

One-Channel High Power LED Controller

■ General Description

OCP8123 is a highly integrated and cost effective Light Emitting Diode (LED) driver optimized for LCD monitor and LCD TV backlighting application. It provides a high performance LED backlight solution with minimized BOM count. The OCP8123 contains a PWM boost driver which uses current mode control and fixed frequency operation to regulate the LED current. The LED current is sensed through an external current sense resistor. The voltage across the sensing resistor is compared with reference level of 300mv the error is amplified to control the pulse width of the power switch thus to regulate the current flowing the LED.

The OCP8123 offers external low frequency PWM (LPWM) dimming method for a wide range of dimming control. The OCP8123 offers comprehensive protection such as power MOSFET over current protection (OCP), output over voltage protection (OVP), IC power supply under voltage lockout (UVLO), and LED open protection.

■ Features

- Wide Supply Voltage Range: 8.0V ~ 35V
- For Boost, SEPIC, LED Driver Applications
- Number of LEDs in series limited by external MOSFETs rating
- Current Mode PWM Controller With Good Dynamic Response
- External PWM Dimming Mode
- LED- to Ground Short-circuit Protection
- Inductor Short-circuit Protection
- Boost Diode Open Protection
- Boost Diode Short-circuit Protection
- Over Voltage Protection(Open-LED Protection)
- Over Current Protection
- Low in-rush Current Soft-start Function
- Under Voltage Lockout (UVLO)
- Thermal Shutdown
- Low Standby Current (<1uA)
- Available in SOP-8L Package

■ Applications

- LCD Monitor
- LCD TV
- Flat panel display

■ Pin Configuration

SOP-8L (Top View)

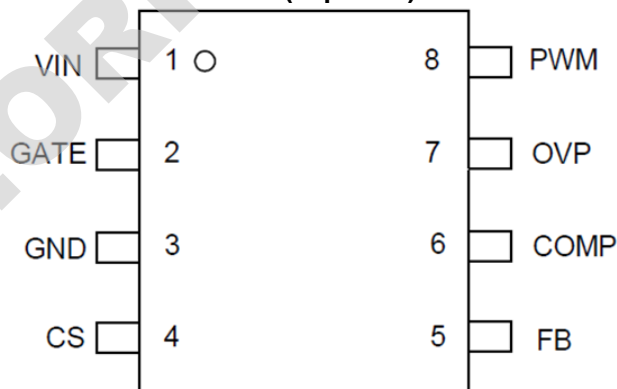


Figure 1, Pin Assignments of OCP8123

| Pin Name | Pin No. | I/O | Pin Function |
|----------|---------|-----|---|
| | SOP-8L | | |
| VIN | 1 | P | Input Power for controller and internal MOSFET driver |
| GATE | 2 | I | Gate Driver Output Pin |
| GND | 3 | G | Ground |
| CS | 4 | I | Current/Voltage sense pin |
| FB | 5 | I | LED Current Sense Input |
| COMP | 6 | I | Output of the error amplifier |
| OVP | 7 | I | Output over-voltage protection sense |
| PWM | 8 | I | External PWM Dimming Control |



■ Typical Application Circuit

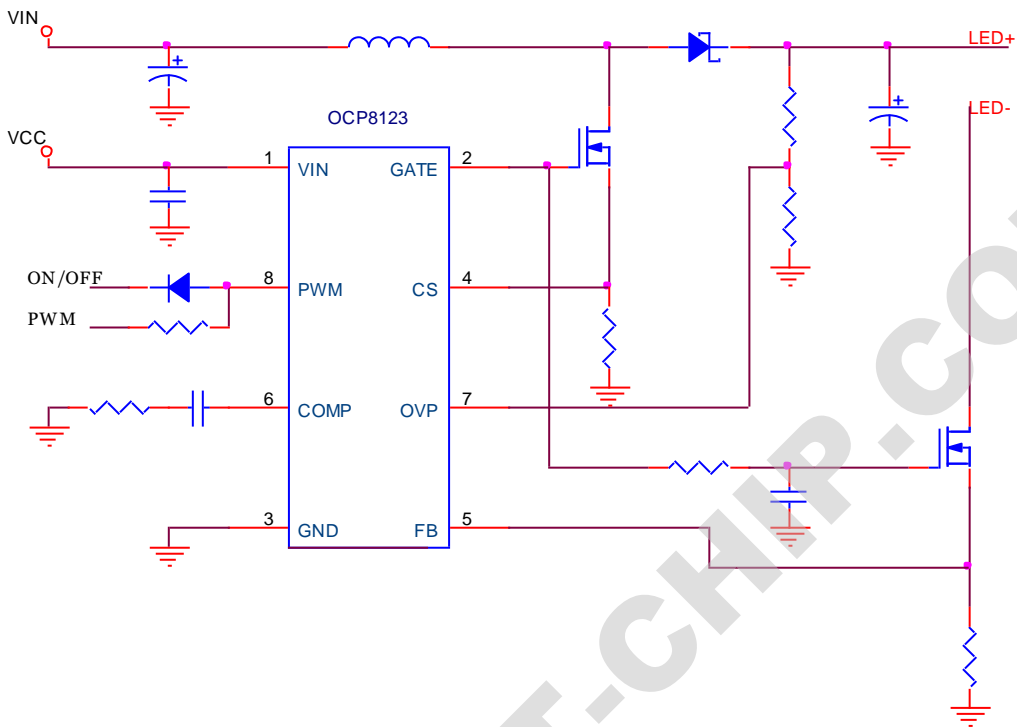


Figure 2, EN PMM Dimming Typical Application Circuit of OCP8123/A

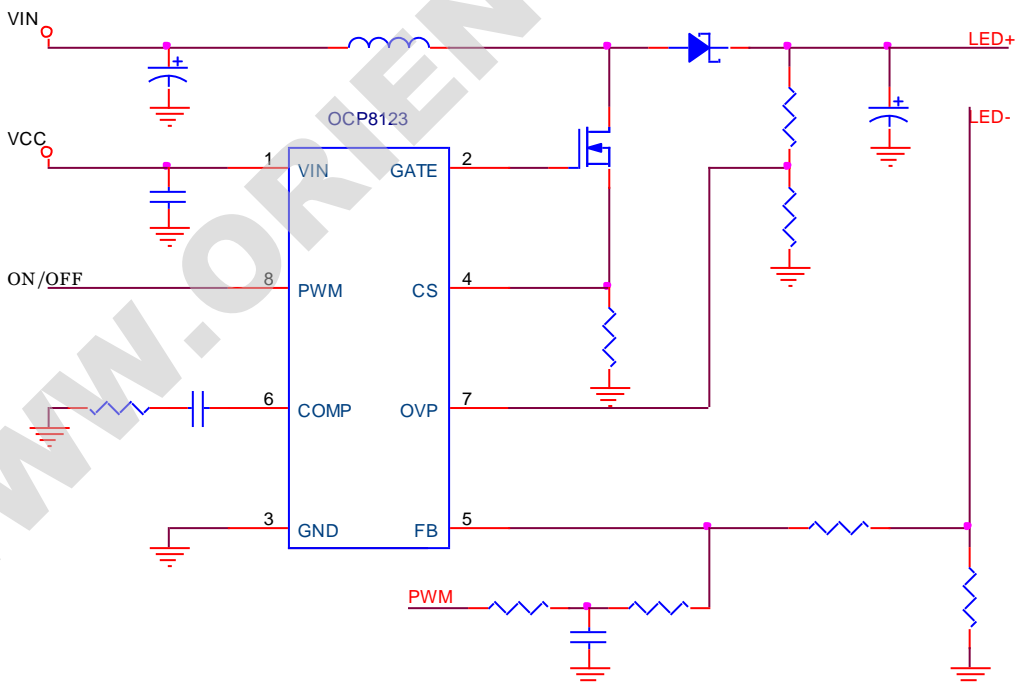


Figure 2A, FB PWM Dimming Typical Application Circuit of OCP8123/A



■ Ordering Information

| Part Number | Package Type | Package Qty | Temperature | Operating Frequency | Eco Plan | Lead/Ball Finish |
|-------------|--------------|----------------------------|-------------|---------------------|----------|------------------|
| OCP8123SAD | SOP-8L | 13-in reel 3500pcs/reel | -40~85℃ | 200KHZ | Green | Cu |
| OCP8123ASAD | SOP-8L | 13-in reel 3500pcs/reel | -40~85℃ | 100KHZ | Green | Cu |

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