

**Offline Step-down LED Regulator
With PFC and High Voltage MOSFET**

Parameters Subject to Change Without Notice

DESCRIPTION

The JW1769A/B/C is a constant current LED regulator with high current accuracy which applies to single stage step-down power factor corrected LED drivers. 600V power MOS is integrated, which can significantly simplify the design of LED lighting system.

High accuracy of output current is achieved by sampling the output current directly. Critical conduction mode operation reduces the switching losses and largely increases the efficiency. JW1769A/B/C is supplied from the output directly, and auxiliary winding is not needed.

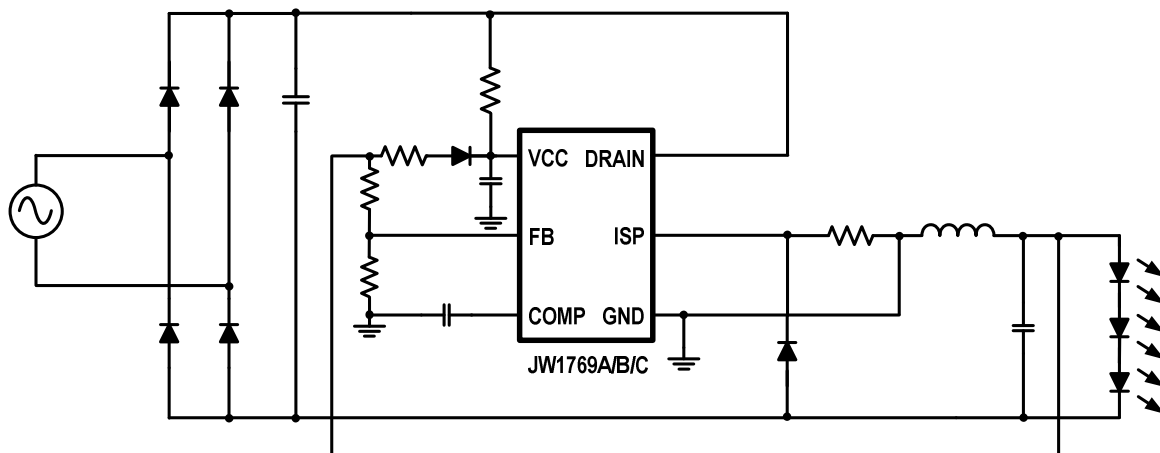
JW1769A/B/C has multi-protection functions which largely enhance the safety and reliability of the system, including VCC over-voltage protection, VCC UVLO, short-circuit protection, LED open protection, cycle-by-cycle current limit and over-temperature protection.

FEATURES

- No auxiliary winding
- 600V high voltage MOSFET integrated
- EMI friendly
- High current accuracy of line and load regulation
- High power factor with low output current-ripple
- Critical conduction mode
- High efficiency over wide operating range
- Cycle-by-cycle current limit
- LED short protection
- LED open protection
- Over-temperature protection
- Compact SOP7 package

APPLICATIONS

- Non-isolation Offline LED driver

TYPICAL APPLICATION

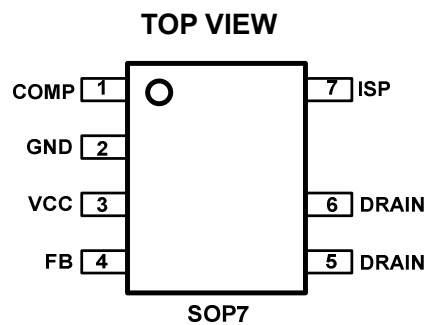
ORDER INFORMATION

LEAD FREE FINISH	TAPE AND REEL	PACKAGE	TOP MARKING
JW1769ASOPA#PBF	JW1769ASOPA#TRPBF	SOP7	JW1769A
JW1769BSOPA#PBF	JW1769BSOPA#TRPBF	SOP7	JW1769B
JW1769CSOPA#PBF	JW1769CSOPA#TRPBF	SOP7	JW1769C

Note:

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

PIN CONFIGURATION



ABSOLUTE MAXIMUM RATING¹⁾

VCC PIN.....	43V
All other pins.....	-0.3V to 4.5V
Junction Temperature ^{2) 3)}	150°C
Lead Temperature.....	260°C
Storage Temperature.....	-65°C to +150°C

RECOMMENDED OPERATING CONDITIONS

FB PIN	1.6V to 2.6V
Operating Junction Temp(T _J).....	-40°C to 125°C

THERMAL PERFORMANCE⁴⁾

	θ_{JA}	θ_{JC}
SOP7	96.....	45°C/W

Note:

- Exceeding these ratings may damage the device.
- JW1769A/B/C 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.
- The JW1769A/B/C 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.
- Measured on JESD51-7, 4-layer PCB.

ELECTRICAL CHARACTERISTICS

$V_{IN} = 20V$, $T_A = 25^\circ C$, unless otherwise stated.

Item		Symbol	Condition	Min.	Typ.	Max.	Units
V _{CC} Turn-On Voltage		V _{CC_ON}		18	21.0	24	V
V _{CC} Turn-off Low Voltage		V _{CC_OFF_L}		6.4	7	8	V
V _{CC} Hysteresis		V _{CC_HYS}	V _{CC_ON} -V _{CC_OFF_L}		14		V
V _{CC} Clamp		V _{CC_CLP}			35		V
V _{CC} Shunt Regulator Current Limit		I _{CC_SHUNT}	V _{CC} = 58V	4	6	8	mA
V _{CC} Quiescent Current		I _Q	V _{CC} <V _{CC_ON}	26	31	36	uA
FB Pin High Threshold		V _{FB_H}		2.75	2.9	3.05	V
V _{ISP} Sample Value		V _{ISP}		96	100	104	mV
V _{ISP} Max Voltage				500	550	610	mV
Leading Edge Blanking Time		T _{LEB}		500	750	1000	ns
Maximum Frequency		F _{MAX}			140	160	kHz
Maximum MOS On Time		T _{ONMAX}			30		us
MOS Saturation Current	JW1769A	I _d	V _{gs} =10V	4			A
	JW1769B			10			
	JW1769C			8			
MOS R _{dson}	JW1769A	R _{dson}	V _{gs} =10V		6.8		Ω
	JW1769B				1.8		
	JW1769C				3.5		
Breakdown Voltage	JW1769A	BV		600			V
	JW1769B			600			
	JW1769C			600			