

Brief Description

The ZSLS7025, one of our ZSLS Family of LED control ICs, is a constant current boost converter designed for driving high-brightness LEDs. It is optimal for driving multiple white LEDs connected in series so that the LED current is uniform for better brightness and color control. The wide input voltage range and high output current enables diverse industrial, after-market automotive, and consumer lighting applications.

The ZSLS7025 output current is adjustable via an external current sense resistor and can deliver stable constant output current from a few milliamps up to 2A or higher.

The ZSLS7025 drives a constant current into the load. The control loop features a pulse frequency modulated (PFM) architecture that is inherently stable and does not need loop compensation.

The ZSLS7025 supports pulse-width modulation (PWM) or linear voltage dimming, which allows flexible control of the LED luminance.

The ZSLS7025 can operate in applications with a wide input voltage range from 5V to 100V. An integrated over-voltage protection (OVP) circuit protects the system, even under no-load conditions. The over-voltage protection is adjustable via external resistors R_1 and R_2 .

Features

- Wide application input voltage range: 5V to 100V (Higher voltage supported. See section 2.1 in the data sheet.)
- Constant current output limited only by external component selection
- No loop compensation required
- Internal over-voltage protection
- Internal over-temperature protection
- Brightness control via PWM or DC voltage control signal input
- SOP-8 package

Benefits

- High efficiency: up to 95%
- Minimum bill of materials
- Small form-factor package

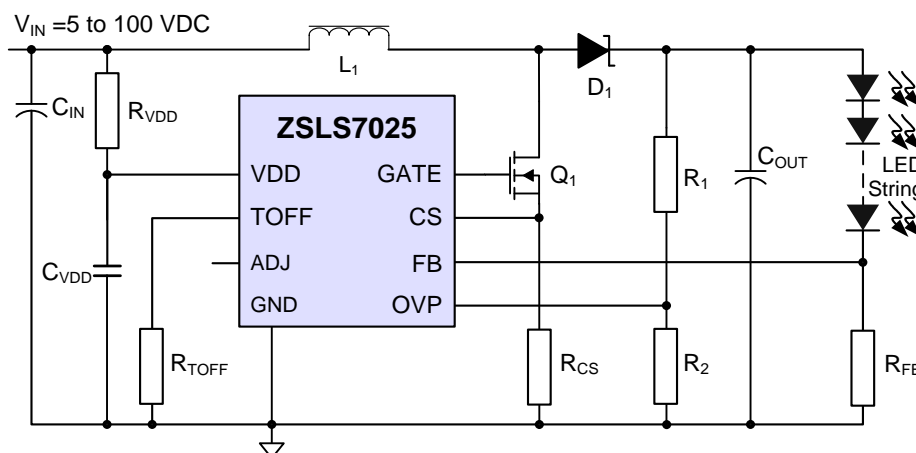
Available Support

- Demonstration Kit

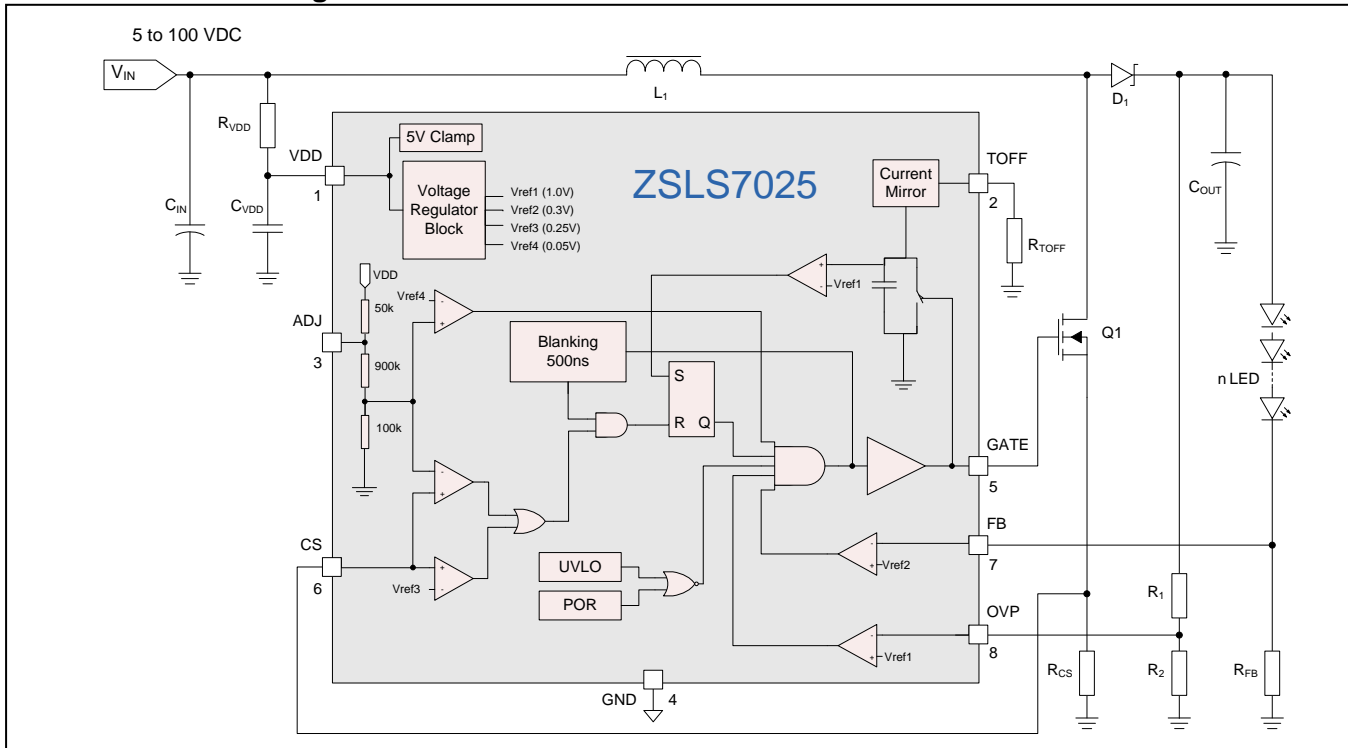
Physical Characteristics

- Junction temperature: -40°C to 125°C
- RoHS compliant

ZSLS7025 Typical Application Circuit



ZSLS7025 Block Diagram



Typical Applications

- ❖ Retro-fit Lighting
- ❖ MR16 Lights
- ❖ SELV Lighting
- ❖ Signage and Outdoor Lighting
- ❖ Architectural/Building Lighting
- ❖ Replacement Tubes
- ❖ LED Backlighting
- ❖ General Purpose Low-Voltage Industrial and Consumer Applications

Ordering Information

Product Sales Code	Description	Package
ZSLS7025ZI1R	ZSLS7025 – Boost LED Driver	SOP-8 (Tape & Reel)
ZSLS7025KIT-D1	ZSLS7025PCB-D1 Demo Board, 1 ZLED-PCB10, and 5 ZSLS7025 ICs	Kit

IMPORTANT NOTICE AND DISCLAIMER

RENESAS ELECTRONICS CORPORATION AND ITS SUBSIDIARIES (“RENESAS”) PROVIDES TECHNICAL SPECIFICATIONS AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES “AS IS” AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for developers skilled in the art designing with Renesas products. You are solely responsible for (1) selecting the appropriate products for your application, (2) designing, validating, and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements. These resources are subject to change without notice. Renesas grants you permission to use these resources only for development of an application that uses Renesas products. Other reproduction or use of these resources is strictly prohibited. No license is granted to any other Renesas intellectual property or to any third party intellectual property. Renesas disclaims responsibility for, and you will fully indemnify Renesas and its representatives against, any claims, damages, costs, losses, or liabilities arising out of your use of these resources. Renesas' products are provided only subject to Renesas' Terms and Conditions of Sale or other applicable terms agreed to in writing. No use of any Renesas resources expands or otherwise alters any applicable warranties or warranty disclaimers for these products.

(Rev.1.0 Mar 2020)

Corporate Headquarters

TOYOSU FORESIA, 3-2-24 Toyosu,
Koto-ku, Tokyo 135-0061, Japan
www.renesas.com

Contact Information

For further information on a product, technology, the most up-to-date version of a document, or your nearest sales office, please visit:
www.renesas.com/contact/

Trademarks

Renesas and the Renesas logo are trademarks of Renesas Electronics Corporation. All trademarks and registered trademarks are the property of their respective owners.