applications. They can be used in applications in which there is a significant CTE mismatch between materials or where there is a high thermal and mechanical demand. An example of one such application is in the manufacture of IGBT modules when bonding the DBC to the base plate. InFORMS® can be manufactured in a wide variety of alloys that can be tailored to specific product requirements.

Dimensional Specifications
InFORMS® can be manufactured to meet most standard preform configurations. The geometrical tolerances are not affected by the composite within the solder. The table below lists the standard configurations offered.

Standard Configurations

<table>
<thead>
<tr>
<th>Description</th>
<th>Standoff (Microns)</th>
<th>Part Dimensions (x and y) (Millimeters)</th>
<th>Part Dimensions (z) (Microns)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESM02</td>
<td>50</td>
<td>&gt;1.9 per side</td>
<td>&gt;100</td>
</tr>
<tr>
<td>ESM03</td>
<td>75</td>
<td>&gt;1.9 per side</td>
<td>&gt;125</td>
</tr>
<tr>
<td>SM04</td>
<td>100</td>
<td>3.5–11 per side</td>
<td>&gt;150</td>
</tr>
<tr>
<td>LM04</td>
<td>100</td>
<td>&gt;11 per side</td>
<td>&gt;150</td>
</tr>
<tr>
<td>LM06</td>
<td>150</td>
<td>&gt;11 per side</td>
<td>&gt;200</td>
</tr>
<tr>
<td>LM08</td>
<td>200</td>
<td>&gt;11 per side</td>
<td>&gt;250</td>
</tr>
<tr>
<td>ESM10</td>
<td>250</td>
<td>&gt;3 per side</td>
<td>&gt;300</td>
</tr>
</tbody>
</table>

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All of Indium Corporation’s solder paste and preform manufacturing facilities are IATF 16949:2016 certified. Indium Corporation is an ISO 9001:2015 registered company.

From One Engineer To Another*
Contact our engineers: askus@indium.com
Learn more: www.indium.com

Challenge
Uneven solder bondline thickness between the substrate and baseplate of an IGBT module causes stress concentration at the thinner sections as shown here:

Solution InFORMS®

Summary
InFORMS® are solder preforms or ribbon* with a reinforcing matrix that improves the strength of the solder material and provides dependable standoff heights. This combination of benefits imparts the reliability and performance in many electrical components.

Safety Data Sheets
Please refer to the SDS document within the product shipment, or contact our local team to receive a copy.

*Patent pending.