LED Drivers for LCD Backlights

White LED Driver for large LCD Panels (DCDC Converter type)

BD9394FP, BD9394EFV

●General Description

BD9394FP, BD9394EFV is a high efficiency driver for white LEDs and designed for large LCDs. This IC is built-in a boost DCDC converters that employ an array of LEDs as the light source. BD9394FP, BD9394EFV has some protect function against fault conditions, such as the over-voltage protection (OVP), the over current limit protection of DCDC (OCP), the short circuit protection (SCP), the open detection of LED string. Therefore BD9394FP, BD9394EFV is available for the fail-safe design over a wide range output voltage.

●Key Specification

- Operating power supply voltage range: 9.0V to 35.0V
- LED minimum current 30mA
- LED maximum current: 150mA
- Oscillator frequency: 150kHz (RT=100kΩ)
- Operating Current: 4.5mA (Typ.)

Operating temperature range: -40℃ to +85℃

●Applications

TV, Computer Display, Notebook, LCD Backlighting

●Features

- 4ch LED constant current driver and DC/DC converter
- Maximum LED Current: 150mA
- LED Feedback Voltage: 0.37V (@NADIM=2.62V), so lower heat. Adjustable Feed Back Voltage by following LED Current setting.
- ±2% LED current accuracy (NADIM=2.62V, when each LED is set to 100mA)
- Analog current (Linear) dimming at NADIM pin
- LED pin rating 60V
- Individual detection and individual LED OFF for both open and short circuits
- Built-in ISET pin short-circuit protection circuit
- Set Soft-Start time by external capacitor.
- FET's Gate (N pin) is driven by 5.8V swing
- Built-in Vout discharge circuit for shutdown
- Built-in Vout overvoltage protection (OVP) / reduced voltage protection (SCP) circuit
- Adjustable LED Short Protection Voltage by LSP terminal
- HSOP20, HTSSOP-B24 package with high heat radiation efficiency

●Package

	W(Typ.) x D(Typ.) x H(Max.)
HSOP20	14.90mm x 7.80mm x 2.10mm
HTSSOP-B24	7.80mm x 7.60mm x 1.00mm

Fig.1(a) HSOP20

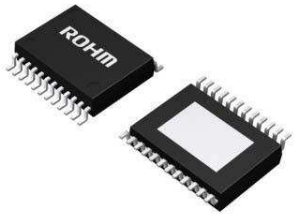

Fig.1(b) HTSSOP-B24

● Typical Application Circuit (4 light with PWM)

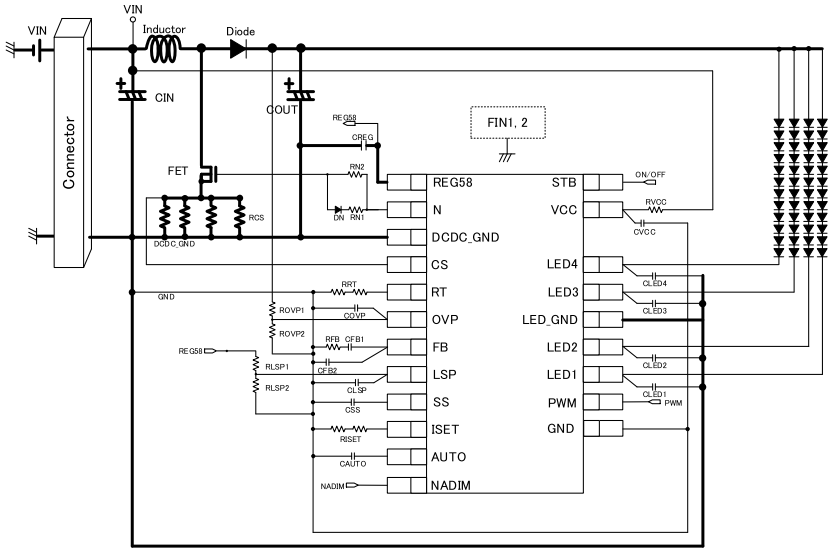

Fig.2 Typical Application Circuit

○Product structure : Silicon monolithic integrated circuit ○This product is not designed protection against radioactive rays