

Parameters Subject to Change Without Notice

JW1827 FEATURES

- Supply From Line Directly
- Critical Conduction Mode
- Adaptive for PWM Dimming
- Optimized Dimming Performance
- 0%~100% Dimming Range
- EMI Friendly
- LED Short Protection
- Vin UVLO
- Over Thermal Protection
- SOT23-6 package

APPLICATIONS

- LED lighting

ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Value	Unit
Input voltage	V_{IN}	100~264	V
Output voltage	V_O	40	V
Output current	I_o	0.2	A

DESCRIPTION

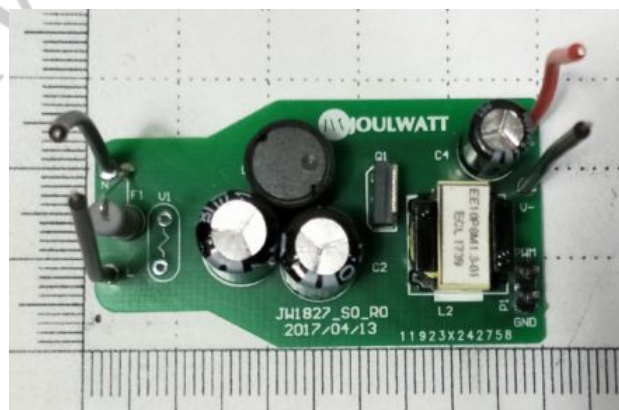
JW[®]1827 is an offline step-down LED controller adaptive for PWM dimming.

High output constant current accuracy is achieved with optimized sampling technics. Critical conduction mode ensures high efficiency and good EMI performance.

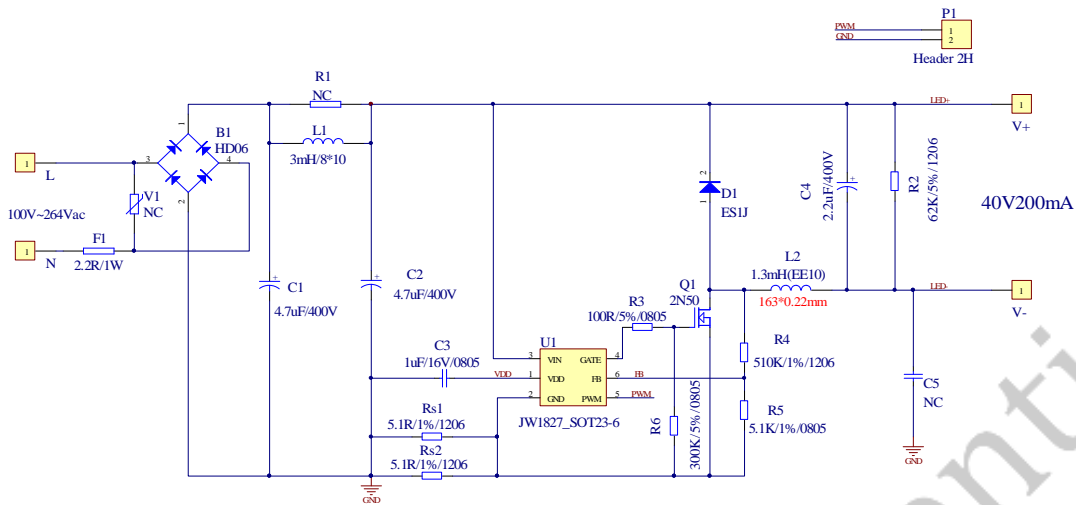
JW1827 is supplied from line voltage directly without auxiliary winding and start-up circuitry, which can lower the system BOM cost.

JW1827 has multi-protection functions which largely enhance the safety and reliability of the system, including VDD UVLO, Vin UVLO, LED short protection and over-temperature protection.

EVALUATION BOARD



Schematic



BILL OF MATERIALS

Quantity	Designator	Comment	Description	Footprint	Manufacturer	Manufacturer P/N
1	B1	HD06	Diode Bridge	BM10F		
2	C1, C2	4.7uF/400V	ECAP	RB.8		
1	C3	1uF/16V/0805	Ceramic Capacitor	0805C		
1	C4	2.2uF/400V	ECAP	RB.1/.25		
0	C5	NC				
1	D1	ES1J	Diode	SMA		
1	F1	2.2R/1W	Fuse Resistor	R-AXIAL0.6		
1	L1	3mH/8*10	DM Inductor	L-8*10		
1	L2	1.3mH(EE10: 163*0.22mm)	Inductor	EE10		
1	Q1	2N50	Mosfet	TO251		
0	R1	NC				
1	R2	62K/5%/1206	Resistor	1206R		
1	R3	100R/5%/0805	Resistor	0805R		
1	R4	510K/1%/1206	Resistor	1206R		
1	R5	5.1K/1%/0805	Resistor	0805R		
1	R6	300K/5%/0805	Resistor	0805R		
2	Rs1, Rs2	5.1R/1%/1206	Resistor	1206R		
1	U1	JW1827_SOT23-6	IC_JW1827	SOT23-6	Joulwatt	
0	V1	NC		7D471-3		

PRINTED CIRCUIT BOARD LAYEROUT

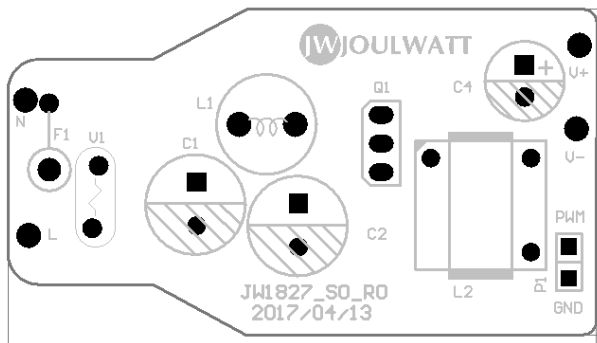


Fig. 1—Top Layer

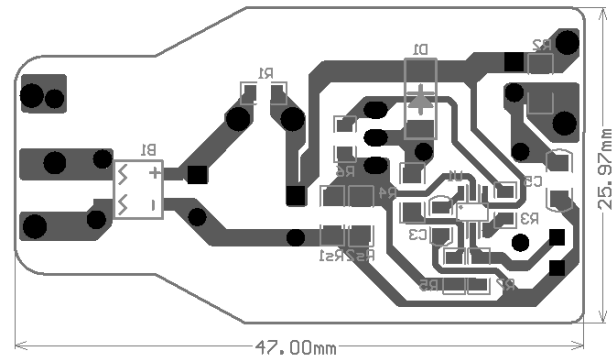


Fig. 2—Bottom Layer

QUICK START

1. Connect the anode of the load (13 LEDs with VF falls between 3~3.3V) to “LED+” marked on the EVB, and cathode to “LED-”.
2. Connect 5V PWM signal to P1 marked on the PCB.
3. Set the AC source to 100V ~264V, turn off the source.
4. Connect the “Line” of AC source to the “L”, and “neutral” to “N”.
5. Turn on the AC source.
6. Enable the PWM signal and the evaluation board starts operating in normal condition, Change the duty cycle of the PWM signal to change the output current.
7. Change Rs1 and Rs2 if you want another Max output current.
8. To get more information, please refer to the datasheet of JW1827.

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