ABSTRACT

SEMICONDUCTOR PACKAGE HAVING HEAT SINK ATTACHED TO PRE-MOLDED CAVITIES AND METHOD FOR CREATING THE PACKAGE

A new method and package is provided for face-up packaging of semiconductor devices. The semiconductor device is mounted over the surface of a semiconductor device support surface using conventional methods of device packaging up through device bond wire interconnect to electrical traces on the surface of the semiconductor device support surface over which the device is mounted. An internal mold cap is formed over the device, the internal mold cap has an opening exposing the surface of the device. An external mold cap is formed surrounding the internal mold cap with a cavity separating the external mold cap from the internal mold cap. Thermally conductive epoxy is deposited in the opening of the internal mold cap and in the cavity between the internal and the external mold cap. The heat spreader is placed and attached after which a thermal epoxy and mold cure is applied to the package. The package is further completed by the application of contact balls to a first surface of the semiconductor device support surface, the semiconductor devices is mounted has been mounted over a second surface of the semiconductor device support surface. (Fig. 2)

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