

### DESCRIPTION

MT7815B 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 and PWM/Analog dimmable application.

Critical conduction mode ensures that the MT7815B turns on the internal switch when the inductor current reaches zero, reducing the switch-on switching losses, and achieving more than 93% efficiency.

With critical conduction mode, and the input compensation, MT7815B outputs high accuracy LED current, and further achieves excellent line regulation and load regulation.

MT7815B has wide working voltage range, which is suitable for full-range AC input or 12V ~ 500V DC input voltage. MT7815B provides various protection features to improve the system reliability, including over current protection (OCP), short circuit protection (SCP), adjustable over voltage protection (OVP) and over temperature regulation (OTR), etc.

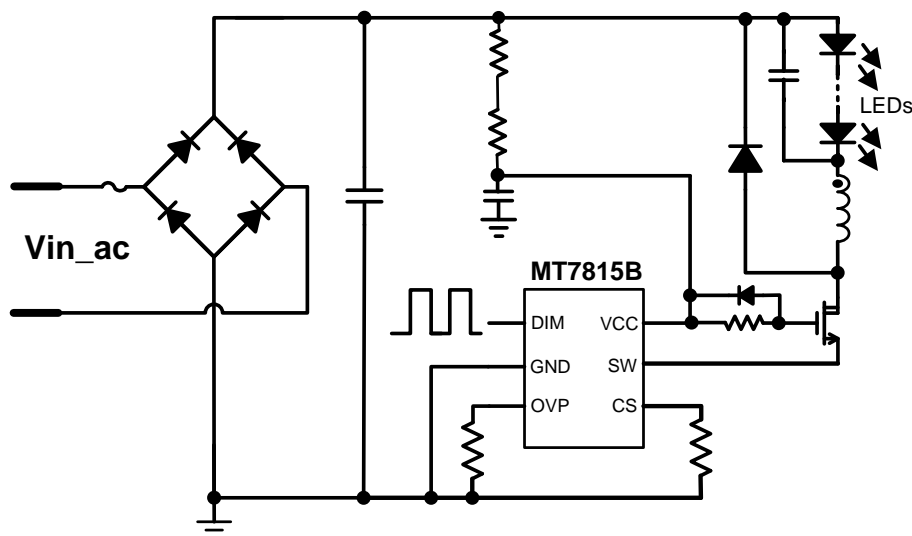
### FEATURES

- Critical Conduction Mode, insensitive to the inductance
- PWM/ Analog dimming function
- High efficiency (up to 93%)
- Highly accurate constant LED current
- Cycle-by-cycle current limiting
- LED short circuit protection
- Adjustable LED over voltage protection
- Leading edge blanking technique
- Under-voltage lockout (UVLO) protection
- Over temperature regulation (OTR)
- Available in SOT23-6 package

### APPLICATIONS

- LED tube, signal lamp, landscape lamp
- LED stage light, etc
- Intelligent LED lighting application

### Typical Application Circuit



**ABSOLUTE MAXIMUM RATINGS**

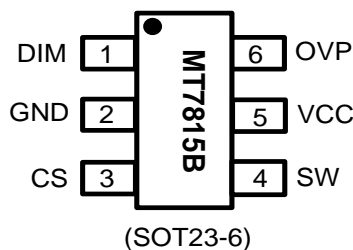
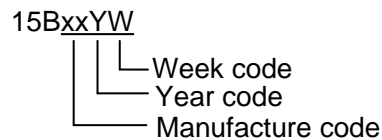
VCC maximum sink current	5mA
SW (internal switch input pin input voltage)	-0.3V~ 40V
OVP (over voltage protection pin input voltage)	-0.3V ~ 6V
DIM (PWM/Analog dimming pin input voltage)	-0.3V ~ 6V
CS (current sense pin input voltage)	-0.3V ~ 6V
P <sub>DMAX</sub> (maximum power dissipation)	0.5W
Storage Temperature range	-55°C ~ 150°C
Junction Temperature (T <sub>j</sub> )	150°C

**RECOMMENDED OPERATING CONDITIONS**

Operating Ambient Temperature Range	-40°C ~ 125°C
Output Current	<700mA

**Thermal resistance**

Junction to ambient (R <sub>θJA</sub> )	170°C/W
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**PIN CONFIGURATIONS**

**Chip Mark**

**PIN DESCRIPTION**

Name	Pin No.	Description
DIM	1	Chip enable/ PWM dimming /analog dimming Internal has a 300K pull_up resistor, this pin can be floating
GND	2	Ground
CS	3	Current sense input, connect a sense resistor to ground
SW	4	Internal switch input
VCC	5	Power supply pin, internal clamped at 15V
OVP	6	Adjustable over voltage protection pin