DESCRIPTION

The MT7844S is a high-PF, non-isolate LED Driver IC. The floating-ground, high-side BUCK topology makes full wave detection possible. High precision output current is achieved. MT7844S works in Quasi-Resonant Mode (QRM), which improves both of efficiency and EMI performance. The system integrates the ultra-high voltage power supply circuit, the start-up resistor and power supply diode are not needed. Low external component count and cost is achieved.

Various protections such as over voltage protection (OVP), over current protection (OCP) and over temperature compensation, etc. are embedded to improve reliability. The MT7844S integrates 550V MOSFET, which further simplifies external circuit.

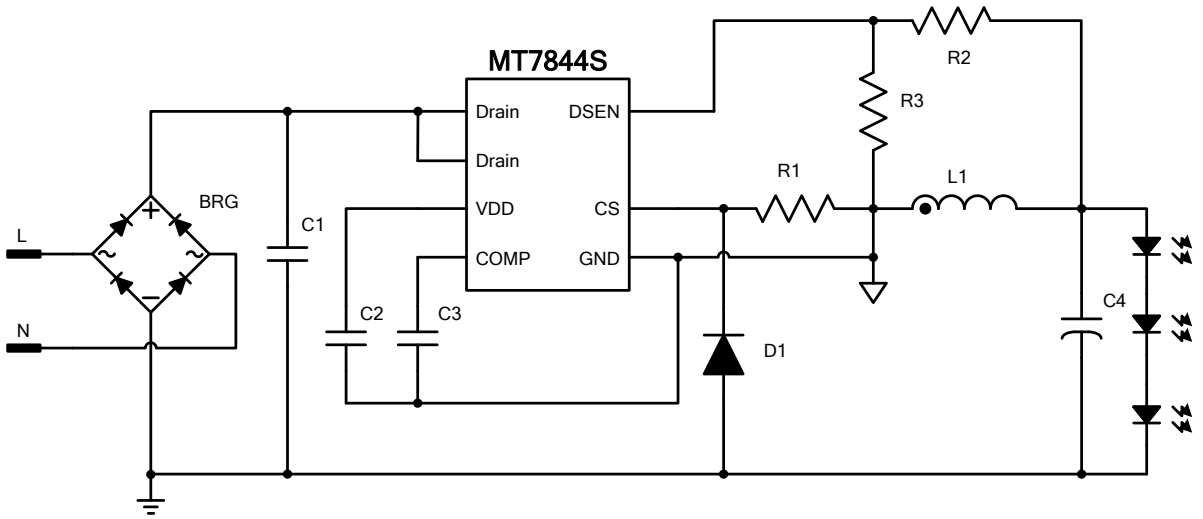
FEATURES

- Single-stage active power factor correction (PFC > 0.90)
- Ultra-high voltage power supply without start-up resistor and power supply diode
- High accurate LED current (±3%)
- Good Line and Load Regulation (±2%)
- Quasi-Resonant mode (QRM) operation
- Various protection schemes.
- Available in SOP7 packages

APPLICATIONS

- E14/E27/PAR30/PAR38/GU10 LED lamp
- T8/T10 LED tube
- Other LED lighting applications

Typical Application Circuit



ABSOLUTE MAXIMUM RATINGS

VDD Pin Voltage	-0.3V to 30V
Drain Pin Voltage	-0.3V to 550V
COMP/CS/DSEN Pins Voltage	-0.3V to 6V
Lead Temperature (soldering, 10 sec.)	260°C
P_{DMAX} (maximum power consumption)	0.8W
Storage Temperature	-55°C to 150°C
Junction Temperature (Tj)	150°C

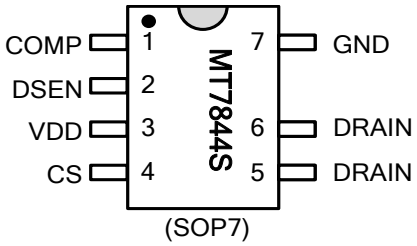
RECOMMENDED OPERATING CONDITIONS

Supply voltage	7.2V to 12V
Operating Temperature (Environment)	-40°C to 105°C
Output Power	≤12W @ ≤90°C (Environment temperature) ≤15W @ ≤70°C (Environment temperature)

THERMAL RESISTANCE

Junction to ambient ($R_{\theta JA}$)	128°C/W

PIN CONFIGURATIONS



(SOP7)

Chip Mark

MT7844S

XX Y WW XX

- XX: Manufacture code
- WW: Week code
- Y: Year code
- XX: Manufacture code

PIN DESCRIPTION

Name	Pin No.	Description
COMP	1	Internal EA's output pin. Connect a capacitor to ground for frequency compensation.
DSEN	2	Feedback pin for inductor zero current crossing detection.
VDD	3	Power Supply pin.
CS	4	Source of internal MOSFET, and Current Sense pin.
DRAIN	5,6	Drain of internal MOSFET.
GND	7	Ground pin.