



NXP non-dimmable drivers for LED lighting SSL21151 and SSL21153

Compact, low-cost SSL driver solutions

Designed to make low-power LED lighting more affordable, these non-dimmable SSL driver ICs operate at up to 10 W, deliver a low output ripple ($< 1\%$), and enable a total solution that fits in a GU10 casing.

Key features

- ▶ High-efficient flyback or buck-boost LED drivers
 - SSL21151: up to 5 W
 - SSL21153: up to 10 W
- ▶ Low output ripple $< 1\%$
- ▶ Power factor: 0.6 or ~ 0.9 (using valley fill)
- ▶ Internal protections
 - Short/open-string protection
 - Thermal protection
- ▶ Compatible with IEC61000-3-2 harmonics
- ▶ EMC compliance: class B CISPR22 and FCC part 15
- ▶ Compact SO7 package

Key benefits

- ▶ Low-cost solutions for up to 10 W
- ▶ Primary side sensing without opto coupler
- ▶ Option to connect PTC
- ▶ Frequency jitter
- ▶ Total solution fits in GU10 casing

Applications

- ▶ Retrofit SSL lamps
- ▶ LED modules
- ▶ LED strings

The NXP SSL21151 and SSL21153 support the worldwide push to replace inefficient incandescent bulbs with new, highly efficient yet inexpensive lighting technologies. They are primarily designed for use in low-cost, non-dimmable LED retrofit lamps, but are also well suited for use in LED modules or to drive LED strings.

The drivers use primary side sensing to regulate the LED current, and include several built-in protections. They also deliver good controlled output current.

Both devices drive LEDs in constant-current flyback (isolated) or buck-boost (non-isolated) configurations in applications that can tolerate relatively low power factor (PF). Higher PF ratings are possible with an additional valley-fill circuit, for use in applications that don't have strict THD requirements.



NXP's leading-edge process technologies improve performance and increase integration. The built-in controller uses NXP's SOI-based ABCD smart power technology to deliver high efficiency. To support direct start-up from the rectified mains voltage, the drivers also include a high-voltage JFET, plus a 700 V power MOSFET, made in NXP's robust SOI/EZHV process. Adding the on-chip MOSFET makes the design more robust.

The high level of integration lowers the component count and creates a compact, cost-effective application. Each driver is housed in a small SO7 package and enables a final design that fits in a GU10 casing.

Selection guide

Type number	Mains voltage	Lamp power	Internal MOSFET	Package
SSL21151	100 to 230 V	Up to 5 W	700 V / 15 Ω	SO7
SSL21153	100 to 230 V	Up to 10 W	700 V / 5 Ω	SO7

SSL2115x block diagram

