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(54) **Title:** LIGHT EMITTING DIODE FOR HARSH ENVIRONMENTS

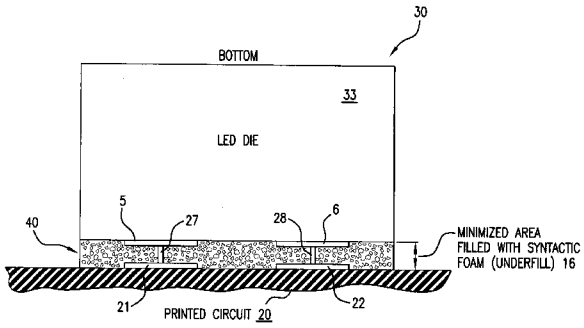


FIG.8

(57) **Abstract:** A light emitting diode (30) for harsh environments includes a substantially transparent substrate (33), a semiconductor layer deposited on a bottom surface of the substrate (33), several bonding pads (5, 6), coupled to the semiconductor layer, formed on the bottom surface of the substrate (33), and a micro post (27, 28), formed on each bonding pad (5, 6), for electrically connecting the light emitting diode (30) to a printed circuit board (20). An underfill layer (40) may be provided between the bottom surface of the substrate (33) and the top surface of the printed circuit board (20), to reduce water infiltration under the light emitting diode substrate (33). Additionally, a diffuser (50) may be mounted to a top surface of the light emitting diode substrate (33) to diffuse the light emitted through the top surface.

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