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(54) Title: LED MODULE

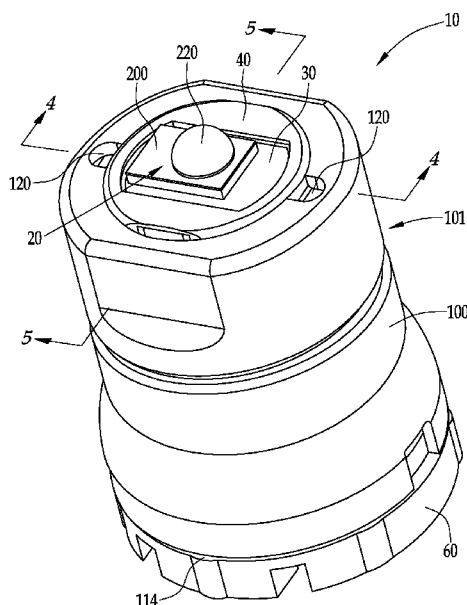


FIG. 1

(57) Abstract: A light emitting diode ("LED") module with improved thermal characteristics is provided. The module includes an LED, a first circuit board, a second circuit board, a lower insulator, an upper insulator, a lower contact, upper contacts, and a heat sink. Preferably, the heat sink comprises an outer housing and a contact ring. The LED and the heat sink are attached to the first circuit board via solder. In addition to serving as a substrate for the LED, the first circuit board (which contains a plurality of thermally conductive layers connected by vias) facilitates the transfer of heat away from the LED to the heat sink. The module also has improved mechanical and electrical properties, including redundant electrical connections, stable mechanical connections, and a shock-absorbing lower contact. The lower insulator can also be configured to prevent misalignment of the power source with the lower contact when the module is used in a flashlight or other lighting device.



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