Revision History

Rev. No.	History	Issue Date
1.0	New issue	May 19, 2010
1.1	Add product number of AC/DC module	Jun. 11, 2010
1.2	Revise table1 and add new application circuit	Oct. 27, 2010
1.3	Add the condition when input is 6V	Nov. 26, 2010
1.4	Updated new version PCB size	Mar. 10, 2011

Feature

- Two output current : 350mA(CS8801M3), 700mA(CS8801M7)
- 6-18Vdc or 12Vac input voltage *(Note 1)*
- Maximum efficiency : 95%(M3)、85%(M7)
- Over temperature protection
- Over current protection(auto recovery)
- -40°C to +105°C operating temperature range
- LED string from 1 to 3 LEDs *(Note 1)*
- PWM dimming function
- Low working temperature *(Page2, Note 4)*
- Minimized size
- Low radiation noise

Note 1：If use the DC input, the sum of output LED forward voltage (VF) must be lower than input voltage at least 1.5V. If use the AC input, please refer to the table1. Because it is the different input situation.

Application

- General Lighting: MR16, MR11 and AR111
- Other LED lighting in Automotive, Industrial and Decorative/ Sport/ Flash lighting

Description

CS8801M serial is a buck converter can be used when LED string voltage is needed to be lower than the input supply voltage at least 1.5V. It operates from an input supply between 6Vdc to 18Vdc or voltage of 12Vac, and provides an externally adjustable constant output current of up to 700mA. With expectation on multiplex usage of LED Parallels and serials, CS8801Mx can supply close to 7 watts at 12Vac input to fit in with specific application.

CS8801M serial also provides a low-frequency PWM dimming input that can accept an external control signal with duty ratio of 0-100% and a frequency of up to 20KHz.

Recommend Application

We provide 2 types of module which are different output currents. We also support two type PCB size (CS8801MA and CS8801MB serial) to adapt client's MR16 mechanism. There is no different function between CS8801MA and CS8801MB version, but CS8801MB serial have the connector option. Refer to the following product application reference table and choose the best module to get the correct output current for your design solution.

Table 1 : Products table

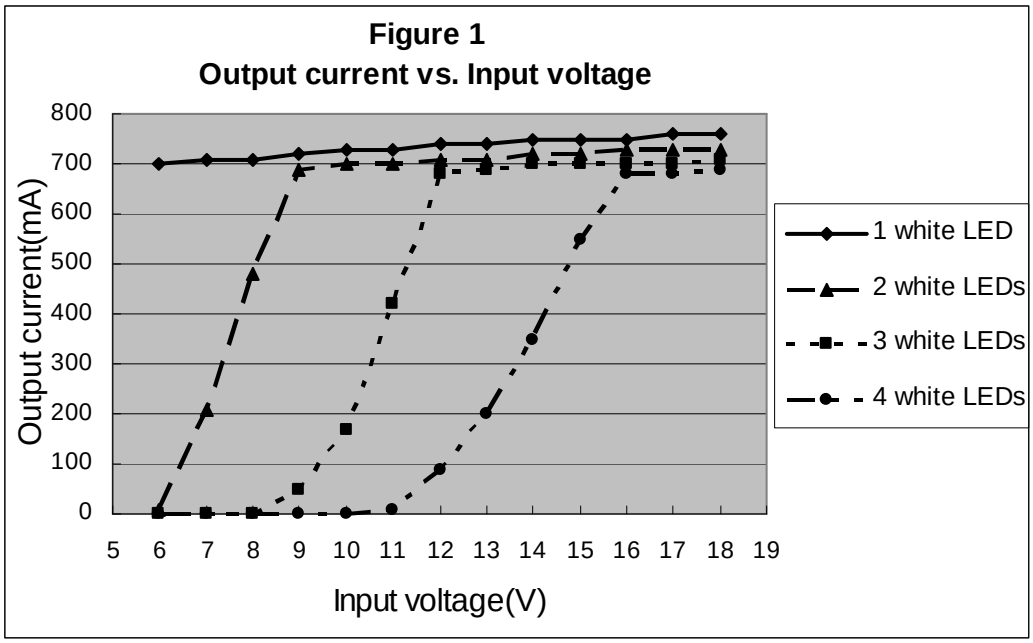
Product No.		CS8801MA0035 CS8801MB0035	CS8801MA0070 CS8801MB0070
Application *(Note 2)*		1~3W	2~7W
Input Voltage range		DC: 6 ~ 18Vdc AC: 12Vac	
Output current *(Note 3)*		350mA±5%	700mA ±5%
Output voltage	Input: 12Vac	1.5V~10.5V	1.5V~7V
	Input: 6Vdc	1.5V~4.5V	1.5V~4.5V
	Input: 12Vdc	1.5V~10.5V	1.5V~10.5V
	Input: 18Vdc	1.5V~16.5V	1.5V~16.5V
Recommend LED amounts (white LED : Vf= 3.3~3.4V)		1~3 serials with 1 Parallels	1~3 serials with 2 Parallels
Efficiency		80~95%	65~85%
Working temperature (Ambient Temp. 25℃) *(Note 4)*		50℃	65℃
PCB Size and dimension Length * width *height	CS8801MA serial	Refer to the outline page	
	CS8801MB serial		

Note 2 : Output Power can be raised up by using the DC input than 12V, but the thermal problem should be considered.

Note 3 : Preventing LED from damage, when CS8801M7 is chosen and built, output current is been set at 700mA in house, two shunt (parallel) LED strings are highly recommended to average the output current (current on each LED string is 350mA).

Note 4 : Working temperature is the highest of key components' temperature (diode, MOSFET, capacitor), and tested at Ambient Temperature 25℃ by open frame.

Figure 1 shows the relation between input voltage and output current (CS8801M7 / 700mA). For the application of 4 series-connected LEDs, the design must keep in mind that the input voltage must be maintained higher than the forward voltage drop (Vf) across the string consists of 4 LEDs.



Typical application Circuits

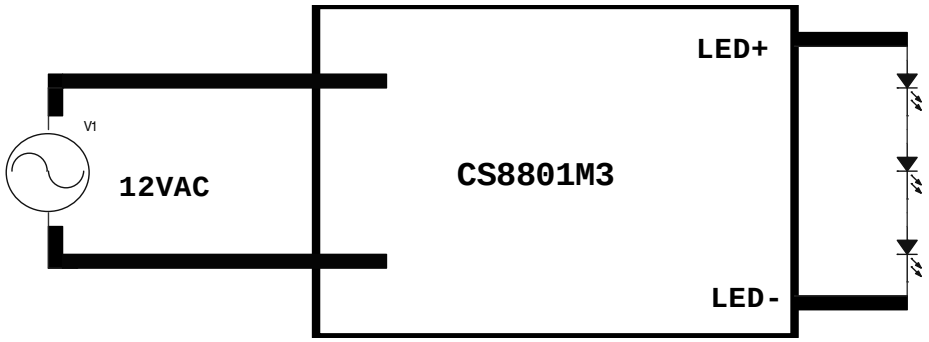


Figure 2 : Input :12Vac, Output :10V/350mA, 3Watt

(White LED * 3)

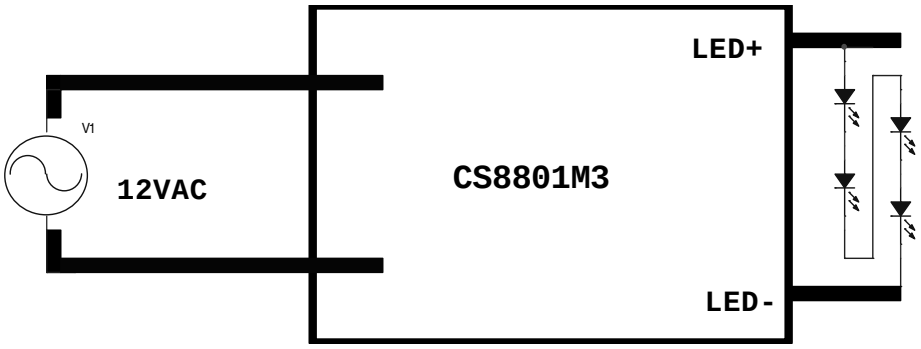


Figure 3 : Input :12Vac, Output :8.8V/350mA, 3Watt

(Red LED *4)

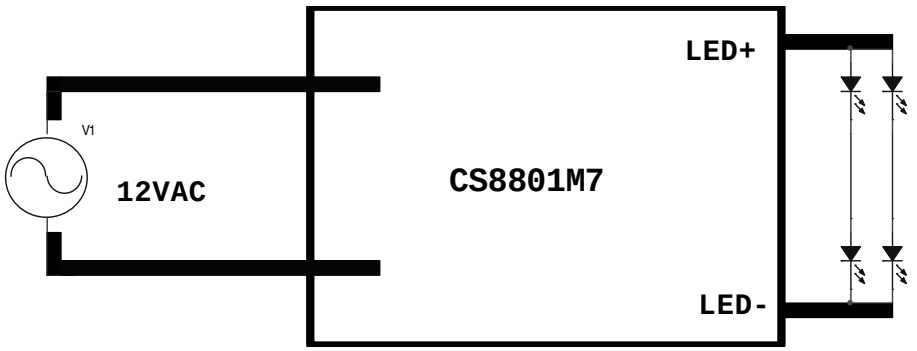


Figure 4 : Input :12Vac, Output :6.6V/700mA, 4.6Watt

(White LED * 4)

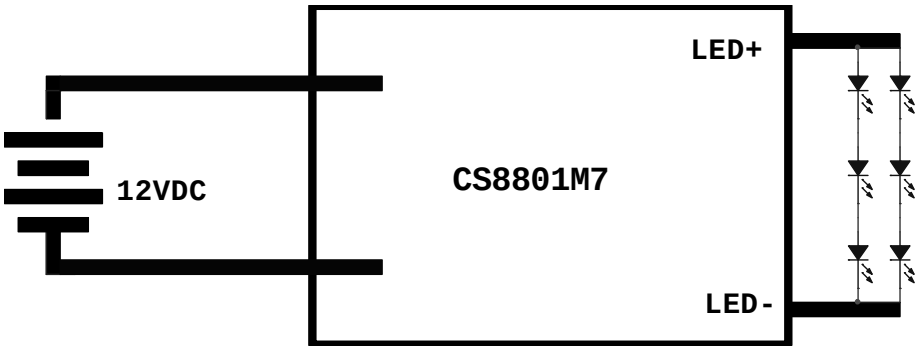
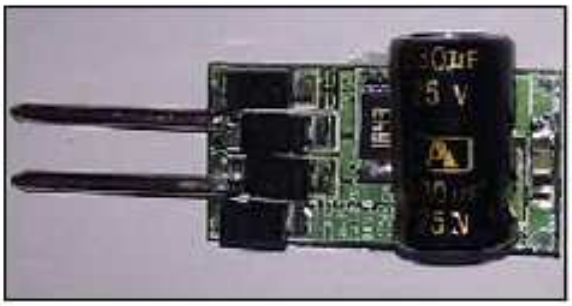


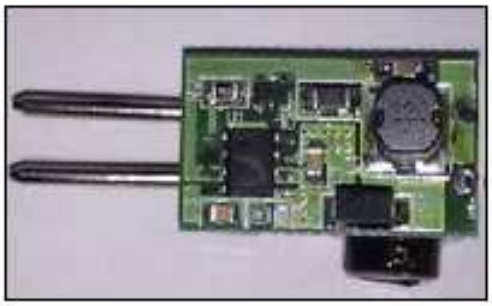
Figure 5 : Input :12Vdc, Output :10V/700mA, 7Watt

(White LED * 6)

Outline CS8801MA serial



(Top view)



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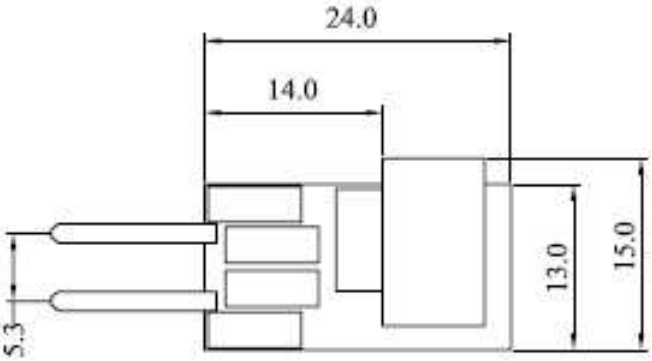
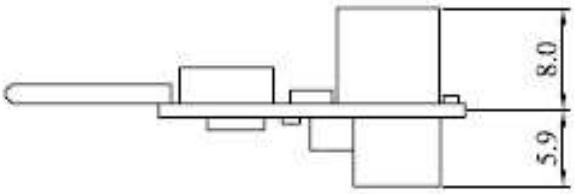
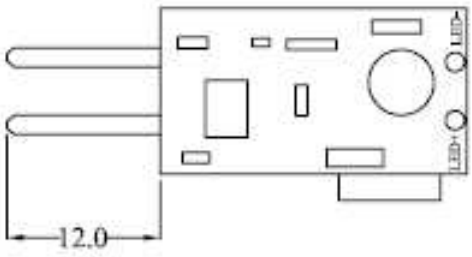


(Top view)



(Side view)

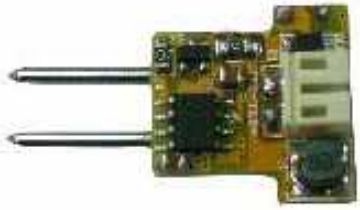


(Back view)

(Unit:mm)

Outline CS8801MB serial

(Top view)



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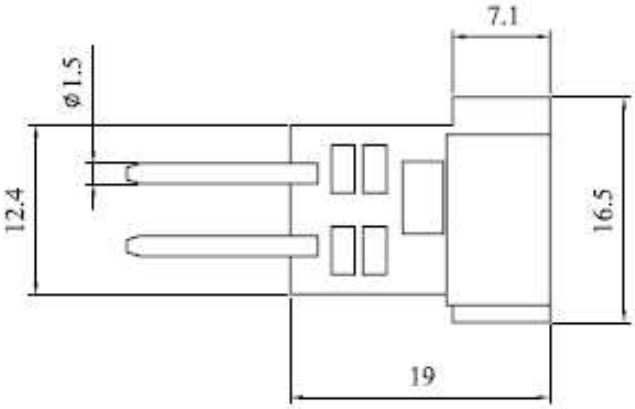
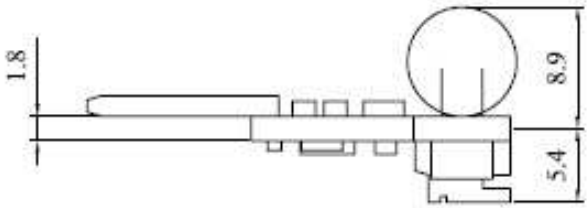
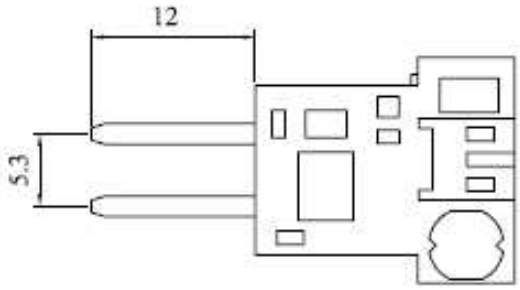


(Top view)



(Side view)



(Back view)

(Unit:mm)