This Sheet Has Been Replaced

Abstract

Chip Carrier With Protective Coating For Circuitized Surface

A chip carrier is disclosed which includes a chip carrier substrate and at least one semiconductor chip mounted in a flip chip configuration, via solder balls, on a circuitized surface of the chip carrier substrate. The solder balls are encapsulated in a first encapsulant having a composition which includes an epoxy. In addition, at least a portion of the circuitry on the circuitized surface is encapsulated in a second encapsulant having a composition which includes a urethane, and which composition is chosen so that the second encapsulant exhibits a modulus of elasticity which is equal to or less than about 69.10^6 N/m^2. As a consequence, the second encapsulant exhibits neither internal cracks, nor interfacial cracks at the interface with the first encapsulant, nor does the second encapsulant delaminate from the circuitized surface, when the chip carrier is thermally cycled.