

DESCRIPTION

MT7823 is a high precision LED constant current control chip 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 MT7823 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, MT7823 outputs high accuracy LED current, and further achieves excellent line regulation and load regulation. It's insensitive to inductance and the I-shape inductor can be used.

MT7823 is intended for simplified peripheral circuits, low BOM cost application with an internal power MOSFET.

MT7823 has wide working voltage range, which is suitable for full-range AC input or 60V-400V DC input voltage. MT7823 provides various protection features to enhance the system reliability, including over current protection (OCP), short circuit protection (SCP), and thermal adjustment, etc.

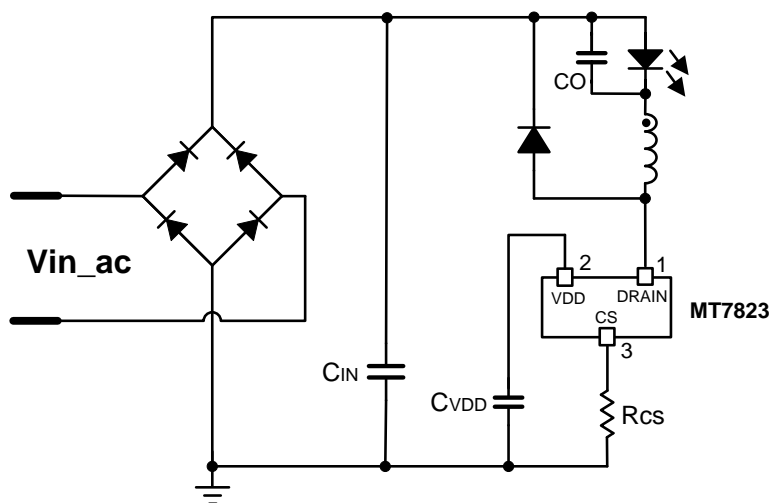
FEATURES

- Critical Conduction Mode, insensitive to the inductance.
- High efficiency (up to 95%)
- Highly accurate constant LED current
- Cycle-by-cycle current limitation
- LED Short Circuit Protection
- Leading edge blanking technique
- Under-voltage lockout (UVLO) protection
- Thermal adjustment
- Available in SOT23-3 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

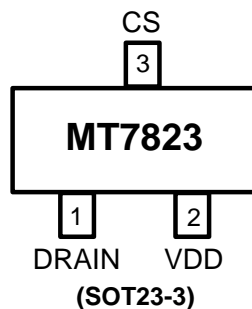
DRAIN (internal high-voltage power MOS drain voltage)	-0.3V ~ 500V
VDD (Internal power supply output voltage)	-0.3 ~ 10V
P _{DMAX} (maximum power consumption)	0.5W
Storage Temperature range	-55°C ~ 150°C
Junction Temperature (T _j)	150°C

RECOMMENDEDE OPERATING CONDITIONS

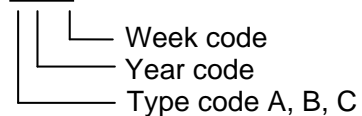
Operating Temperature	-40°C ~ 105°C
Output Current	<80mA (Type A)
Input voltage: 176Vac~265Vac	<130mA (Type B)
Output voltage: VLED = 36V	<180mA (Type C)

ORDERING INFORMATIONS

Device	R _{DS(ON)}	Mark
MT7823A	30ohm	7823AYW
MT7823B	18ohm	7823BYW
MT7823C	12ohm	7823CYW

PIN CONFIGURATIONS

Chip Mark

7823XYW


PIN DESCRIPTION

Name	Pin No.	Description
DRAIN	1	Drain of internal high-voltage power MOSFET
VDD	2	Power supply pin. Internal clamped at 7.2V.
CS	3	Chip Ground and current sense pin, connect a sense resistor to ground