Causes of Optical Coupler Damage

Overview

Gradual degradation may be caused by (1) Electrostatic Discharge (ESD) damage experienced by the device, or (2) defects in the materials used in the laser diode or the fabrication process from which it is made, and from moisture ingression that can occur from inadequate hermetic. Gradual degradation may be caused by (1) Electrostatic Discharge (ESD) damage experienced by the device, or (2) defects in the materials used in the laser diode or the fabrication process from which it is made, and from moisture ingression that can occur from inadequate hermetic. Cratering occurs when a crack develops under the ball bond metallization zone from stress to a bond wire that pulls the chip out, leaving a void or “crater'. This is usually a result of an incorrect ball bonding process such as excessive pressure. It can also be caused by tension on the bond wire. Gideon Analytical Laboratories received two failed photocouplers for failure analysis. These photocouplers feature a high isolation voltage, high-speed switching, and high collector to emitter voltage. Reduce system downtime, and mitigate severe repairs. This application note gives a quick introduction, how Würth Elektronik eiSos tests the lifetime of optocouplers, how you can calculate the expected lifetime for your application and it will give you tips on how to operate the optocouplers in order to increase the lifetime. Often. The primary causes of optical transceiver failure are performance degradation due to ESD (Electrostatic Discharge) damage and optical link failure caused by optical port contamination and damage.

Article Content

Factors Influencing the Optical Performance of Fiber Optic ...

Contamination is the most common cause for degradation in the performance of optical connectors. The core of a single-mode fiber is typically 8 to 9 um and 50 or 62.5 um for multimode fibers.

Diagnosing and Solving Common Optical Transceiver Failures

The primary causes of optical transceiver failure are performance degradation due to ESD (Electrostatic Discharge) damage and optical link failure caused by optical port contamination ...

ANO006 | Lifetime of Optocouplers

The major root causes of failures in LEDs can be divided into die-bonding related failures and package-related failures . Package related failures, which appear as early life failures, are a result of ...

Demystifying Optical Transceiver Failures: Common Issues

Causes include manufacturing defects, excessive operating temperature, voltage spikes, or simply reaching end-of-life. Symptoms: Gradual increase in Bit Error Rate (BER), reduced optical ...

Optocoupler Failures

Gideon Analytical Laboratories received two failed photocouplers for failure analysis. These photocouplers feature a high isolation voltage, high-speed switching, and high collector to emitter ...

Optoelectronic Devices Failure Mechanisms and Anomalies

Table 2 summarizes some typical failure modes and mechanisms for optical fibers, cables and connectors. See the section on Connectors for some connector failure concerns, as applicable, to...

Understanding and Resolving HCPL-063L-500E Optocoupler ...

Understanding the common causes of optocoupler failure and the potential impact on overall circuit functionality is critical for designers, engineers, and technicians who rely on these ...

Priori information analysis of optocoupler accelerated degradation ...

Process defects are mostly caused by excessive silver glue, chip cracking and solder ball offset or excessive solder balls. Chip defects are mostly caused by movable ion contamination and p ...

Optocoupler

Most component failures do not result in visible damage to the device, and in many cases the device that has burned up was a victim of another components failure.

Failure mechanisms and package reliability issues in optocouplers

Package-related failure mechanisms in optocouplers include delamination, bonding wire fracture/wire ball bond fatigue, poor die attach quality, poor bonding, humidity induced corrosion and ...

8 Signs Your High-Voltage Opto-Coupler Needs Replacing

Find out if your high-voltage opto-coupler needs replacing with these signs of wear and tear.

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: https://automationauthoritysolar.co.za
Email: info@automationauthoritysolar.co.za
Phone: +27 82 547 3961
Address: 15 Quantum Street, Technopark, Centurion, 0157, South Africa

This document is for informational purposes only. Specifications subject to change without notice.