MORNSUN

KC24AH Series

PWM DIM CONSTANT CURRENT OUTPUT LED DRIVER



multi-country patent protection **RoHS**

FEATURES

- High efficiency up to 95%
- Constant current output
- Power LED driver
- Wide input voltage range
- PWM dimming
- Remote ON/OFF
- Short circuit protection

PRODUCT PROGRAM

Part Number	Input Voltage(V)		Output		Dimming control	Efficiency (%,max)
	Normal	Range	Voltage (VDC)	Current (mA)		
KC24AH-300	24	5.5-36	2-32	0-300	PWM	95
KC24AH-350	24	5.5-36	2-32	0-350	PWM	95
KC24AH-500	24	5.5-36	2-32	0-500	PWM	95
KC24AH-600	24	5.5-36	2-32	0-600	PWM	95
KC24AH-700	24	5.5-36	2-32	0-700	PWM	95

APPLICATIONS

The KC24AH Series is a step-down constant current source designed for driving high power LEDs. The output currents available are 300mA, 350mA, 500mA, 600mA, 700mA. The KC24AH series is fully featured with very high efficiency, wide input voltage range, high ambient operating temperature,PWM dimming and Remote ON/OFF.

MODEL SELECTION

KC24AH-350

- Output Current
- Package Style
- Input Voltage
- Product Series

SPECIFICATIONS

Item	Test condition	Min.	Typ.	Max.	Units
Input Voltage	absolute maximum			40	VDC
Recommended input voltage		5.5	24	36	
Input filter		Capacitor			
Output voltage range	Vin=36V	2		32	VDC
Output current range	See the selection guide ,while Vin-Vout>1.5-4V				
Output current accuracy	Vin=24V, 5 LEDS		± 5	±8	%
Output current stability	Vin=24V, 1LED to 5 LEDS		±5	±10	
Temperature coefficient	-40 °C to+71 °C ambient			± 0.03	%/°C
Efficiency at full load				95	%
Short circuit protection		Continuous			
Operating temperature range	300mA / 350mA	-40		85	°C
	500mA/ 600mA/ 700mA	-40		71	
Storage temperature range		-55		125	
Maximum case temperature				100	
Maximum capacitive Load		470			µF
MTBF	MIL-HDBK-217F(+25°C)	2,000,000			Hours
Case Material		Plastic (UL94-V0)			
Dimensions		22.8*10.2*9.5			mm
Weight		3.5			g
PWM Dimming and ON/OFF Control (let it open if not use)					
Remote ON/OFF	ON	Open or 2.8V<Vc<6V			
	OFF(shutdown)	Vc<0.6V			
Remote pin current	Vc=5V			1	mA
Quiescent input current in Shutdown mode	Vin=24V, V_c <0.6V			400	µA
PWM frequency			0.2	10	KHz

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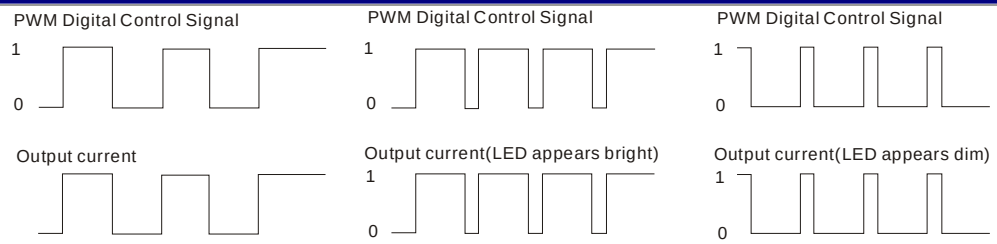
DIGITAL DIMMING CONTROL



This is a PWM type digital dimming, which you can control the output current by adjusting the pulse width of the PWM signal.

Io_set=Io_norm×D

Io_set refres to the wanted output current value.

Io_norm refers to the rated output current

D refers to the pulse width of the PWM signal

For example: we assume the rated output current is 300mA and wanted output current is 150mA, then the pulse width should be 0.5 from the equation above. That is say if we keep the pulse width of PWM signal at 0.5, the output current will be kept at 150mA. It is natural for the driver to generate a audibly noise in dimming process, because the frequency of the control circuit is within human audibly range (20Hz~20KHz).

TYPICAL APPLICATION CIRCUITS

PWM Dimming control circuit

Figure 1

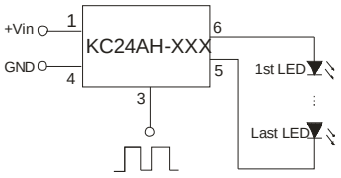
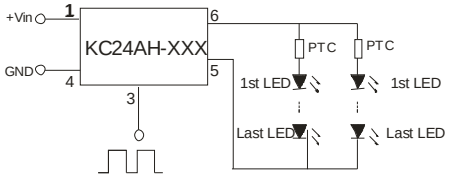
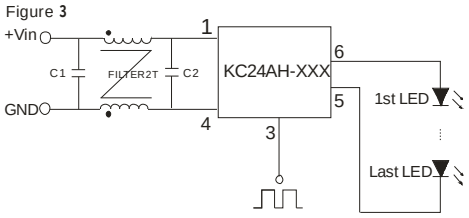


Figure 2



EMI filter circuit

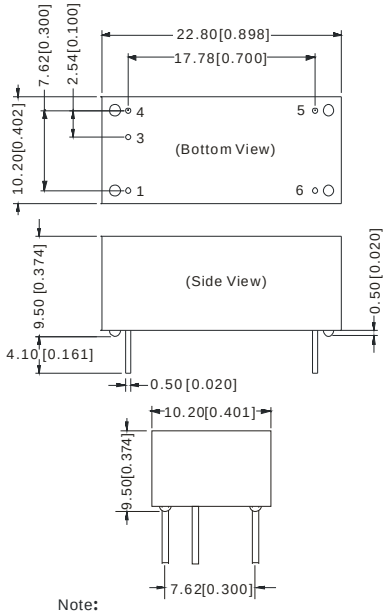
Figure 3



In actual use, if necessary to protect LED, a PTC of positive temperature coefficient may be connect to the input end of every channel or all channels, as shown in Figure 2.

OUTLINE DIMENSIONS & PIN CONNECTIONS

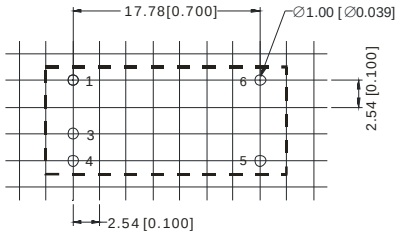
MECHANICAL DIMENSIONS



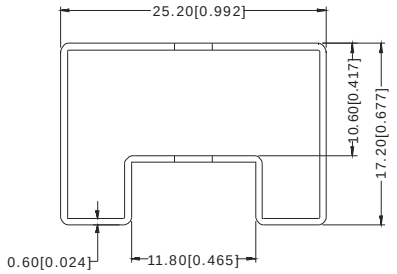
Note:
Unit:mm[inch]
Pin section tolerances:±0.1mm[± 0.039inch]
General tolerances:±0.25mm[± 0.010inch]

FOOTPRINT DETAILS		
Pin	Function	Comments
1	Vin	DC Supply
3	ON/OFF/PWM	Leave open if not use
4	GND	Do not connect to -Vout
5	-Vout	LED Cathode connection
6	+Vout	LED Anode connection

RECOMMENDED FOOTPRINT



TUBE OUTLINE DIMENSIONS



Note:
Unit:mm[inch]
General tolerances:±0.5mm[± 0.020inch]

L=530mm[20.866inch] Tube Quantity: 50pcs
L=220mm[8.661inch] Tube Quantity: 20pcs

Note:

1. All specifications measured at Ta=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
2. In this datasheet, all the test methods of indications are based on corporate standards.

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