

## DESCRIPTION

The MT7844D 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. MT7844D 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 MT7844D integrates 550V MOSFET, which further simplifies external circuit.

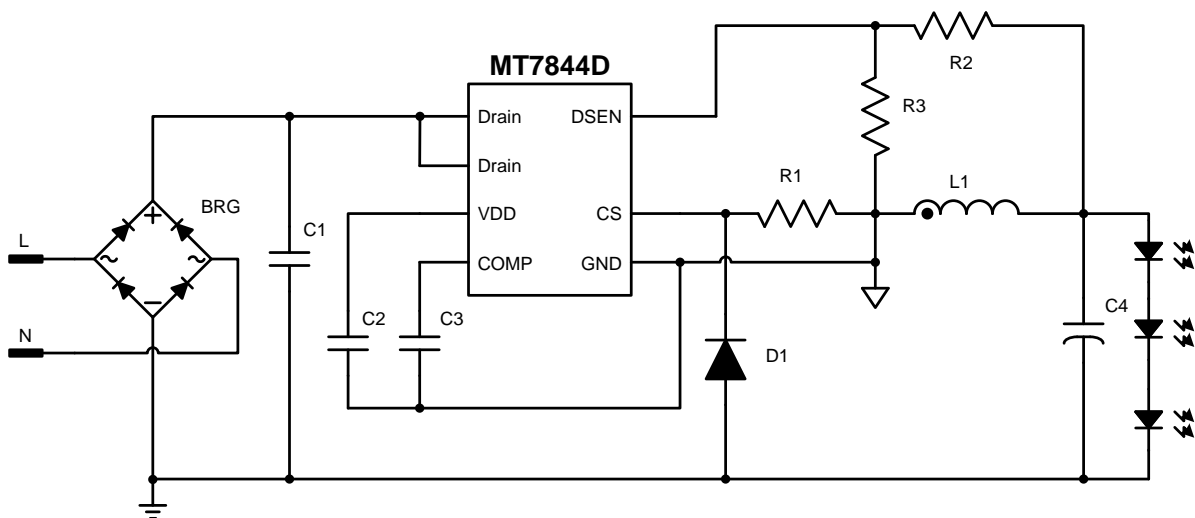
## FEATURES

- 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 ( $\pm 3\%$ )
- Good Line and Load Regulation ( $\pm 2\%$ )
- Quasi-Resonant mode (QRM) operation
- Various protection schemes.
- Available in DIP7 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 <sub>DMAX</sub> (maximum power consumption) | 1.5W           |
| Storage Temperature                           | -55°C to 150°C |

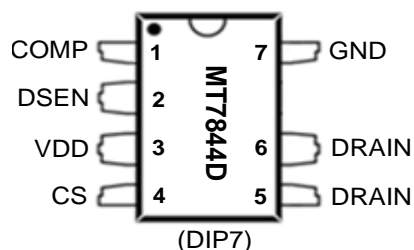
## Recommended operating conditions

|                                     |  |
|-------------------------------------|--|
| Supply voltage                      | 7.2V to 12V  |
| Operating Temperature (Environment) | -40°C to 105°C   |
| Output Power                        | ≤15W @ ≤90°C (Environment temperature)<br>≤18W @ ≤70°C (Environment temperature) |

## Thermal resistance

|   |        |
|---|--------|
| Junction to ambient (R <sub>θJA</sub> ) | 70°C/W |
|---|--------|

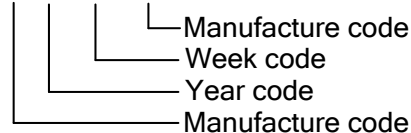
## PIN CONFIGURATIONS



## Chip Mark

MT7844D

XX Y WW XX



## 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.   |