

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.

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

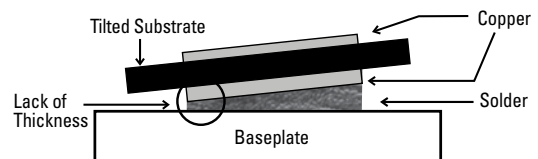
InFORMS[®] can be manufactured to meet most standard preform configurations. The geometrical tolerances are not affected by the composite within the solder. The table below lists the standard configurations offered.

Standard Configurations

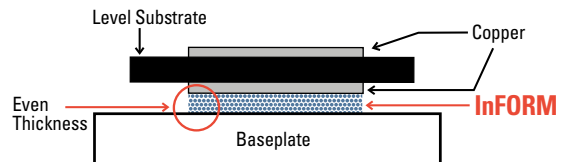
Description	Stand-off	Solder Preform Requirements	
		Part Dimensions (x and y)	Part Dimensions (z)
LM04	0.004"	>0.4" per side	>0.006"
LM06	0.006"	>0.4" per side	>0.008"
LM08	0.008"	>0.4" per side	>0.010"
SM04	0.004"	>0.1" and <0.4" per side	>0.006"

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 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>

Also available: solder preforms, solder wire, solder ribbon, solder paste, solder spheres, solder fluxes, solder ingot, and other solder fabrications.

This product data sheet is provided for general information only. It is not intended, and shall not be construed, to warrant or guarantee the performance of the products described which are sold subject exclusively to written warranties and limitations thereon included in product packaging and invoices. All Indium Corporation's products and solutions are designed to be commercially available unless specifically stated otherwise.

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