

DESCRIPTION

MT7811B is a high precision LED constant current controller operating at critical conduction mode (CRM) with zero current switched-on and peak current switched-off. It's mainly targeted for non-isolated buck LED power systems.

Critical conduction mode ensures that the MT7811B turns on the internal power MOSFET when the inductor current reaches zero, reducing the power MOSFET switching loss, and achieving more than 95% efficiency. With critical conduction mode, and the input compensation, MT7811B can achieve precise output current and excellent line regulation and load regulation.

MT7811B embedded with internal power MOSFET, it can achieve simplified peripheral circuits and low BOM cost.

MT7811B has wide working voltage range, which is suitable for full-range AC input. MT7811B provides various protection features to improve the system reliability, including over current protection (OCP), short circuit protection (SCP), adjustable over voltage protection (OVP) and thermal adjustment, etc.

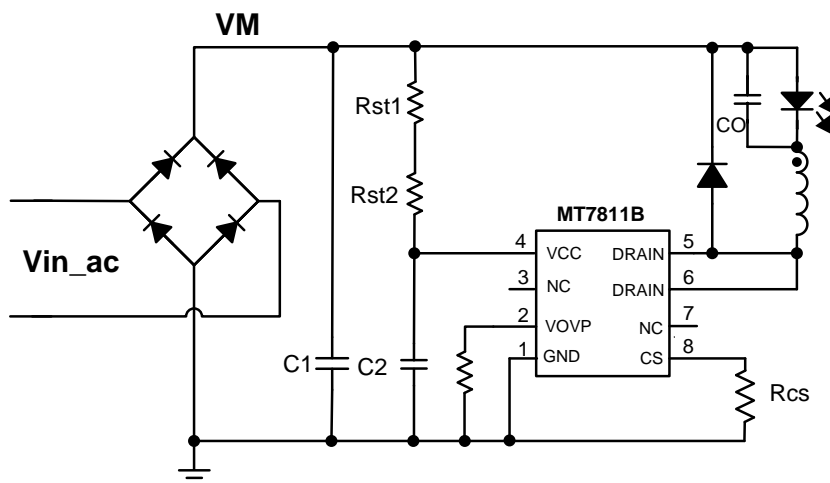
FEATURES

- Critical Conduction Mode, insensitive to the inductance.
- High efficiency (up to 95%)
- Highly accurate constant LED current
- Cycle-by-cycle current limiting
- LED short circuit protection
- Adjustable OVP through external resistor
- Leading edge blanking technique
- Under-voltage lockout (UVLO) protection
- Thermal adjustment
- Available in SOP8 package

APPLICATIONS

- LED bulb, LED tube, LED signal and landscape lamp
- LED stage light, LED candle light, LED corn light, etc.
- General purpose constant current source

Typical Application Circuit



ABSOLUTE MAXIMUM RATINGS

| | |
|--|---------------|
| VCC maximum sink current | 5mA |
| VOVP (over voltage protection pin voltage) | -0.3 ~ 6V |
| DRAIN (internal HV power MOS drain voltage) | -0.3V ~ 500V |
| SOURCE (internal HV power MOS source voltage) | -0.3 ~ 40V |
| CS (current sense pin input voltage) | -0.3V ~ 6V |
| P _{DMAX} (maximum power dissipation) | 0.8W |
| Storage Temperature range | -55°C ~ 150°C |
| Junction Temperature (T _j) | 150°C |

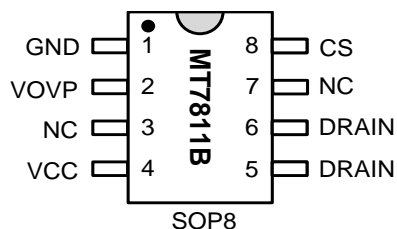
RECOMMENDED OPERATING CONDITIONS

| | |
|-----------------------|---------------|
| Operating Temperature | -40°C ~ 105°C |
| Output Current | <200mA |

THERMAL RESISTANCE

| | |
|---|---------|
| Junction to ambient (R _{θJA}) | 128°C/W |
|---|---------|

PIN CONFIGURATIONS



Chip Mark

MT7811B

X YY WW XX

Manufacture code

Week code

Year code

Manufacture code

PIN DESCRIPTION

| Name | Pin No. | Description |
|-------|---------|---|
| GND | 1 | Chip ground |
| VOVP | 2 | Over voltage protection pin |
| NC | 3/7 | No connection |
| VCC | 4 | Power supply, internal clamped at 15.5V |
| DRAIN | 5/6 | Drain of internal high-voltage power MOSFET |
| CS | 8 | Current sense input, connect a sense resistor to ground |