

Regulated LED Driver For Automotive Applications

[Taiwan Semiconductor's](#) TSCR421 low-side constant-current regulator (CCR) is designed for linear LED driving for automotive lighting applications, thus complementing the existing TSCR4xx LED driver portfolio. With its market entry into automotive LED drivers, TSC has expanded its position as a supplier to the automotive industry. The products as well as samples are available immediately from stock.

The AEC-Q100 qualified LED driver regulates with a 10-mA nominal that can be adjusted with an external resistor up to 300 mA. The IC is designed for driving LEDs in strings and will reduce current at increasing temperatures to self-protect (see the figure).

Operating as a series linear CCR for LED string current control, it can be used in multiple applications up to a maximum supply voltage of <40 V. With the low-side control, the TSCR421 has an enable (EN) pin that can be pulse-width modulated (PWM) up to 10 kHz by a microcontroller for LED dimming. The output current at higher temperatures is the result of the negative temperature coefficient of 0.07%/°C of the LED driver.

TSC's product portfolio covers a variety of applications such as ambient, interior and reading light as well as turn signals and instrument cluster illumination. For more information on the new low-side constant current regulators (CCR) for linear LED driving, including product specs and datasheet, see the company's [website](#).

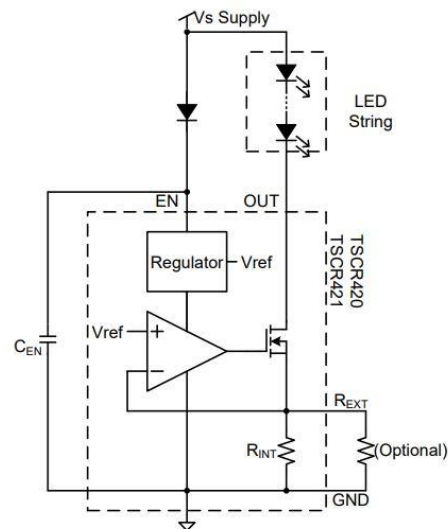
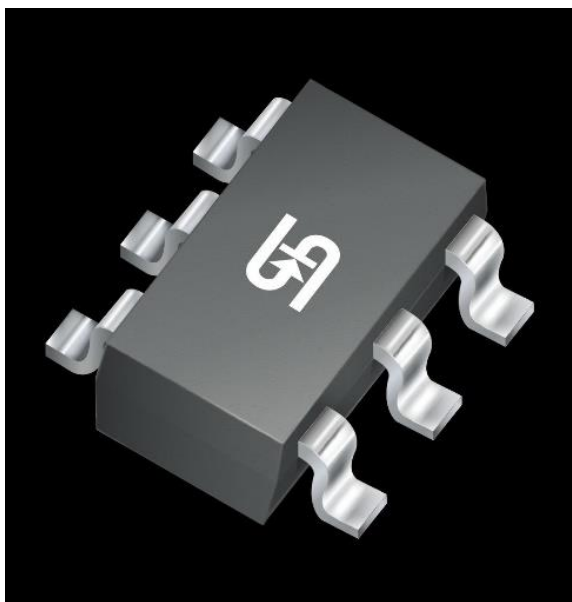


Figure. Offered in a SOT-26 package (left), the TSCR421 LED driver delivers a regulated 10-mA nominal output current that can be adjusted with an external resistor up to 300 mA. A typical application circuit is shown on the right.