High Performance, Constant Current Switching Regulator For 10PCS white LED In Series

General Description

The TP3990 is a constant current step-up converter specifically designed to drive white LEDs. The Step-up converter topology allows series connection of the white LEDs, so the LED currents are identical for uniform brightness. The TP3990 switches at 1MHz, allowing the use of tiny external components. The output capacitor can be as small as 0.22μF, saving space and cost versus alternative solutions. A low 0.3V feedback voltage minimizes power loss in the current setting resistor for better efficiency. The TP3990 high-voltage output stage is perfect for driving mid-size and large panel displays containing up to ten white LEDs in series. LED dimming can be done by using a DC voltage, a logic signal, or a pulse width modulation(PWM) signal. The enable input pin allows the device to be placed in shutdown mode with "zero" quiescent current.

The TP3990 is available in low profile TSOT23-5 package.

Ordering Information

TP3990- □□ □
- F:Pb-Free
- Package Type T5:TSOT23-5

Marking information

For marking information, contact our sales representative directly or through a TPmicro distributor located in your area.

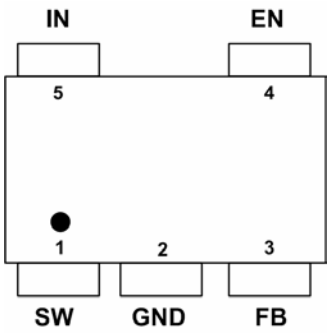
Features

- 2.6V to 5.5V Input Range
- 38V Output Over Voltage Protection
- Internal Soft-Start
- PWM Dimming Control
- Internal High Power 40V MOSFET Switch
- Fast 1MHz Switching Frequency
- Small, Low-Profile Inductors and Capacitors
- TSOT23-5 Package
- RoHS Compliant and 100% Lead (Pb)-Free

Applications

- GPS Navigation Systems
- Portable Media Players
- Handheld Devices, Digital Camera
- Portable Game Machines

Pin Configurations



TSOT23-5

Pin Description

PIN	TSOT23-5	DESCRIPTION
SW	1	Switch Pin.This is the drain of the internal power switch. Connect inductor/diode here. Minimize trace area at this pin to reduce EMI.
GND	2	Common Ground. Connect the pin to the ground plane.
FB	3	Feedback Pin. Reference voltage is 0.3V. Connect cathode of lowest LED and resistor here. Calculate resistor value according to the formula: $R_{FB}=0.3/I_{LED}$
EN	4	Chip Enable Pin. Connect it to 1.4V or higher voltage to enable device, 0.3V or less voltage to disable device.
IN	5	Input Supply Voltage