METHOD FOR ENCAPSULATING INTERMEDIATE CONDUCTIVE ELEMENTS CONNECTING A SEMICONDUCTOR DIE TO A SUBSTRATE AND SEMICONDUCTOR DEVICES SO PACKAGED

ABSTRACT

A method for packaging semiconductor device assemblies. An assembly is formed which includes a semiconductor die, a tape positioned over the active surface of the die, and a substrate element positioned on an opposite side of the tape from the die. Bond pads of the die are exposed through a slot formed through the tape and an aligned an opening formed through the substrate element facilitate the extension of intermediate conductive elements from the bond pads and through the slot and opening, to corresponding contact areas on the substrate element. One or both ends of the slot extend beyond an outer periphery of the die to facilitate introduction of an encapsulant material into a channel or receptacles defined by the slot, opening, and active surface of the semiconductor die. Prior to encapsulation, the side of the opening of the substrate element is sealed opposite the tape with a coverlay to contain the encapsulant material within the channel or receptacle. Assemblies and packages formed by the method are also disclosed.

[Figure 1]