SOLUTION BRIEF

LED IV Characterization

How to measure your IV curve

KEYSIGHT

Introduction

The energy efficiencies and durability of light-emitting diodes (LEDs) have increased usage in various applications such as lighting, display panels, and a wide range of consumer electronics products. This technology has also spawned research into new types of LEDs with even higher energy efficiencies and properties tailored for specific applications. Your source / measure unit (SMU) of choice needs to have an intuitive graphical user interface (GUI) and multiple software control options that make it easy for you to begin making measurements immediately. These software flexibilities enable you to measure the IV curve of your LEDs for any application.

Solution Summary

- Use a SMU to turn on your LEDs.
- Set the current limit value accordingly to prevent any damage to the LEDs.
- Step voltages from start to stop while making a current measurement at each voltage step .
- Measure the IV curve using either the instrument GUI, Keysight PathWave BenchVue software, PW9251A PathWave IV Curve Measurement Software, Keysight EasyEXPERT group+ software, or build your own custom program with Standard Commands for Programmable Instruments (SCPI), or IVI-COM drivers.

Solution Overview

The B2900 Series precision source / measure unit is the ideal solution for IV characterization of LEDs and a variety of other devices. Its wide current and voltage measurement ranges provide exceptional measurement performance so that you can characterize devices more accurately and easily than ever before. Keysight offers multiple software control options to facilitate program development if you prefer PC-based instrument control, enabling you to choose the solution that best fits your application.

Learn more about LED IV Measurements Using the B2900B/BL Series of SMUs – Application Note.

Instrument GUI
or
PathWave BenchVue for Power Supply
or
PathWave IV Curve Software
or
EasyEXPERT group+
or
Custom Programs (SCPI / IVI-COM)

B2900 Series Precision Source / Measure Unit

11059A Kelvin Probe Set

LED Lamp (DUT)

Figure 1. Setup for LED IV characterization

Summary

- Characterize devices accurately and remotely over GPIB, USB, and LAN interfaces with an SMU.
- Prioritize the flexibility of the instrument as the most important decision-making criteria.
- Choose an SMU that offers multiple software control options that fit different levels of measurement needs, complexities, and applications.

B2900 Series precision SMU

GET A QUOTE

Keysight BV0003B PathWave BenchVue power supply application software

GET A QUOTE OR DOWNLOAD A FREE TRIAL

Keysight 11059A Kelvin Probe Set

GET A QUOTE

For more information on Keysight Technologies' products, applications, or services, please visit: www.keysight.com

This information is subject to change without notice. © Keysight Technologies, 2022 - 2023, Published in USA, May 2, 2023, 7122-1082.EN