

### 36V/30V/24V Step-Up LED Driver with Internal Diode and Serial Control

#### Features

- Wide  $V_{IN}$  input range: 2.7V to 5.5V
- Wide output range: up to 10 series LEDs
- Integrated 40V high current switch (0.52A limit)
- High efficiency boost converter (up to 85%)
- Highly integrated solution
  - ▶ Integrated diode
  - ▶ Internal compensation and soft start
- ExpressWire™ interface dual method dimming with single pin (CTRL)
  - ▶ 256-step Serial dimming control
  - ▶ High resolution PWM dimming
- High accuracy across full load range
- LED open-circuit (OVP) protection
  - ▶ KTD2801 : 36V
  - ▶ KTD2801A : 30V
  - ▶ KTD2801B : 24V
- Low 200mV feedback voltage
- 1MHz High switching frequency
- Simple, small solution size
- < 1  $\mu$ A shutdown current
- Small TDFN22-6 and Thin SOT23 package
- RoHS and Green compliant
- -40°C to +85°C Temperature Range

#### Applications

- LED backlighting
- Mobile Phones, Handheld Devices
- Digital Photo Frames, Automotive Navigation

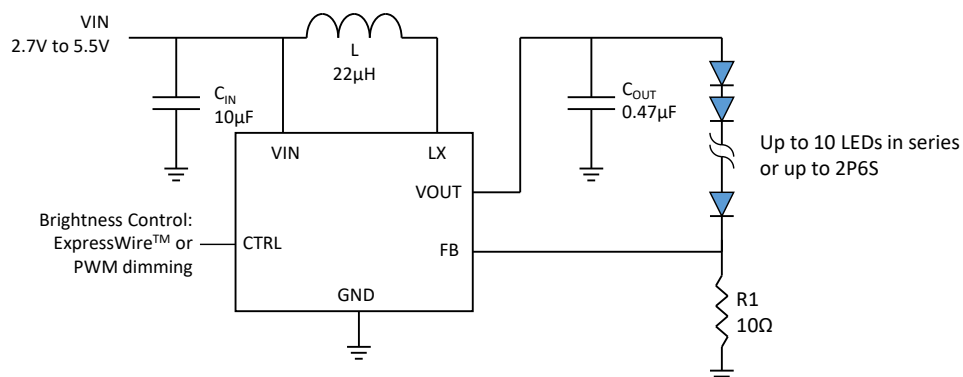
#### Brief Description

The KTD2801/A/B is a versatile constant current LED driver with a high efficiency DC-DC step up “boost” converter architecture. The low-side power MOSFET and high-side diode are integrated in the device, minimizing the total number of external components. Unique technology and high 0.52A current limit allow KTD2801 to drive up to 36V output (10 LEDs in series), or KTD2801A 30V output (8 LEDs in series) or KTD2801B 24V output (6 LEDs). Alternatively, the KTD2810 can deliver 40mA total current for two parallel strings of up to 6 series LEDs. It can also maximize the current capability while achieving high conversion efficiency. The optimized 1MHz switching frequency results in small external component size. The driver is equipped with an internal decoder that allows digital FB control dimming for 256-step (8-bit) current programming and can also be used for PWM dimming with a one-line control signal.

Various protection features are built into the KTD2801/A/B, including cycle-by-cycle input current limit protection, LED open-circuit (output over voltage) protection and thermal shutdown protection. The leakage current in shutdown mode is less than 1 $\mu$ A.

The device is available in a RoHS compliant 6-lead TDFN22 package and 6-lead Thin SOT-23 package

#### Typical Application



### Ordering Information

Part Number	OVP Threshold (nominal)	Marking <sup>1</sup>	Operating Temperature	Package
KTD2801ECD-TR	36V	FFYYZ	-40°C to +85°C	TDFN22-6
KTD2801AECD-TR	30V	FUYYZ	-40°C to +85°C	TDFN22-6
KTD2801BECD-TR	24V	FGYYZ	-40°C to +85°C	TDFN22-6
KTD2801EHD-TR	36V	FFYYZ	-40°C to +85°C	TSOT23-6
KTD2801AEHD-TR	30V	FUYYZ	-40°C to +85°C	TSOT23-6
KTD2801BEHD-TR	24V	FGYYZ	-40°C to +85°C	TSOT23-6

1. "YYZ" is the date code and assembly code.

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