LED Light Component Documentation:

Overview:

This document provides detailed information about the LED light component, including its electrical characteristics, dimensions, and recommended operating conditions. This information is crucial for ensuring the proper and safe use of the LED light in various applications.

Product Description:

- Product Name: High-Efficiency LED Light
- Model Number: HLED-1234
- Manufacturer: BrightLights Inc.

Electrical Characteristics:

- *Forward Voltage (V_f):* 2.8V - 3.3V
  The forward voltage is the voltage drop across the LED when it is in the forward direction (i.e., conducting). This LED operates within the range of 2.8V to 3.3V.

- *Forward Current (I_f):* 20mA - 30mA
  The forward current is the current flowing through the LED when it is conducting. For optimal brightness and efficiency, this LED operates at a forward current between 20mA and 30mA.

- *Maximum Reverse Voltage (V_r):* 5V
  The maximum reverse voltage is the highest voltage that can be applied in the reverse direction without damaging the LED. For this LED, the maximum reverse voltage is 5V.

- *Power Dissipation (P_d):* 0.1W - 0.2W
  Power dissipation is the amount of power in the form of heat that the LED can safely dissipate. This LED has a power dissipation range from 0.1W to 0.2W.

- *Luminous Intensity (I_v):* 3000mcd - 5000mcd
  Luminous intensity is the measure of the visible light emitted by the LED. This LED has a luminous intensity range from 3000 millicandela (mcd) to 5000mcd.

Thermal Characteristics:

- *Operating Temperature Range (Topr):* -40°C to +85°C
  The operating temperature range specifies the temperatures within which the LED can operate without damage or significant performance degradation.

- *Storage Temperature Range (Tstg):* -55°C to +100°C
  The storage temperature range specifies the temperatures within which the LED can be stored without damage.

Physical Characteristics:

- *Package Type:* 5mm Round
  The LED comes in a 5mm round package, suitable for through-hole mounting.

- *Lens Colour:* Clear
  The lens of the LED is clear, which does not diffuse the light and maintains high brightness.

- *Lead Soldering Temperature:* 260°C for 5 seconds
  The maximum temperature and duration for soldering the LED leads to prevent damage during the soldering process.

Recommended Operating Conditions:

- ✓ *Forward Voltage:* 3.0V

- ✓ *Forward Current:* 25mA

- ✓ *Operating Temperature:* 25°C

- ✓ *Soldering Time:* 3 seconds (at 260°C)

Application Information:

The LED light component is suitable for a wide range of applications, including but not limited to:

- Indicator lights

- Display panels

- Backlighting

- Decorative lighting

- Signal and symbol illumination

Safety and Handling:

- Avoid applying reverse voltage to the LED.
- Do not exceed the maximum ratings for current, voltage, and temperature to prevent damage.
- Use appropriate current-limiting resistors to control the forward current.
- Handle with care to prevent damage to the leads and the encapsulation.

Compliance and Certification:

- *RoHS Compliant:* Yes
- *CE Mark:* Yes
- *UL Listed:* Yes

Contact Information:

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