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Characterization investigation and evaluation of ESD robustness of high power light-emitting diodes SHIH-CHUN YANG, PANG LIN, National Chiao-Tung University, HAN-KUEI FU, CHIEN-PING WANG, TZUNG-TE CHEN, AN-TSE LEE, SHENG-BANG HUANG, MU-TAO CHU, Industrial Technology Research Institute — This paper reports on the ability of high power light-emitting diodes (LED) to endure electrostatic discharge (ESD). The endurance of ESD is a part of reliability of LED, especially in the horizontal structure of the insulating property of the sapphire substrate. Under the test of reverse-bias stress, the endurance of ESD is stronger as the leakage current of LED is smaller. Although many companies adopt the vertical structure which the substrate is conductive as their products, modification of the electrical properties of LED is an important subject in reliability engineering.

Han-Kuei Fu
Industrial Technology Research Institute

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