



Product Brief

ICL8105

Digital flyback controller IC for LED driver

The ICL8105 is a high performance configurable single-stage flyback controller with Power Factor Correction (PFC) for constant output current LED driver.

Smooth operation with extended dimming capability

The digital core of the ICL8105 and its advanced control algorithms provide multi operation modes such as quasi resonant mode, discontinuous conduction mode or active burst mode. 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 optional active burst mode control scheme significantly extends the dimming range and is aligned to the line frequency avoiding effects like flicker or shimmer while also reducing audible noise.

Fast engineering and simplified variant handling in production

Operation parameters such as the output current and the protection features are digitally configurable. Infineon offers a user friendly Graphical User Interface (GUI) for PCs, allowing rapid engineering without the need for slow component design iterations. At the end of the production line, multiple LED drivers can be built with the same hardware using different ICL8105 parameter sets.

Isolated 0–10 V dimming with configurable dimming curve

ICL8105 optionally generates a square wave signal for a transformer to isolate the 0–10 V signal. The dimming curve is configurable for linear or eye-adapted brightness control.

Intelligent thermal management

To protect the load and LED driver against over temperature, the IC reacts intelligently by gradually reducing the output current until the over temperature situation is resolved.

Small BoM due to primary side control and high level of integration

The primary side control saves external components especially an opto coupler, thus reducing cost and effort and increasing reliability. With its integrated functionality the ICL8105 enables an increase set of features without external parts.

Product summary

Type	Description	Ordering code
ICL8105	Digital flyback controller IC	SP001415554

Key Features

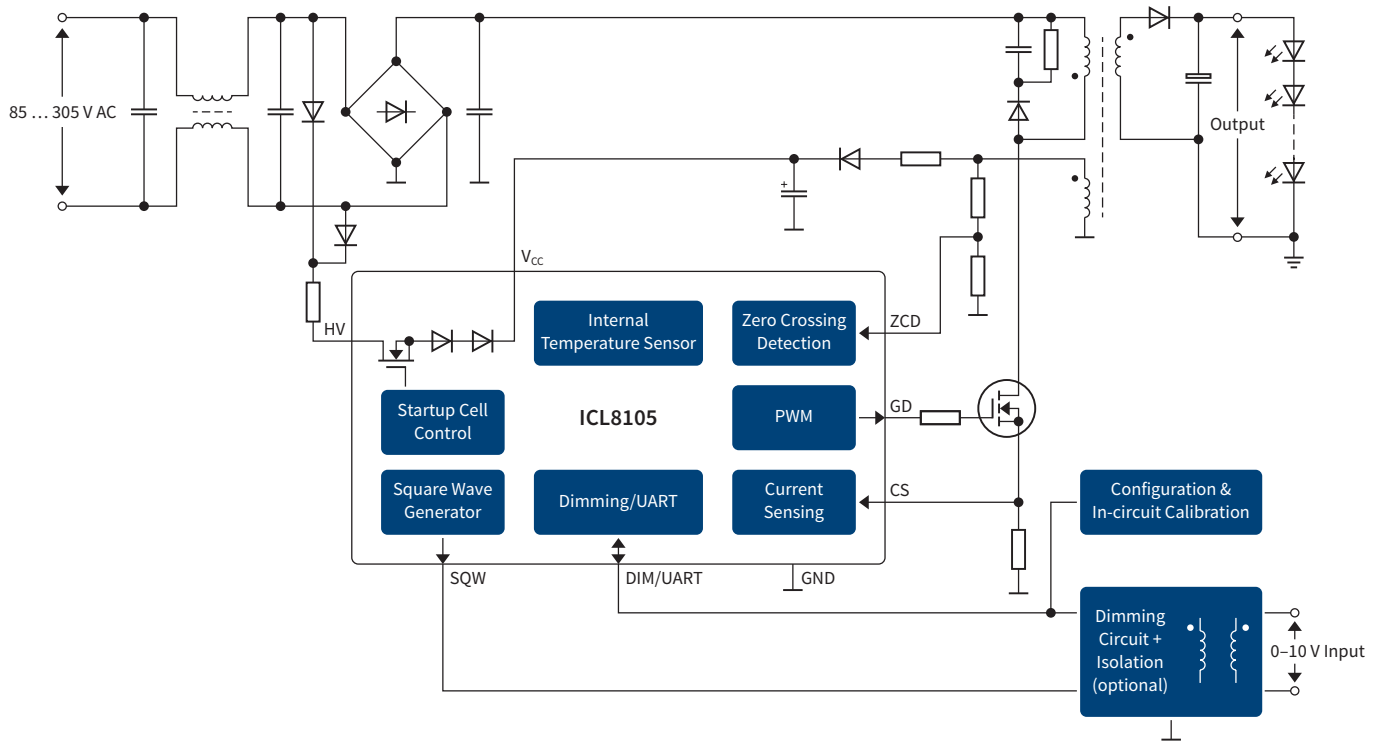
- > Supports AC and DC input
- > AC input voltage 90–305 V_{AC}
- > Highly accurate primary side control with wide output range
- > High output current accuracy
- > Efficiency up to 91%
- > High power quality, typical power factor up to 0.9 and THD < 10%
- > Integrated 600 V startup cell
- > Digital parameter setting
- > All relevant error conditions are monitored and protected
 - Undervoltage
 - Overvoltage
 - Open load
 - Output shorted



.dp digital power 2.0

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Typical application schematic



Design support tools



Type	Description	Ordering code
EVALLEDICL8105E1	Evaluation system 20 – 80 W	SP001296074
EVALLEDICL8105F2	Demo board 40 W	SP001296076
IF-BOARD.DP-GEN2	Interface board to PC	http://www.hitex.com/dp
.dp Vision GUI	Graphical user interface to configure parameters via PC	http://www.hitex.com/dp

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