

High Efficiency Boost 2P8S/3P8S LED Driver

Features

- KTD3116-1: 2 strings, 16 LEDs total
- KTD3117-1: 3 strings, 24 LEDs total
- High efficiency: up to 90%
- High frequency step-up converter (800kHz)
- Wide input range: 2.7V to 5.5V
- Integrated 40V Power MOSFET
- Internal compensation and soft start
- Integrated 2- or 3-channel current sink
- Preset 20mA full-scale current per channel
- 1.5% Typ. current matching
- PWM dimming with < 0.3 μ s rise/fall time
- Low quiescent current
- LED open/short protection
- 31V LED open-circuit (OVP) threshold
- Cycle-by-cycle inductor current limit
- < 1 μ A shutdown current
- Pb-free Package:
WLCSP-9 1.2mm x 1.2mm
- -40°C to +85°C Temperature Range

Applications

- Smartphone
- PDA
- GPS
- Portable media players
- Other 1-cell Li Ion LED applications

Brief Description

KTD3116-1/KTD3117-1 is the ideal power solution for white LED backlighting used with medium to small size LCD panels. It is a highly integrated step up DC-DC converter with input voltage range from 2.7V to 5.5V, accommodating 1-cell lithium ion battery or 5V regulated supply. KTD3116/7-1 integrates a 40V Power MOSFET as well as compensation and soft start circuitry, which results in a simpler and smaller solution with much fewer external components. High switching frequency (800kHz) allows the use of a smaller inductor and capacitor to further reduce the solution size.

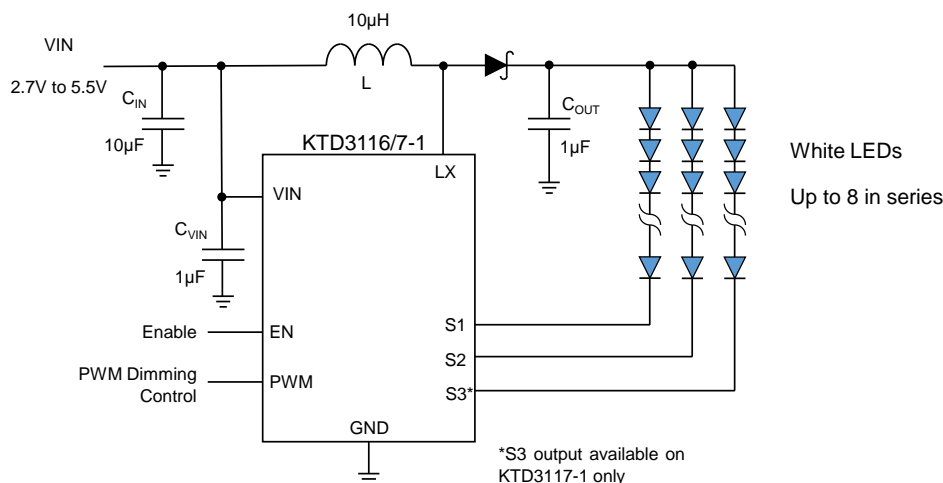
Two regulated current sinks in KTD3116-1 and three sinks in KTD3117-1 provide per channel 20mA (max.) factory programmed current. With a 31V OVP, each string can connect up to eight LEDs in series, for a total of 16 or 24 LEDs in KTD3116-1 and KTD3117-1 respectively.

A PWM dimming control is included for wide output current range. The device has an EN pin which enables the IC.

Various protection features are built into KTD3116/7-1, including cycle-by-cycle input current limit protection, output over-voltage protection, LED fault (open or short) protection and thermal shutdown protection. The leakage current in shutdown mode is less than 1 μ A.

KTD3116/7-1 is available in a RoHS compliant and Green 9-lead 1.2mm x 1.2mm WLCSP package.

Typical Application



Ordering Information

Part Number	Max. Sink Current (nominal)	Marking ¹	Operating Temperature	Package
KTD3116EAA-20-1-TR	20mA	ISYYZ	-40°C to +85°C	WLCSP-9 1.2x1.2mm
KTD3117EAA-20-1-TR	20mA	__YYZ	-40°C to +85°C	WLCSP-9 1.2x1.2mm

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

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