

inside the optocoupler package. An AlGaAs type 2 LED has a performance level that falls between the other two LED types and can be used in a wide range of applications that require speed or power performance. All three LED types have similar characteristics, with < 10% loss from the original CTR value after 30 field years of typical operation conditions.

In general, there are three basic factors to consider to maximize the optocoupler LED operating lifetime:


- Operate the LED at a lower IF
- Operate at lower duty cycle (less than 100%)
- Operate at a temperature of less than 125°C

### Conclusions

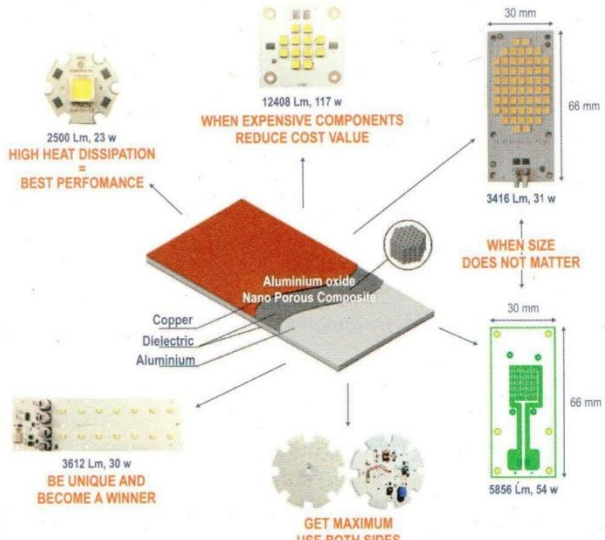
Electrolytic capacitors and high-performance optocouplers are critical components in LED driver design and because of this, their reliability can have an outsized impact on the overall product lifetime. By managing the complete thermal characteristics of the design, optimizing the selected cooling mode (convection or conduction) of the power supply based on end use requirements, and reviewing stress test data to select optocouplers compatible with given parameters to assure the highest MTF, designers can maximize LED reliability and the long life for their products. ■

### References:

- [1] [http://www.nmbtc.com/fans/white-papers/fans\\_ball\\_vs\\_sleeve.html](http://www.nmbtc.com/fans/white-papers/fans_ball_vs_sleeve.html)



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