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(54) **COMPOSITE LEADFRAME LED PACKAGE AND METHOD OF MAKING THE SAME**

(52) **U.S. Cl. .... 438/26; 257/680**

(76) **Inventor: Ban P. Loh, Durham, NC (US)**

(57) **ABSTRACT**

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Light emitting die package is disclosed. The die package includes a leadframe, a bottom heatsink, a top heatsink, a reflector and a lens. The top and bottom heatsinks are thermally coupled but electrically insulated from the leadframe. The leadframe includes a plurality of leads and defines a mounting pad for mounting LEDs. The top heatsink defines an opening over the mounting pad. The reflector is coupled to the top heatsink at the opening. The lens is placed over the opening defining an enclosed cavity over the mounting pad. At least one light emitting device (LED) is mounted on the mounting pad within the cavity. Encapsulant optically couples the LED to its surrounding surfaces to maximize its optical performance. When energized, the LED generates light and heat. The light is reflected by the reflector and operated on by the lens. The heat is dissipated by the top and the bottom heatsinks.

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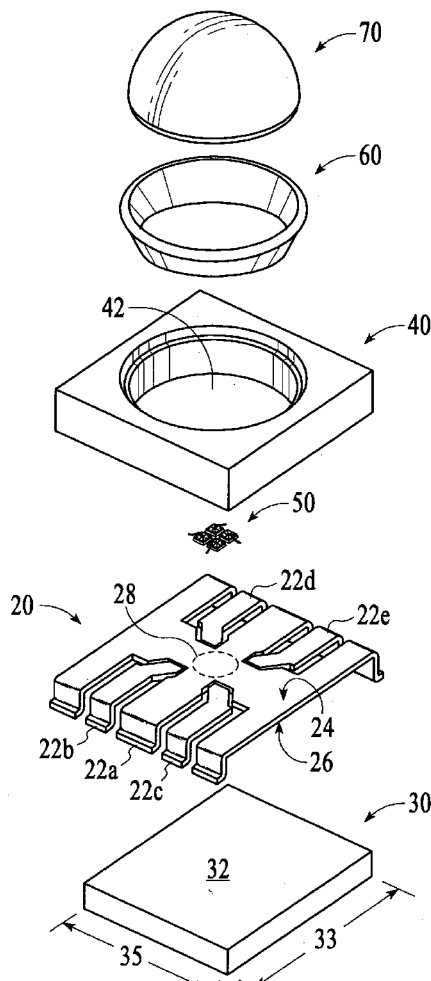
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**Publication Classification**

(51) **Int. Cl.<sup>7</sup> ..... H01L 21/00; H01L 23/02**



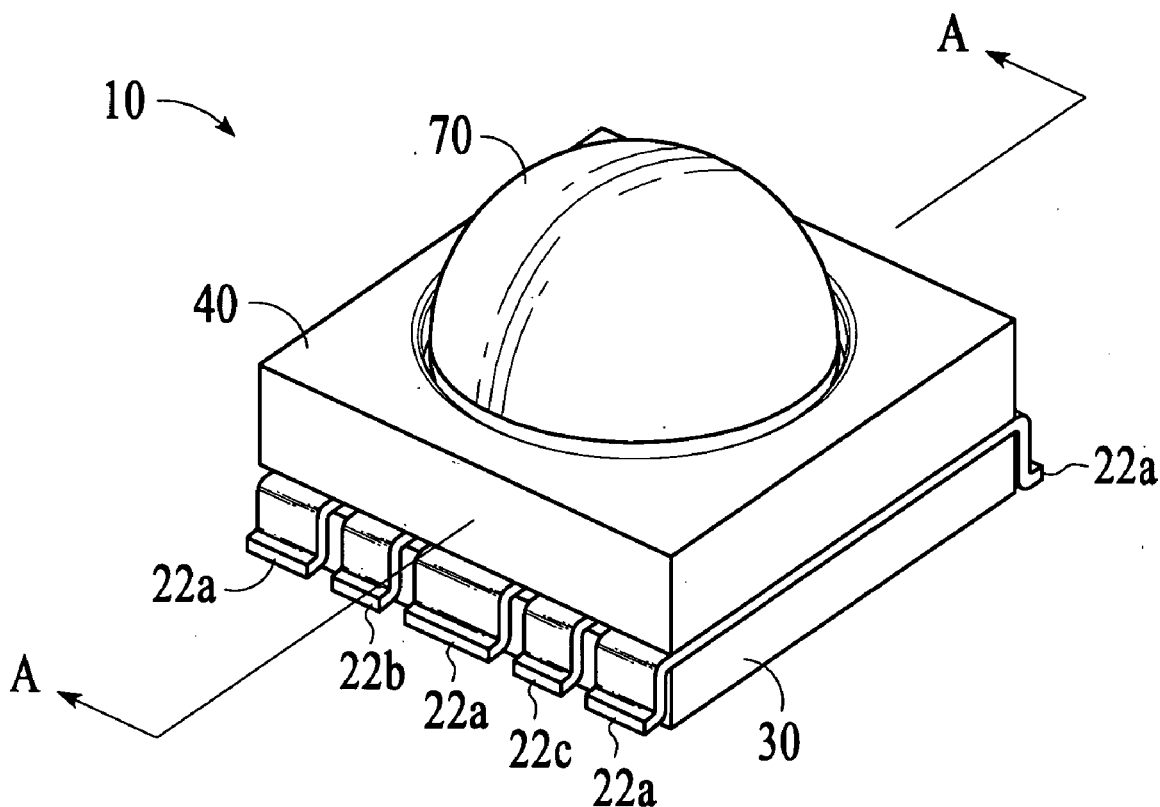


FIG. 1A

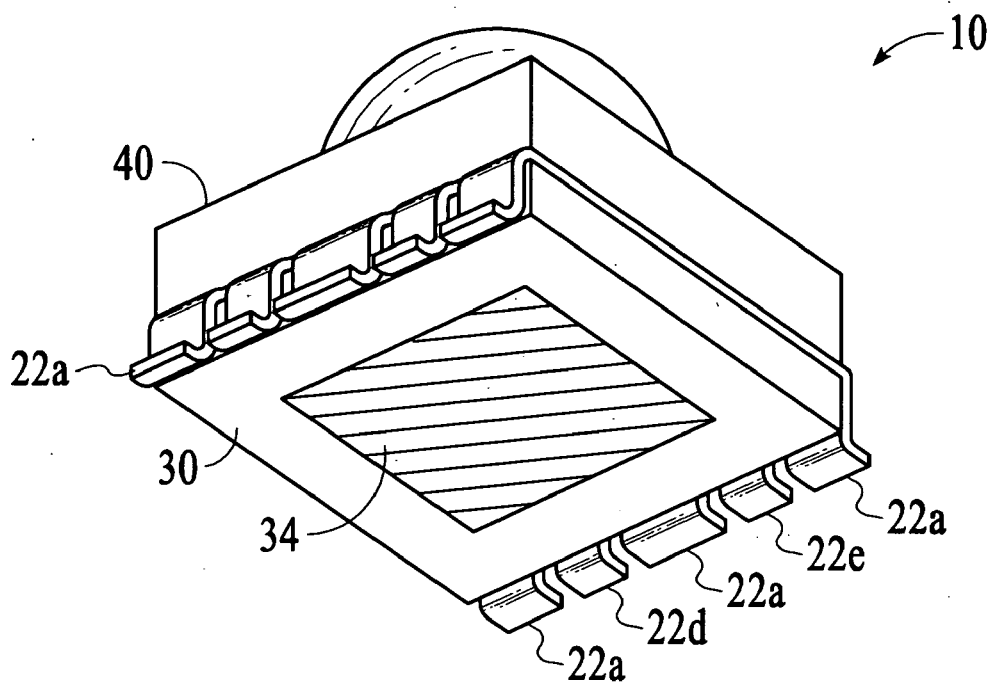


FIG. 1B

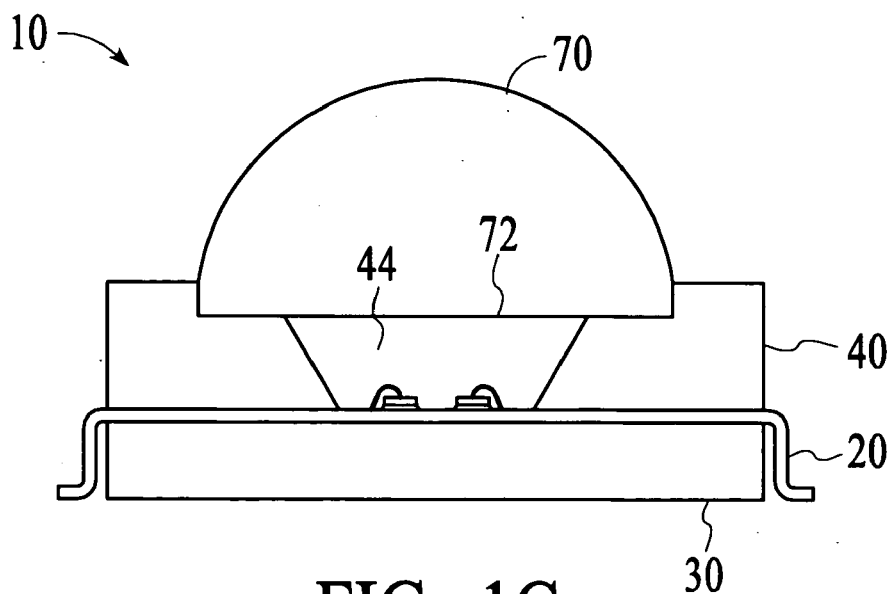
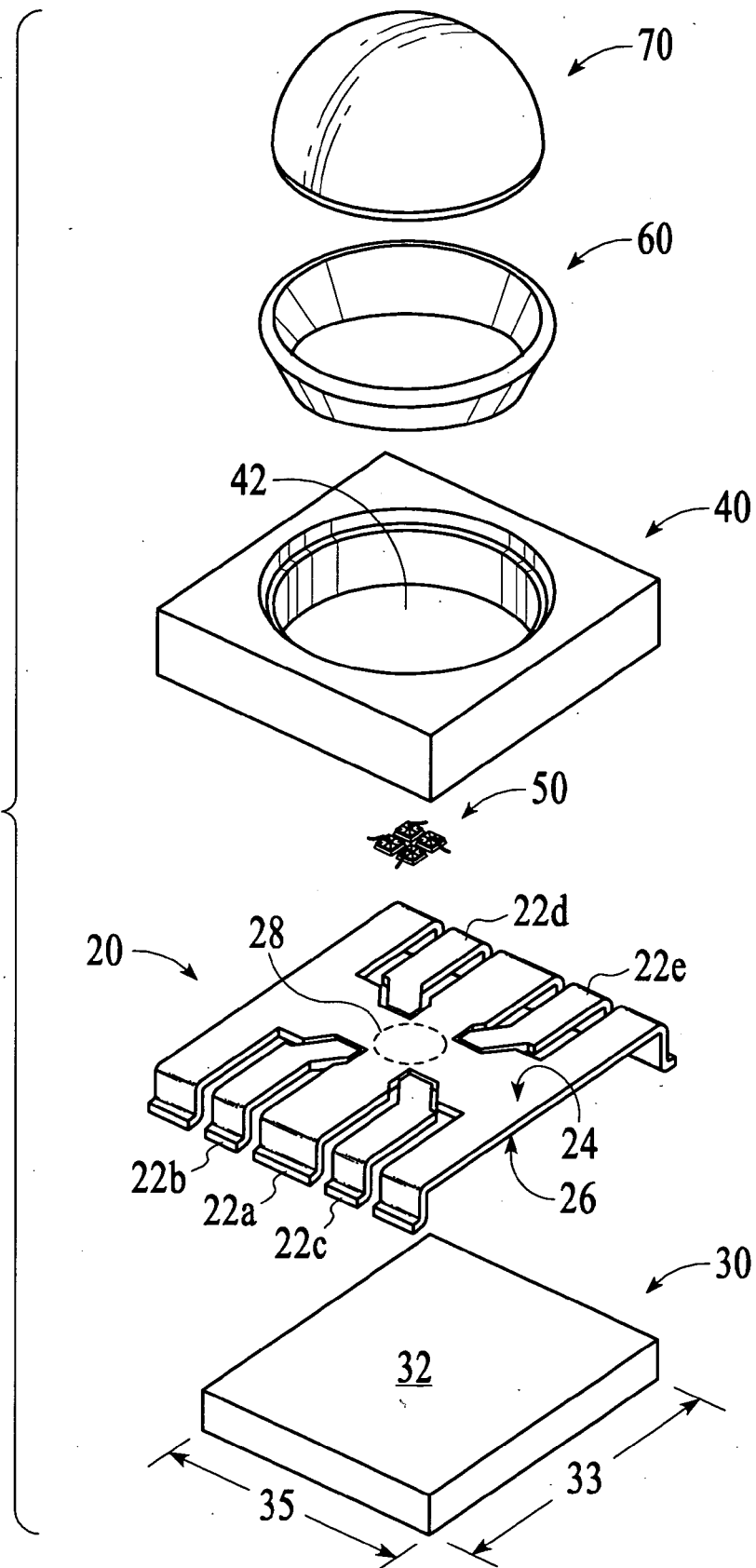


FIG. 1C

FIG. 2



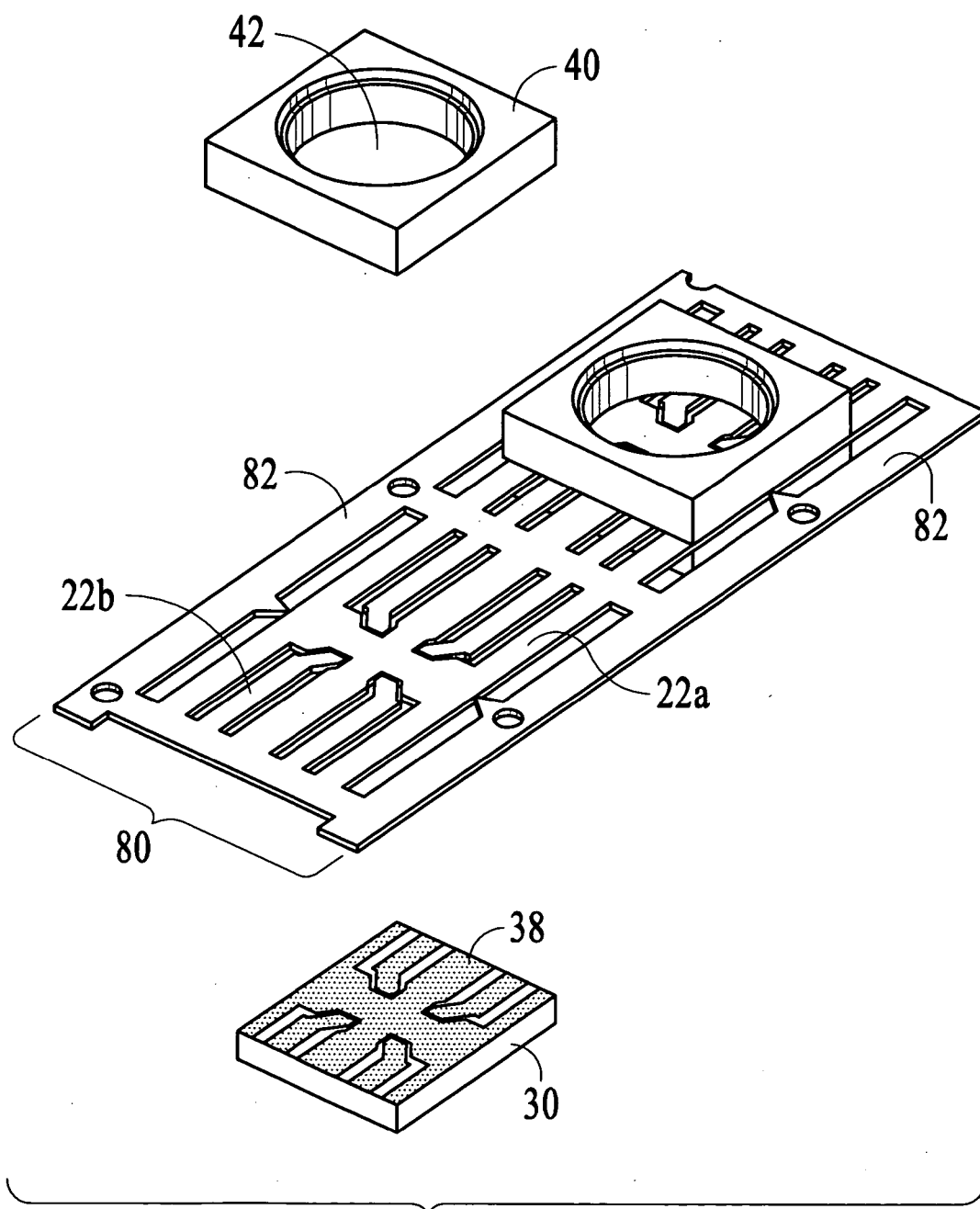


FIG. 3

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