

## DESCRIPTION

The MT7282 is a constant current white LED driver designed for wide input voltage range from 2.5V to 40V system rail. The MT7282 can be configured as Buck, Boost and Buck-Boost topology. The MT7282 drives up to 10W with AC12V/DC12V input voltage. Current mode and fixed frequency operation provides fast transient response and eases loop stabilization. With a current sense amplifier threshold of 205mV, the LED current is programmable with one external current sense resistor and the power loss is minimized. The 450kHz operating frequency minimizes external inductor, input and output capacitor.

The MT7282 supports both PWM and analog dimming by a single control pin. Fault condition protection includes over voltage protection(OVP), cycle-by-cycle peak current limiting and thermal shutdown.

The MT7282 is available in ESOP8 packages.

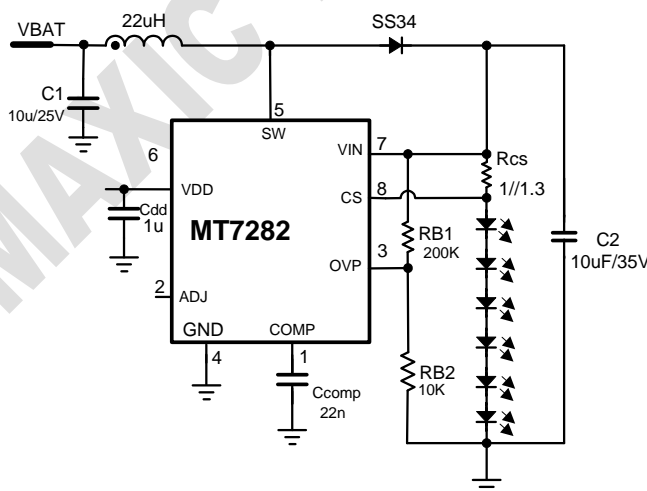
## FEATURES

- 2.5V to 40V input/output voltage range
- High efficiency up to 95%
- Cycle by Cycle Over Current Protection
- Internal 0.2ohm power MOSFET
- Support Boost ,Buck-Boost ,Buck topology
- LED temperature protection
- Stable with Low ESR Ceramic Capacitor
- OTP and OVP protection
- External setting over voltage protection
- Fixed switching frequency: 450kHz
- Frequency jittering for reduced EMI
- Low feedback voltage: 205mV
- Adjustable soft-start
- Support one pin analog dimming and up to 10kHz PWM dimming
- Available in ESOP8 package

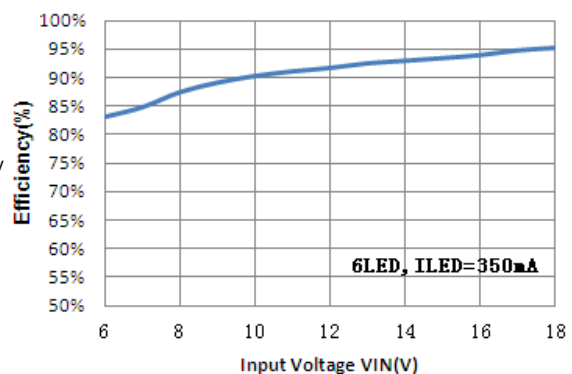
## APPLICATION

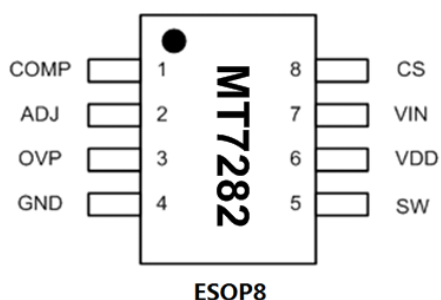
- Automotive and Marine Lighting
- High Power LED Driver
- Torch Driver
- Low Voltage LED Lighting (Landscape, Desk, Room, MR16 lighting)
- LED backlighting

## TYPICAL APPLICATION (STEP-UP/BOOST APPLICATION)

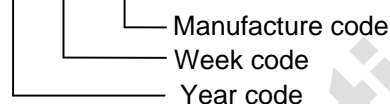


Efficiency VS. Input Voltage



**PIN CONFIGURATIONS**

**Chip Mark**

MT7282

YY WW xxxx

**Pin description**

Name	Pin No.	Description
COMP	1	Compensation Pin. Connect a 22nF ceramic capacitor ( $C_{COMP}$ ) from COMP to GND. This capacitor stabilizes the loop, controls soft-start time.
ADJ	2	Brightness and On/Off Control Pin. A voltage greater than 0.4V will turn on the chip. When ADJ pin voltage varying from 0.4V to 1.6V, the LED current will change from 0% to 100% of the maximum current. Any voltage above 1.6V will clamp to 100% maximum current. To use PWM dimming, apply a 200Hz to 10kHz square wave signal with amplitude greater than 1.6 V to this pin. Hold ADJ below 200mV for 3.5mS to shut down the IC .
OVP	3	Over voltage protection Pin. OVP happening in Boost or Buck-Boost converter turns off the chip after OVP pin voltage higher than 1.2V, OVP comparator have internal 100mV hysteresis.
GND	4	Ground
SW	5	Switch Output. SW is the source of the internal MOSFET switch. Connect to the power inductor and cathode of the Schottky rectifier. Keep the traces to the switching components as short as possible to minimize radiation and voltage spikes.
VDD	6	5V Reference Output. Bypass VDD to GND with a 1 $\mu$ F or greater ceramic capacitor.
VIN	7	Supply voltage. Bypass VIN to GND with 10u ceramic capacitor. MT7282 operates from a 2.5V to 40V unregulated input.
CS	8	LED current sense pin, the voltage between VIN and CS is 205mV.