

High-Power LEDs Lighting Systems Reliability – Understanding of Degradation Processes

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Abstract

With the progress of LED lighting technologies, their application is spreading in sign and display devices, spot lighting, base lighting, and security lighting, and new applications that cannot be realized with conventional light sources are expected. The reliability of LED is key to its application system.

Keywords: *degradation mechanisms, failure modes, packaging, phosphors, ESD, EOS, thermal management.*

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¹ However this time clearly depends on what criteria are used to determine device failure. The *end of life* of an LED is the time at which the power output has fallen to either 50%, or 1/e, of its original value.