EUP2990A

6 String White LED Driver with Boost Converter

DESCRIPTION

The EUP2990A is a high efficiency boost regulator with 6 channel current sinker which is ideal for media size LCD backlighting applications.

The device with integrated 2.5A/43V power MOSFET uses current mode architecture and drives six strings in parallel and supports up to 10 pieces of LEDs per string. The switching frequency is programmable by an external frequency setting resistor. The EUP2990A regulates the current in each LED string to the programmed value set by an external current setting resistor. The EUP2990A current matching can achieve ±2%. To provide enough headroom for the operating of current sink, boost converter monitors the minimum voltage of feedback pins and regulates an optimized output voltage for power efficiency.

The EUP2990A has wide input voltage range from 2.5V to 24V and provides adjustable 5mA to 50mA LED current. It provides cycle-by-cycle over current protection. The device supports PWM, analog and mix mode brightness dimming functions for accurate LED current control.

The EUP2990A integrated multiple protect functions, such as LED open, LED short, output over voltage, over thermal and under voltage lockout, these protections will prevent the LCD backlight from damage.

The EUP2990A is available in a 3×3mm TQFN-20L package.

FEATURES

- 2.5V to 24 V Input Voltage
- 6 Strings in Parallel and Up to 10 WLEDs Per String
- Integrated 2.5A 43V MOSFET
- Output Voltage Up to 43V
- Programmable Full Channel Current from 5mA to 50mA
- Direct PWM Dimming up to 25kHz
- PWM to Analog Dimming up to 20kHz with 8 bit resolution
- Better Than 2% Current Regulation Accuracy Between Strings
- Multiple Fault Protections
  - Current Limit Protection
  - Over Voltage Protection
  - Over Temperature Protection
  - WLED Open/Short Protection
- Available in 3mm×3mm TQFN-20 Package
- RoHS Compliant and 100% Lead (Pb)-Free Halogen-Free

APPLICATIONS

- Notebook LCD Display Backlight
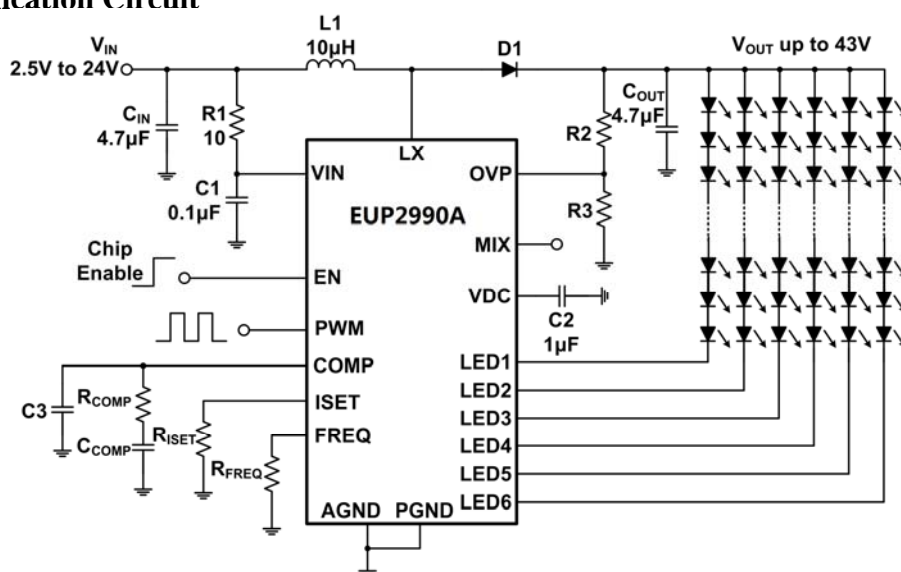- UMPC LCD Display Backlight

Typical Application Circuit

Figure 1.