JW1760

Non-Isolated Buck
LED Driver Controller

Parameters Subject to Change Without Notice

DESCRIPTION

The JW1760 is a constant current LED controller with high current accuracy which applies to single stage step-down LED drivers.

High accuracy of output current is achieved by sensing the output current directly. Critical conduction mode operation reduces the switching losses and significantly increases the efficiency. JW1760 can be supplied from the output directly, and auxiliary winding is not needed.

JW1760 has multi-protection functions which largely enhance the safety and reliability of the system, including VCC over-voltage protection, VCC UVLO, short-circuit protection, LED open protection, cycle-by-cycle current limit and over-temperature protection.

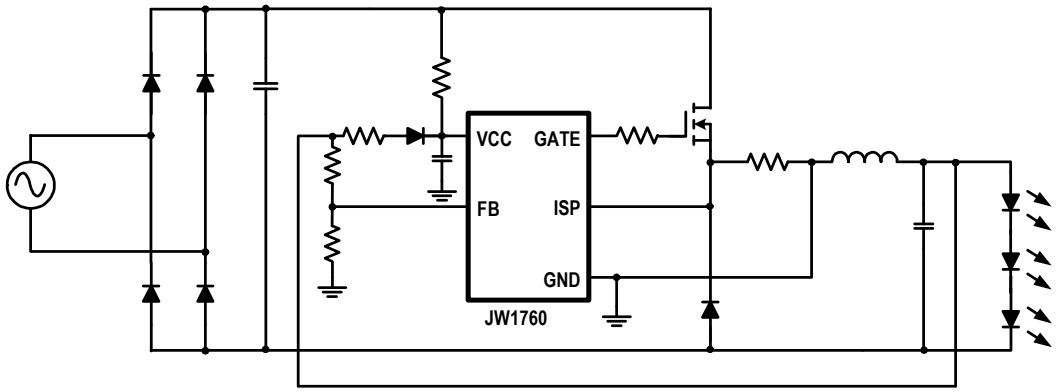
FEATURES

- No Auxiliary Winding
- Good Line and Load Regulation (<+-1%)
- Critical Conduction Mode
- High Efficiency over universal input range
- Cycle-by-cycle Current Limit
- LED Short Protection
- LED Open Protection
- Over Temperature Protection
- SOT23-5 Package

APPLICATION

- LED Driver

TYPICAL APPLICATION



ORDER INFORMATION

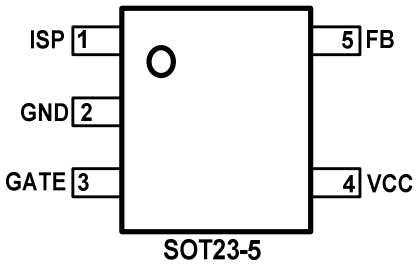
LEAD FREE FINISH	TAPE AND REEL	PACKAGE	TOP MARKING
JW1760SOTA#PBF	JW1760SOTA#TRPBF	SOT23-5	1760

Note：

JWXXXXPPPP#TRPBF
- Pb Free
- Tape and Reel（If "TR" is not shown, it means Tube）
- Package Code
- Part Number

PIN CONFIGURATION

TOP VIEW



SOT23-5

ABSOLUTE MAXIMUM RATING[1)]

VCC Pin 43V
GATE Pin 18V
Other Pins ..... -0.3V to 4.5V
Junction Temperature[2) 3)] 150ºC
Lead Temperature..... 260ºC
Storage Temperature…….....-65ºC to +150ºC

RECOMMENDED OPERATING CONDITIONS

VCC PIN.....8V to 43V
FB PIN .....1.6V to 2.6V
Junction Temperature (T_J) ..... -40ºC to 125ºC

THERMAL PERFORMANCE[4)]

	θ_{JA}	θ_{JC}
SOT23-5	220	130ºC/W

Note：

1) Exceeding these ratings may damage the device.

2) The JW1760 guarantees robust performance from -40°C to 150°C junction temperature. The junction temperature range specification is assured by design, characterization and correlation with statistical process controls.

3) The JW1760 includes thermal protection that is intended to protect the device in overload conditions. Thermal protection is active when junction temperature exceeds the maximum operating junction temperature. Continuous operation over the specified absolute maximum operating junction temperature may damage the device.

4) Measured on JESD51-7, 4-layer PCB.

ELECTRICAL CHARACTERISTICS

V_{IN} = 20V, T_A = 25°C, unless otherwise stated.

Item	Symbol	Condition	Min.	Typ.	Max.	Units
V_{CC} Turn-On Voltage	V_{CC_ON}			14.6		V
V_{CC} Turn-Off Voltage	$V_{CC\_OFF\_L}$			7.7		V
V_{CC} Hysteresis	V_{CC_HYS}	V_{CC_ON} - $V_{CC\_OFF\_L}$		6.9		V
V_{CC} Over-Voltage Threshold	V_{CC_OVTH}			35		V
V_{CC} Shunt Regulator Current Limit	I_{CC_SHUNT}	V_{CC} = 58V		5		mA
V_{CC} Quiescent Current	I_Q	V_{CC}<V_{CC_ON}		26		uA
FB Over-Voltage Threshold	V_{FB_H}			3		V
V_{ISP} Reference Voltage	V_{ISP}			100		mV
Gate Output High	V_{GATE_H}			13.2		V
Leading Edge Blanking Time	T_{LEB}			1000		ns
Maximum Frequency	F_{MAX}			120		kHz
Gate Driver Rise Time	T_{GATE_R}	C_L=1nF 10% to 90%		20		ns
Gate Driver Fall Time	T_{GATE_F}	C_L=1nF 90% to 10%		20		ns