

# USER MANUAL

# Micro

*2.8/1.5A Buck*

[www.ledtreiber.de](http://www.ledtreiber.de)



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Thank you for purchasing this product. The Micro KSQ series consists of two different versions: one for the 1.5 amp version which is based on LEDs at higher currents than the typical 1A such as the Cree XPG 2 and the other the 2.8 ampere version which is a counterpart to our Black Power Series and operates multi-chip LEDs as the Seoul P7 or Cree-ME. The Micro series is based on the latest technologies such as low RDS on MOSFET and 100% ceramic capacitors is highly efficient thanks to the switching regulator according to principle, and developed little heat. The components used are top quality and thus enable a long and trouble-free operation. We hope that they give you much joy and accompanies long.

#### Features:

- ✓ High power switch mode constant current source / Step Down (Buck) - No longitudinal controller!
- ✓ Constant output current 1500mA or 2800mA depending on version
- ✓ Output current 3000mA by adding single 10hm resistor
- ✓ Voltage drop about 1 volt
- ✓ Efficiency depending on input voltage and number of LEDs up to 94%
- ✓ Quality components, generously sized 100% SMD ceramic chip capacitors
- ✓ Qualitative two-sided board, thermal management design optimized, 70µm copper layer
- ✓ For lighting projects of any kind, such as Lights, lamps, flashlights, dive lights, automotive, advertising signs, lighting technology and many more
- ✓ Other currents by changing the measuring resistor is possible
- ✓ Extremely compact dimensions of 23mm (round) x 7.6mm height (highest point)
- ✓ External PWM input for dimming
- ✓ Dimming and controllable with our µ-Dim, Led Stripe or Nano Dim



#### Specifications 1.5A version

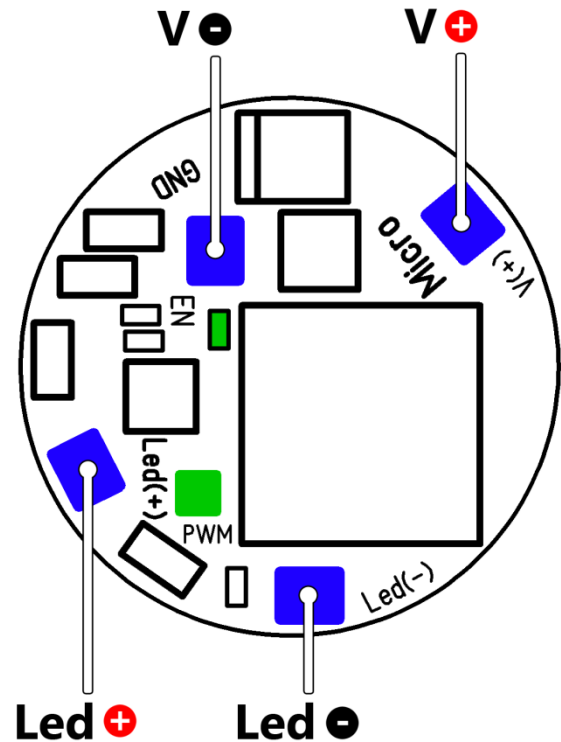
- ✓ Output current constant 1500mA (+/- 3%)
- ✓ Input voltage range of 5-28 V / DC
- ✓ Up to 8 Leds a' 1.5A

#### Specifications 2.8A version:

- ✓ Output current constant 2800mA (+/- 3%)
- ✓ Input voltage range of 5-28 V / DC
- ✓ Up to 5 Leds a' 2.8A

In principle, the following procedure is recommended:

- Connect the LEDs, multiple LED's are connected in series or parallel \*
- If needed connect external dimmer to the PWM pad  
**Open the solderbridge „EN“ is very important!**
- Maybe you need to cool the driver, attach him if necessarily with an electrically insulating material such as Thermal pad on a metal surface / heat sink.
- Connect powersupply. **Look on right polarity!** Please understand that we can do not accept complaints due to incorrect polarity!
- Turn on powersupply

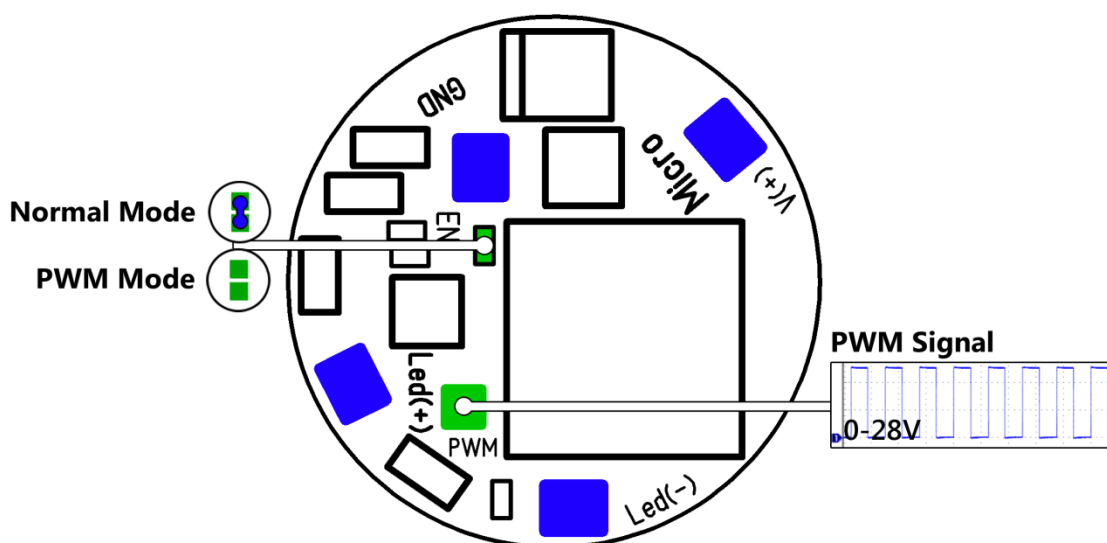


2.8A Version : Make input and output side on sufficiently thick cable. The current can be up to 2.8A! If too thin cables are used the input current increase and the driver generates unnecessary heat!

#### PWM input:

To use the PWM input, it is **important** to open/remove the 0-Ohm resistor (EN) with a soldering iron. It can later be closed with solder if no dimmer is used.

The PWM input can be fed with our  $\mu$ -Dim, LedStripe, NanoDim dimmer or a separate signal and thus regulate the brightness of the Micro. Please check the guide in one manual of the above dimmer.



**External power-on and shutdown input:** When input supply (+) applied to the PWM, turns on the driver. Thus, for example with a switch off and on. It is necessarily to open the bridge (EN) before!

**Technical Data PWM input:**

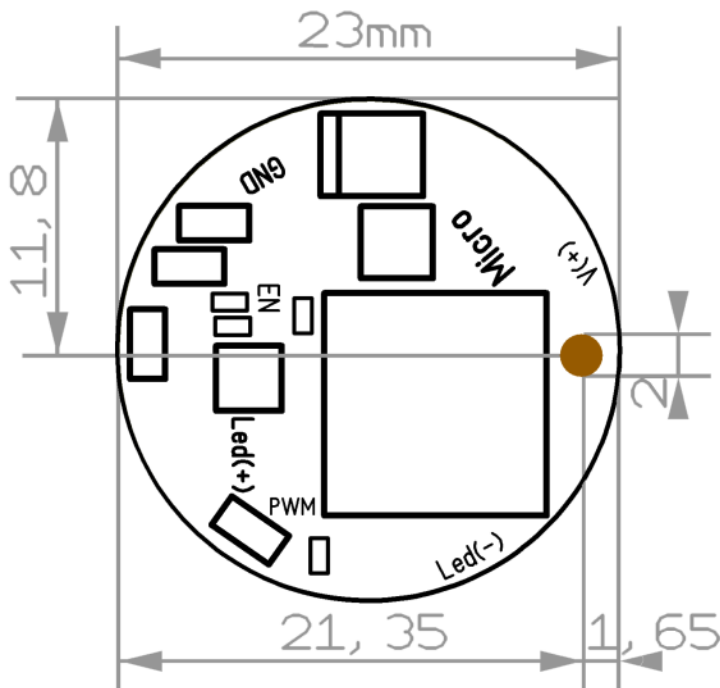
Max. input voltage: 28V

Logic level high : min.2.8V

Logic level low : max.0.6V

Recommended PWM frequency : 150Hz-2000Hz

**Technical Data dimensions (mm):**



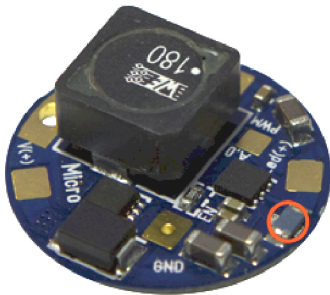
With an input voltage of for example about 8 volts 2 piece white Seoul P7 (2x2800mA) or 2 pieces of white Cree XR-E (2x1500mA) can be operated. More with higher input voltages or other Led colors.

\* For parallel-connected LEDs the voltage spread corresponding to the number of strands. You have for example the Micro 2800 and two LEDs connected in parallel, although the voltage distributed 50/50%, but by the fluctuations of a typical diode, the LED current is distributed in such two parallel lines is not exactly 50/50%. If in a parallel connection one strand lose, the current is distributed to the remaining (n) Led strands.

The output current can be changed by changing the measurement resistor or adding extra resistor to the existing (circled in red).

Use the calculator to determine the required resistance value:

[http://pcb-components.de/index.php?option=com\\_content&view=article&id=61&Itemid=81](http://pcb-components.de/index.php?option=com_content&view=article&id=61&Itemid=81)



#### **Increase the output current to 3A (Micro 2800 version):**

In order to increase the current e.g. for the Cree XM-L to 3 amps, solder a second resistor (1 ohm) in parallel to the existing.

The resistor should be either "1206" SMD size or if necessary, "0805" or "1210". You get the needed resistor on request free of charge to your order from us.