**PRODUCT DATA SHEET**

**InFORMS®**

**Reinforced Matrixed Solder Composite**

**Introduction**

InFORMS® are reinforced matrixed solder composites. This process produces a reinforced solder fabrication with improved strength and creates a more consistent 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>LM04</td>
<td>100</td>
<td>&gt;10 per side</td>
<td>&gt;150</td>
</tr>
<tr>
<td>LM06</td>
<td>150</td>
<td>&gt;10 per side</td>
<td>&gt;200</td>
</tr>
<tr>
<td>LM08</td>
<td>200</td>
<td>&gt;10 per side</td>
<td>&gt;250</td>
</tr>
<tr>
<td>SM04</td>
<td>100</td>
<td>2.5–10 per side</td>
<td>&gt;150</td>
</tr>
<tr>
<td>ESM03</td>
<td>75</td>
<td>.75–2.5 per side</td>
<td>&gt;125</td>
</tr>
<tr>
<td>ESM02</td>
<td>50</td>
<td>.75–2.5 per side</td>
<td>&gt;100</td>
</tr>
</tbody>
</table>

**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**

The SDS for this product can be found online at [http://www.indium.com/sds](http://www.indium.com/sds)

*Patent pending.*

**From One Engineer To Another**

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Learn more: www.indium.com