

Present State and Future Prospects of Epoxy Resin for Optical Semiconductor Encapsulation



Development Department
Semiconductor Related Product Division
Industrial Business Headquarters

ITO Hisataka

Summary

Transparent encapsulating resin for optical semiconductors is used to encapsulate a wide range of LEDs and optical sensor devices.

The transparency of Nitto Denko's Self Release Series, which is part of the company's NT series of transparent encapsulating resins, and the ease with which it releases from the mold contribute to improvements in productivity during transfer molding. Furthermore, new low-stress technology reduces internal stress in the high temperature reflow process. Discoloration is generally a problem with transparent encapsulating resin under such conditions, but the use of various additives has helped to improve resistance to yellowing at the high temperatures experienced during the reflow process.

The use of cycloaliphatic epoxy resin materials is an effective means of extending brightness degradation life in products such as high brightness LEDs where heat resistance is an important factor. Automotive applications include those requiring materials with a high degree of purity, strong surface adhesion, or transparent fillers that are required to handle extremes of heat and humidity.

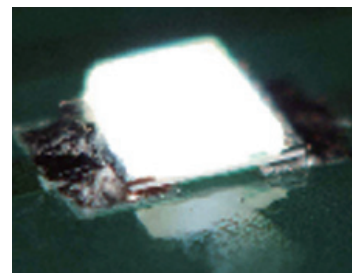


Photo. 1 White chip LED