



Product brief

XDP™ digital power XDPL8219

High-power-factor constant-voltage flyback IC

LEDs need constant current (CC) for safe operation. To improve performance and avoid flicker, a dual-stage architecture with primary-stage constant voltage (CV) circuit is needed. A buck regulator or LDO on the secondary-side enables high-performance LED drivers. Also, multi-channel LED drivers with primary-side constant-voltage output and secondary-side regulators can utilize this topology. Requirements for lighting applications include high power factor and low total harmonic distortion (THD). The XDPL8219 provides a constant voltage output with a high power factor.

Wide input voltage range

The XDPL8219 operates stably with excellent power quality over a wide voltage range from 90 V_{AC} to 305 V_{AC} plus tolerance of nominal power.

Excellent power factor and THD

The XDPL8219 achieves a power factor (PF) of > 0.9 and a total harmonic distortion (THD) of less than 15 percent over the whole input voltage range down to one third of the nominal load. On top of that, the device meets the IEC 61000-3-2 class C requirements.

Protection features for reliable driver functioning

- › Accurate AC input under-/overvoltage protection with configurable threshold and hysteresis
- › Reliable output and V_{CC} under-/overvoltage protection with configurable limits and hysteresis
- › Primary-side overcurrent protection, protecting from transformer shorts or broken current sense line
- › Overtemperature protection
- › Protection features can be configured digitally via Infineon's simple graphical user interface (GUI) programming tool

Exceptional low stand-by power consumption

The dedicated 40 W reference design REF-XDPL8219-U40W consumes < 100 mW at 277 V_{AC} at open load.

Added intelligence through UART reporting

Through the UART pin, the device transmits parameters such as: estimated input voltage, line frequency, controller temperature, last error code, and input voltage loss indication.

Key features

- › DSO-8 package
- › Constant voltage with secondary-side regulation
- › Nominal input voltage range from 90 V_{AC} – 305 V_{AC}
- › Efficiency > 90 percent
- › Power factor > 0.9
- › THD < 15 percent
- › Three operation modes:
 - Quasi-resonant (QRM)
 - Discontinuous conduction (DCM)
 - Active burst (ABM)
- › UL1310 safety feature
- › Digital parameter setting
- › Stand-by power < 100 mW

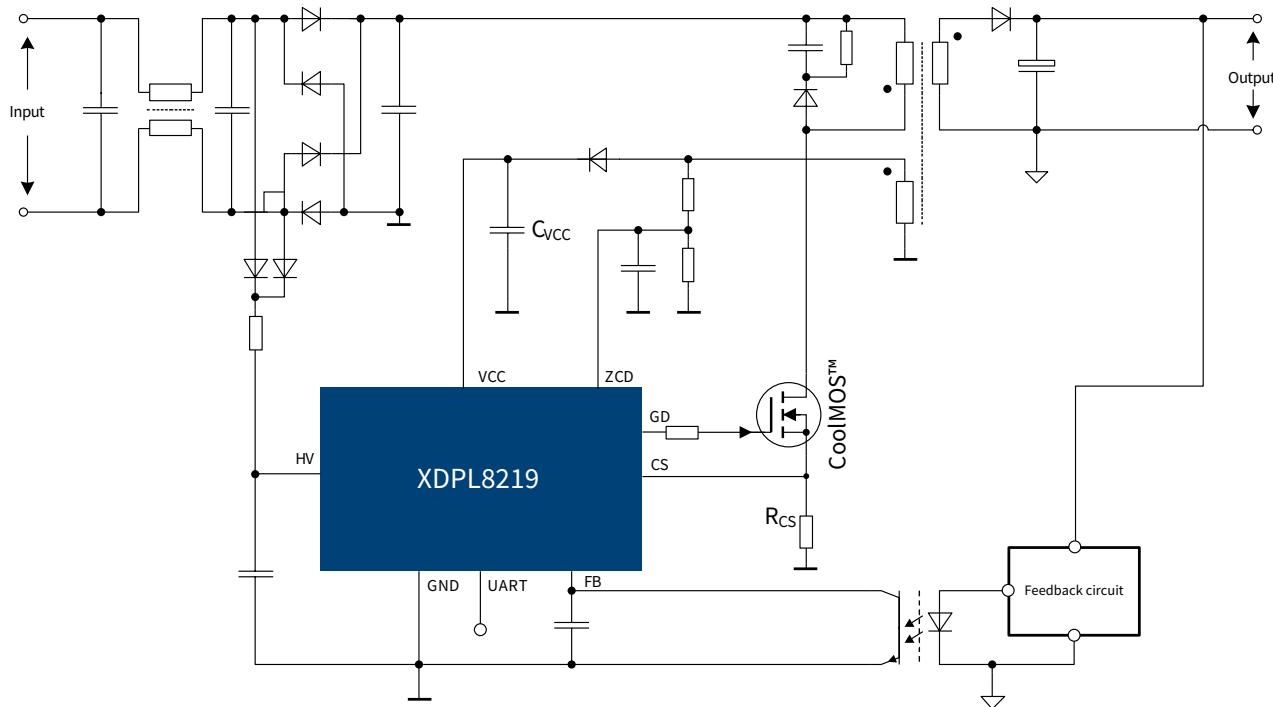
Key features

- › High-performance and robust LED designs
- › Increased flexibility with minimized BoM, enabling faster time-to-market
- › Added intelligence through UART reporting

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Typical application schematic



Product portfolio

Type	Package	OPN	Description
XDPL8219	PG-DSO-8	XDPL8219XUMA1	Single-stage programmable LED IC
REF-XDPL8219-U40W	Reference board	REFXDPL8219U40WTOBO1	40 W reference board
IF-BOARD.DP-GEN2	Board	IFBOARDDPGEN2TOBO1	Parameterisation board

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