

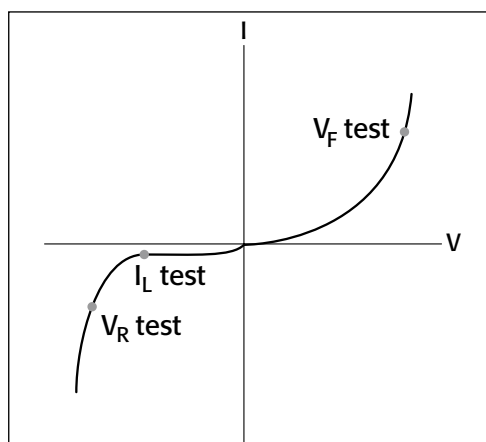


## Keithley's SourceMeter® Solutions

Whether you're characterizing Light Emitting Diodes (LEDs) in an R&D lab, on the wafer level, in packaged devices or arrays, or as finished assemblies, you need instruments that deliver high accuracy sourcing and measurement. Today, for a growing number of LED manufacturers, that means Keithley's SourceMeter® instruments.

Test types typically used in characterization of high brightness LEDs:

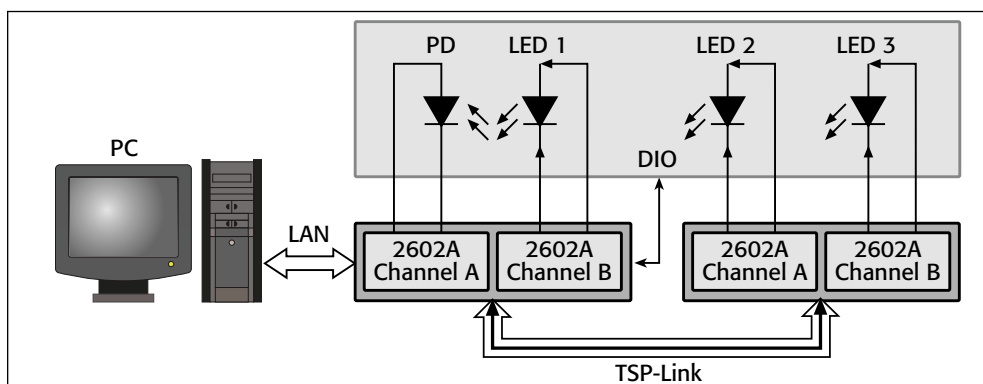
- Forward voltage test ( $V_F$ )
- Reverse breakdown voltage ( $V_R$ )
- Leakage current ( $I_L$ )



Typical LED DC I-V curve and test points (not to scale)

### Keithley's Solution for Testing Multiple LED Devices/Arrays

Testing multiple devices or arrays over a specified period, such as during burn-in, requires sourcing a continuous current to drive the DUTs. Series 2600A System SourceMeter instruments are perfect for this application. Using embedded test script processing (TSP®) and TSP-Link® connectivity ensures tight instrument synchronization and control for maximum speed and simplicity. For higher channel count applications, you can add a TSP-enabled Model 3706 System Switch/Multimeter. This model can handle up to 576 multiplexed channels or 2688 matrix cross-points and can be quickly and easily integrated through TSP-Link.



### Why Choose a Keithley SourceMeter Instrument for LED Testing?

- **Tight function integration** – All SourceMeter instruments provide simultaneous voltage and current sourcing and measurement capabilities in a single cost-effective enclosure.
- **Simpler system setup** – SourceMeter instruments eliminate the synchronization and connection complexities associated with using separate sources and meters.
- **High-speed operation** – Fast test speeds and tight triggering synchronization ensure higher throughput and a lower cost of test.
- **Wide dynamic range** – The Keithley Series 2600A SourceMeter family offers industry-leading current range performance, from 10A in pulse mode down to 100nA, with 1pA resolution.
- **LED testing expertise** – Keithley is the industry leader in developing and supporting solutions for electrical testing of LEDs and other opto devices.

# DISCOVER THE INDUSTRY STANDARD FOR LED ELECTRICAL TEST

## Our Most Popular LED Testing Solutions



### Series 2400 SourceMeter Instruments

Widest I-V dynamic range for benchtop and automated testing

- Combines a voltage or current source including pulse generation with concurrent voltage and current measurements
- Six single-channel models to choose from, including three with dynamic ranges that are ideal for LED test:
  - Model 2400: 200V, 1A, 20W
  - Model 2420: 60V, 3A, 60W
  - Model 2440: 40V, 5A, 50W
- 2,000 readings per second
- Built-in test sequencing with pass/fail comparator and digital I/O interface for fast device sorting/binning



### Series 2600A System SourceMeter Instruments

Highest test speed with seamless system expansion

- Latest generation SourceMeter instruments combine a voltage or current source, including pulse and arbitrary waveform generation, with concurrent voltage and current measurements
- Single- and dual-channel models to choose from, including four with dynamic ranges that are ideal for LED test:
  - Model 2601A/2602A: 40V, 3A DC, 10A pulse
  - Model 2611A/2612A: 200V, 1.5A DC, 10A pulse
- 20,000 readings per second rate ensures faster testing and allows capturing transient device behavior
- Embedded test script processor (TSP®) allows additional programmability for enhanced system control and best-in-class test throughput
- Series 2600A's waveform generation capability enables AC waveform sourcing so you can test both AC and DC LEDs with one instrument

## Other Keithley LED Test Solutions



**Series 3700 System Switch/Multimeters.** Speed and simplify multichannel applications, such as production testing of multiple LEDs in parallel.

**Model 2520 Pulsed Laser Diode Test System.** For research and development of new high brightness LED designs, offering pulse widths as short as 500ns to prevent device self-heating.



A GREATER MEASURE OF CONFIDENCE

**KEITHLEY**