

UNIVERSAL HIGH BRIGHTNESS LED DRIVER

DESCRIPTION

The FH29910 is a PWM high-efficiency LED driver control IC. It allows efficient operation of high-brightness(HB) LEDs from 10VDC up to 600V DC voltage sources. The circuit controls an external MOSFET at fixed switching frequencies up to 300kHz. The frequency can be programmed by using a single resistor. The device peculiarity is that a LED string is driven at a constant current rather than at a constant voltage, thus providing a constant light output and an enhanced reliability.

The output current can be programmed between a few milliamps and up to more than 1.0A. A rugged high-voltage junction isolated process was used and enabled the device to with stand an input voltage surge up to 600.0V. The output current to a LED string is programmable to any value between zero and its maximum value by applying an external control voltage to the linear dimming control input. To allow the device to accept an external control signal with a duty ratio of 0 to 100% and a frequency of up to a few kilohertz the circuit has a low-frequency PWM dimming input.

FEATURES

- Efficiency >90%
- Input voltage range 10V to 600V
- Withstanding input voltage surge up to 600V
- Output current range a few mA to more than 1.0A
- String of LEDs 1pc to several hundreds
- Constant-current LED driver
- Linear and PWM dimming capability

APPLICATIONS

- DC/DC or AC/DC LED driver
- RGB backlighting LED driver
- Back lighting of flat panel displays
- General-purpose constant current source
- Signage and decorative LED lighting
- Automotive
- Chargers

TYPICAL APPLICATION CIRCUIT

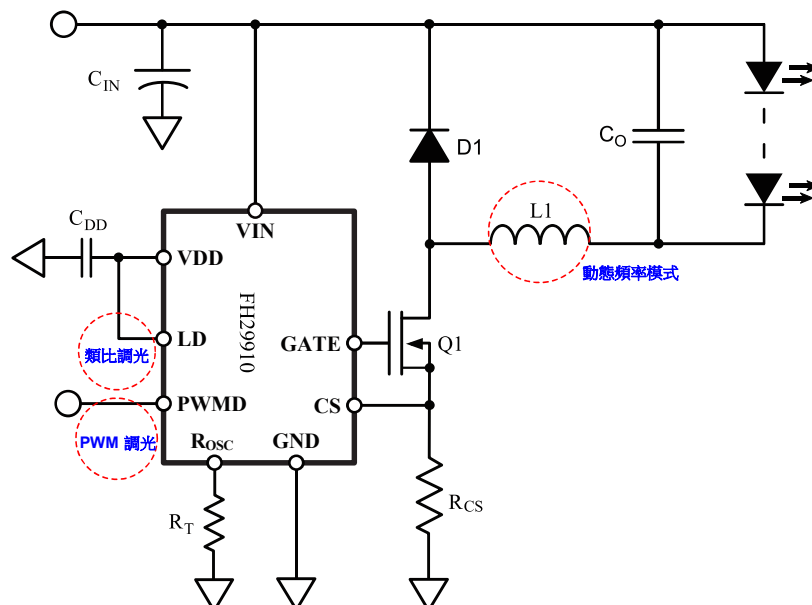
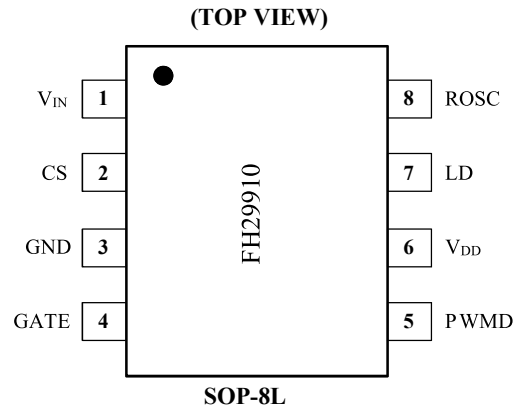


Figure 1. Typical Application Circuit

PIN CONFIGURATION



Pin Description

Pin#	Name	Description
1	V _{IN}	Input voltage
2	CS	LED Current Sense input. Internal current sense threshold is set at 250mV. The external sense resistor sets the maximum LED current.
3	GND	Device Ground
4	GATE	External MOSFET gate driver output
5	PWMD	Low-frequency PWM dimming control input with internal pull-down resistor.
6	V _{DD}	Regulated supply voltage output. Requires a storage capacitor to GND. Can be overdriven by external voltage applied to V _{DD} .
7	LD	Linear Dimming. Apply a voltage less than V _{CS(high)} to dim the LED(s).
8	R _{OSC}	Resistor to GND sets the oscillator/primary PWM frequency.
EP	-	Electrical and thermal conductive pad on the bottom of the FH29910. Connect this pad to ground, and provide sufficient thermal coupling to remove heat from the package.

TABLE 1: THERMAL RESISTANCE

Package	θ_{ja}
8-Lead SOP	101°C/W

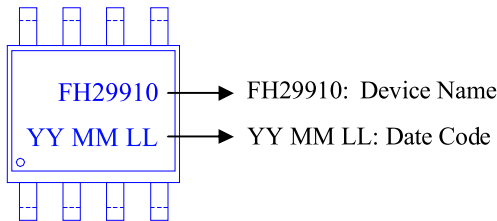
ORDERING INFORMATION

Part Number	Voltage Range	Features	Operating Temperature	Package Type	Top Mark	SPQ
FH29910S8	10.0V ~ 600.0V	<ul style="list-style-type: none"> • PWM LED Driver • Efficiency: >90% • Output current: 1.0A • String LEDs: Several hundreds • PD: 630mW 	-40°C to 85°C	SOP-8L	FH29910 <u>YY MM LL</u>	2500PCS/Reel

Note:

- **FH29910** devices are Pb-free and RoHs compliant.
- The surface prints of our semiconductor devices are subject to change during the production process and do not involve changes in electrical parameters, and we will not separately state the notice.
- If you have any other custom purchase needs, please contact our sales department.
- ForDevices reserves the right to amend and legally interpret the electrical parameters of this chip device. (<http://www.fordevices.com>)

Device Name: SOP-8L



ESD SENSITIVITY CAUTION

ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because very small parametric changes could cause the device not to meet its published specifications.



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▲ Update by Aug.2019