

Product Brief

XDP™ LED – XDPL8105

Digital flyback controller IC for LED drivers

The XDPL8105 is a high performance microcontroller based digital single-stage flyback controller with Power Factor Correction (PFC) for constant output current LED driver. The IC is available in a DSO-8 package and supports a wide feature set, requiring a minimum of external components. The digital engine offers the possibility to configure operation parameters and protection modes, which helps to ease the design phase and allow a reduced number of hardware variants. Accurate primary side output current regulation is implemented to eliminate the need for secondary side feedback circuitry.

Smooth operation with extended dimming capability

The digital core of the XDPL8105 and its advanced control algorithms provide multi operation modes. With this functionality and smooth transition between the operation modes, the controller delivers high efficiency, high power factor and low harmonic distortion through the entire load range. The advanced control scheme significantly extends the dimming range.

Shorter product development at less hardware variants

Operation parameters such as the output current are digitally configurable. Infineon provides user friendly design tools, enabling shorter product development cycles compared to analog solutions. Parameter configuration allows last minute changes and enables less hardware variants.

Cost optimized dimming

The XDPL8105 is ideal for applications with the dimming signal from a microcontroller on primary side. It also supports a fully isolated 0–10 V dimming interface in combination with the Infineon CDM10V which significantly reduces the BOM.

Low bill of material

Advances primary side regulation techniques and the high level of integration enable a minimum of external components.

Design support summary

Type	Description	Ordering code
XDPL8105	Digital flyback controller IC	SP001639446
REF-XDPL8105-CDM10V	40 W reference design with CDM10V isolated 0–10 V dimming interface	SP001649474
System simulation design creation tool	MS Excel based software tool	http://www.infineon.com/XDPL8105
.dp interface Gen2	Interface to PC	http://www.hitex.com/dp
.dp Vision	Graphical user interface to configure parameters during development	http://www.infineon.com/XDPL8105
XDP GUI builder	Parameter configuration tool	http://www.infineon.com/XDPL8105

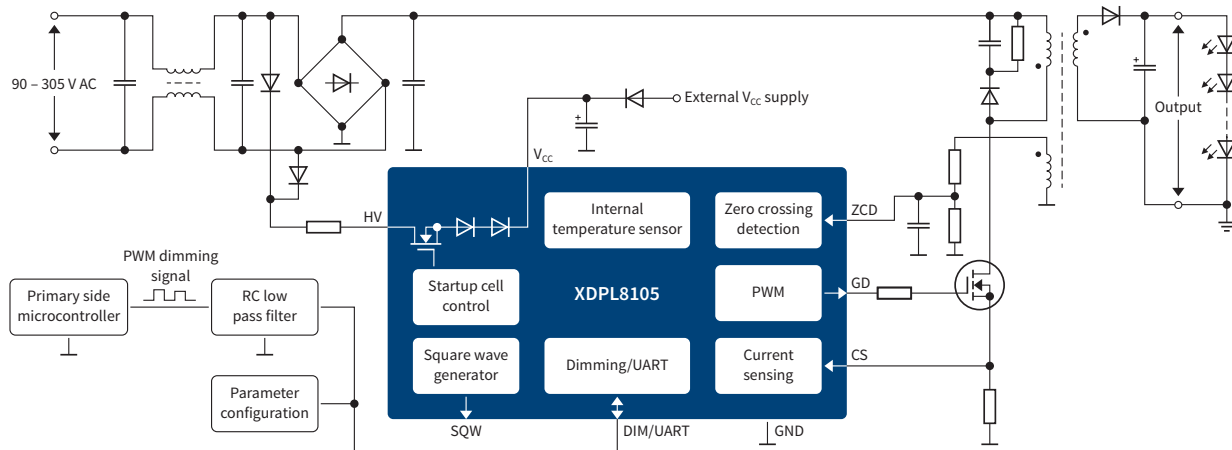
Key features

- > Supports AC and DC input
- > AC input voltage 90–305 V AC
- > Highly accurate primary side control output current typ. $\pm 3\%$
- > Configurable output current with no BOM change
- > Efficiency up to 91%
- > High power quality, typical power factor up to 0.99 and THD < 10%
- > Integrated 600 V startup cell
- > Internal temperature guard with adaptive thermal management
- > All relevant error conditions are monitored and protected
 - Undervoltage
 - Overvoltage
 - Open load
 - Output shorted

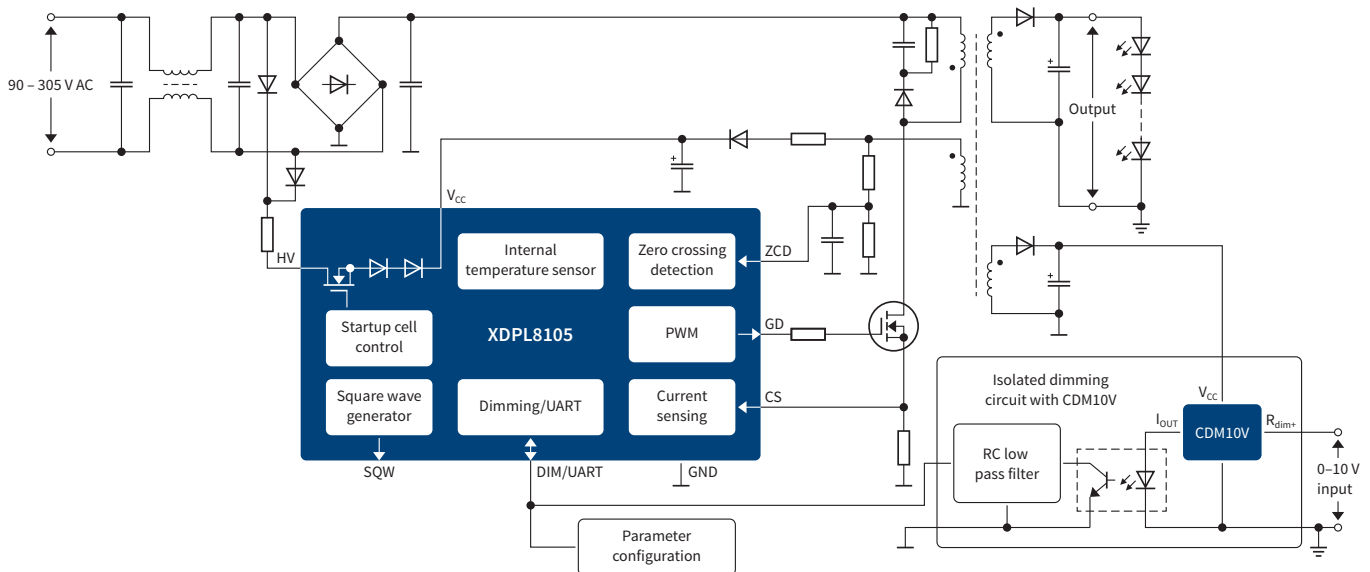
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Typical application schematic with primary side microcontroller dimming



Typical application schematic with secondary side 0–10 V dimming



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