Variable version

Driver

- self made LED fixtures
- easy to use
- low cost
- dimming options
- battery supply
- CV supply

Futuro Lighting *design*

2014

LED Driver 150V

96% efficiency typical

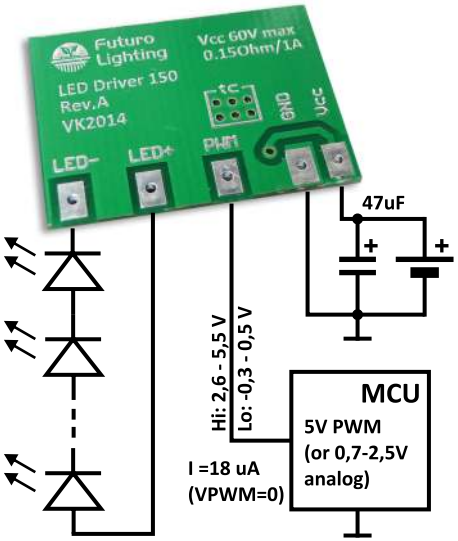
Build your own LED fixture

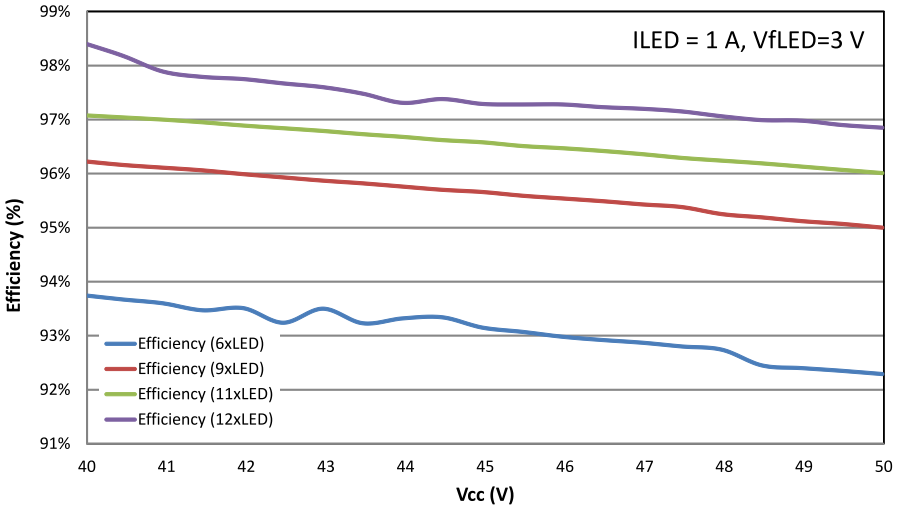
Specification:
Topology: Buck
Vcc = 4,5-60 V DC
I LED = Adjustable
see next page for settings

Regulation / dimming:
- typical 3% output accuracy
- soft start capability (just adding cap to PWM in)
- high speed PWM 20kHz max
- analog 0,7 - 2,5 V

Switching freq: 1 MHz max
Rsense ratio: 0,15 Ohm / 1 A

Dimensions: 25 x 18 x 7 mm
Over temperature protection
Over current protection





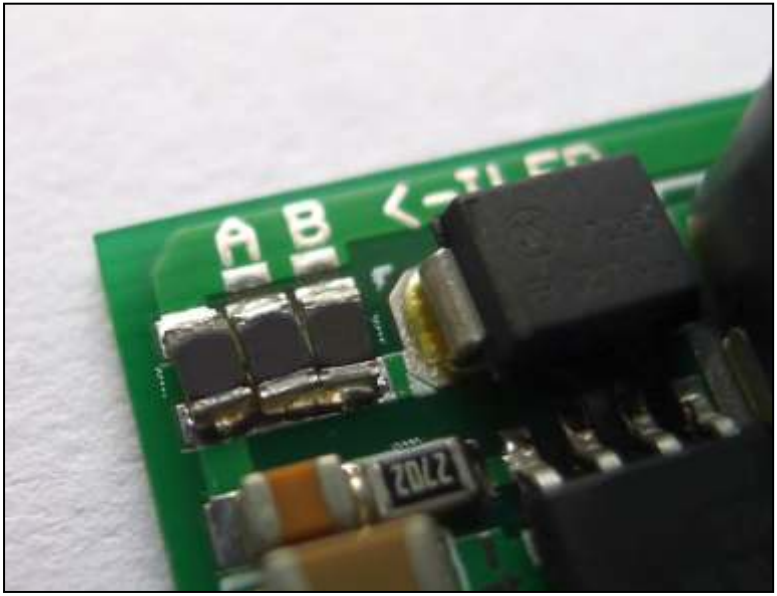
Note: if PWM is not connected max ILED generated
Options: encapsulation, reverse protection, thermal foldback, MCPCB support

Futuro Lighting design

Rev.0.2

LED Driver 150V

LED current setting



ILED	A	B
0,32 A	-	-
0,6 A	X	-
0,8 A	-	X
1 A	X	X

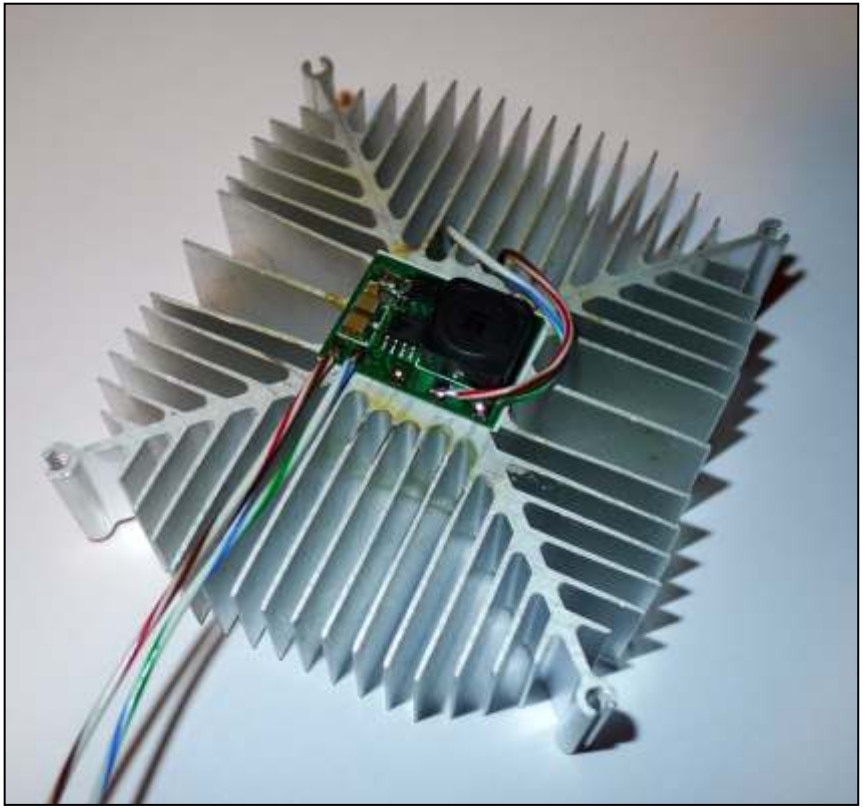
X - linked by soldering iron

Note: Vin is limited to 55 V max for 0,32 A mode

Futuro Lighting design

LED Driver 150V

Thermal foldback

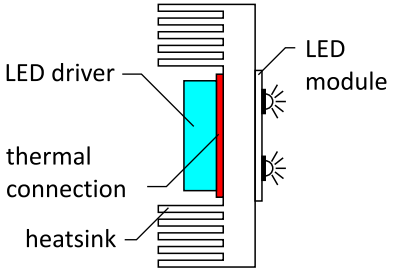


Application Example

Connecting back side of LED driver to fixture heatsink will protect LED fixture against overheating thus extending LED life time and provide safe fixture operation.

Thermal foldback is temperature of the module is set to ~80°C

thermal connection can be done by appropriate thermo conductive both side tape or glue

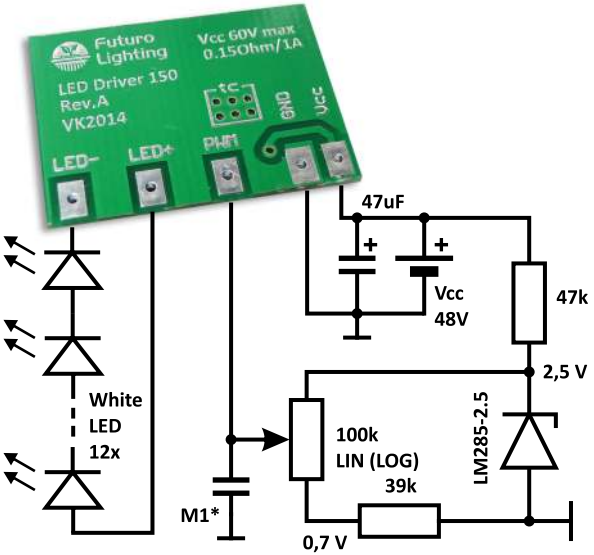


Futuro Lighting design

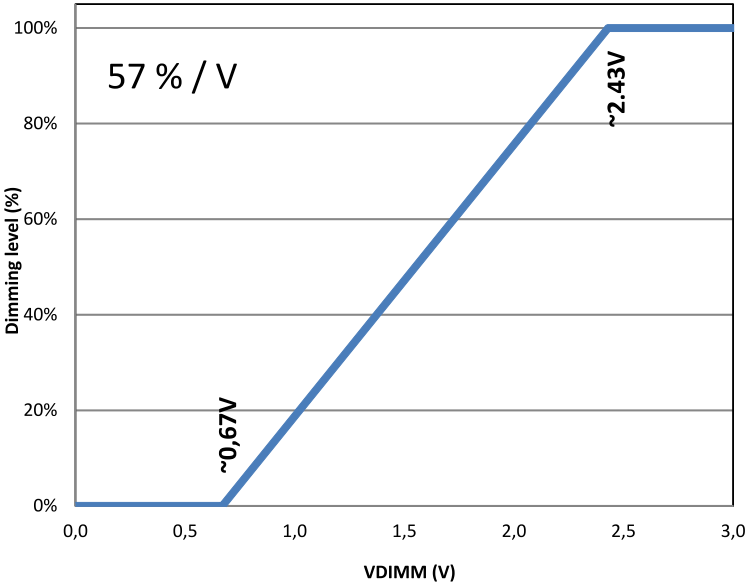
LED Driver 150

Analog Dimming example (local)

Appropriate for local dimming (Potentiomter close to Driver)



* soft start capacitor



Potentiometer selection:
LIN - linear for linear dimming change
LOG - logarithmic change, more appropriate for human eye response

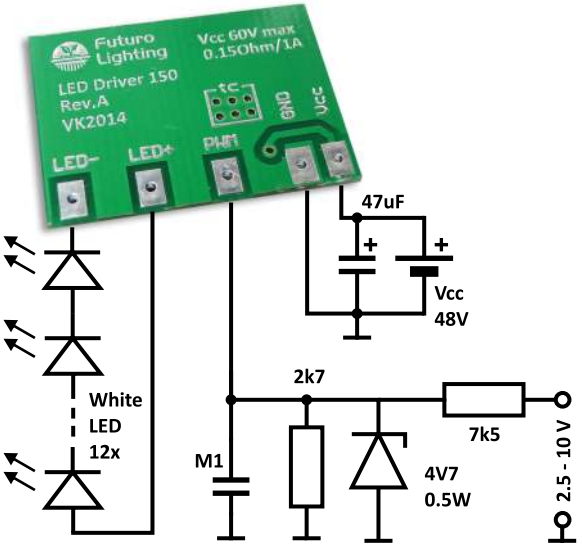
Literature:
http://www.ti.com/lit/ds/symlink/lm385b-2.5.pdf

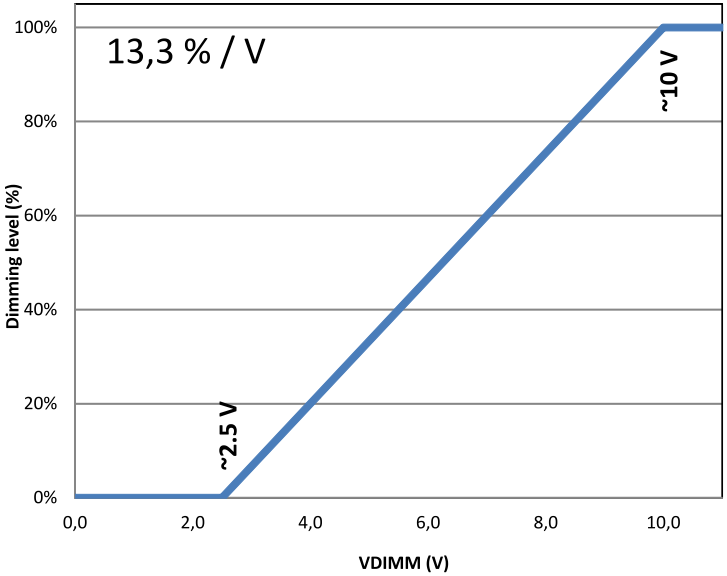
Futuro Lighting design

LED Driver 150

Analog Dimming example (remote)

Appropriate for remote dimming (1-10V dimmer)





M1 soft start capacitor

Signal selection:
LIN - linear for linear dimming change
LOG - logarithmic change, more appropriate for human eye response

Futuro Lighting design

3-CH Digital dimmer for LED Driver 150

Ready made solution for your lighting needs

Specification:

Supply voltage 30-60 V DC
Power consumption: 1,2 W max
Model: Custom for LED Driver 150
Output voltage 0,55 - 2,55 VDC
Outut current: 20 mA / channel max
Number of dimm steps: 250
Illumination: Front - Side Blue LED
End of range indication: blink (Blue)
Power-up fade-in duration: 30 sec
Setting memory type: EEPROM
Dimensions: 85 x 85 x 30 mm

Note: Implemented non isolated buck driver
may generate audiable noise, this is regular behaving

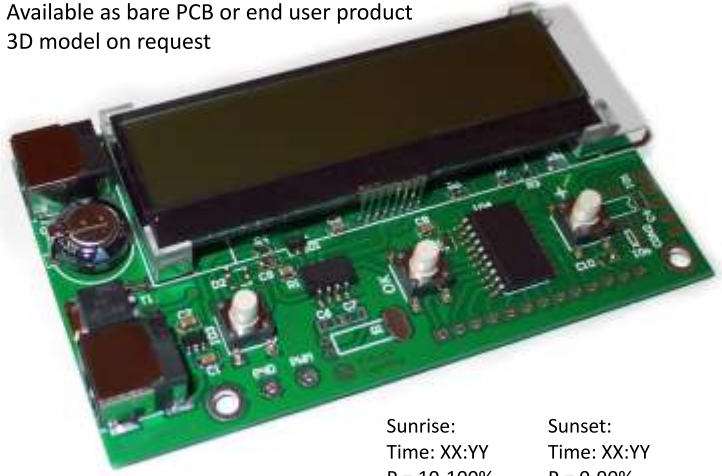
Futuro Lighting design

AquaTimer & LED Driver 150

Artificial sun for Aquarium life

Application example

Available as bare PCB or end user product
3D model on request



Specification:
Supply Voltage: 6-25 VDC
Supply current: <15 mA
Power consumption: 0,65 W max
Clock source: RTC 24h
Settings for sunset and sunrise:
Start time XX:YY
Intensity 0-100%
Dimm time: 5-99 minutes

Others:
- Reverse protection
- >3 days clock backup

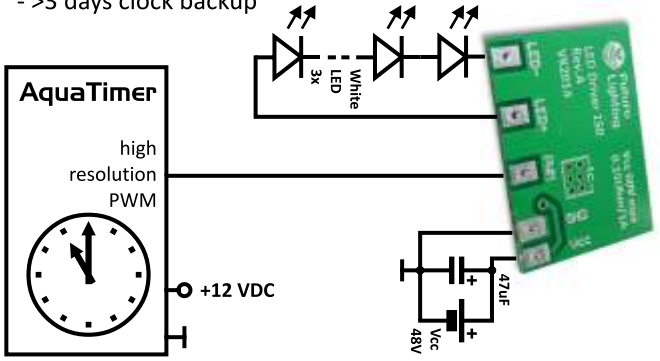
PWM frequency: 2000 Hz
Resolution: 1000 steps
Output: 5V / 10mA
Output: CV, 4A max

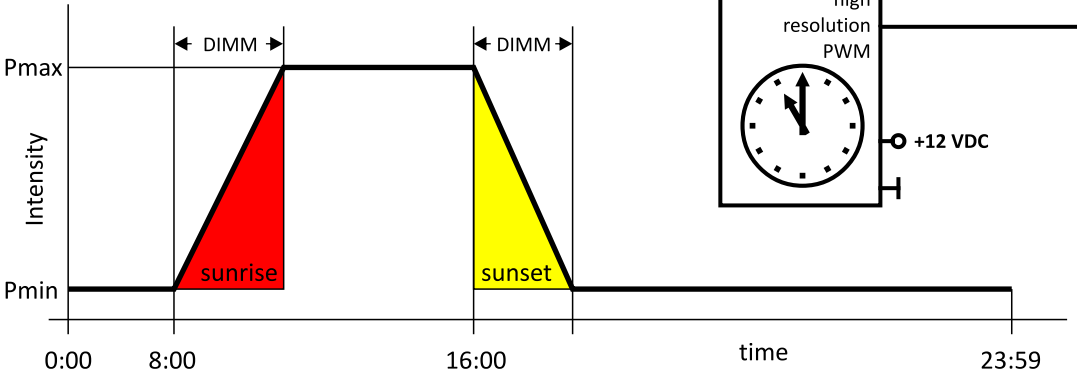
Display: 2x16 lines
Actual time, status, intensity, Menu
Illuminated (white)

Dimensions: 87x50x10 mm

Sunrise:
Time: XX:YY
P = 10-100%
Dimm = 5-99

Sunset:
Time: XX:YY
P = 0-90%
Dimm = 5-99





Futuro Lighting design

TouchDIMM & LED Driver 150

Just single push to adjust

Application example

Available as bare PCB
3D model on request

Specification:
Supply Voltage: 6-25 VDC
Supply current: <5 mA
Output: PWM / CV 4A max

Dimm steps: 100
Dimming characteristic: Log

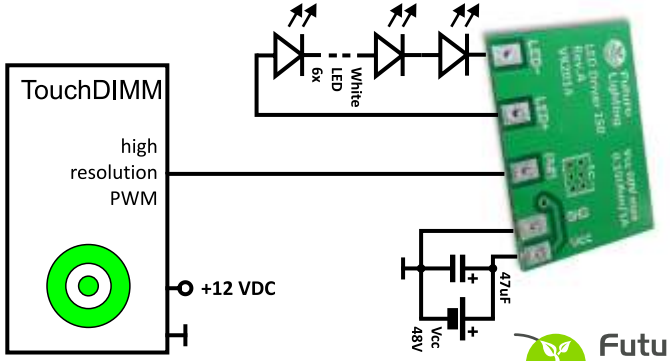
PWM frequency: 2000 Hz
Resolution: 1000 steps
Output: 5V / 10mA

Dimensions:
50x13x10 mm
50x13x3.5 mm (wo DC con)

Others:
- Reverse protection
- implemented soft fade in and fade out
- illumination of touch button
- built in N-MOS for CV LED strips

Controll:
ON / OFF - short touch (<2sec)

Intensity increase
Touch and hold till reaching required intensity (initial status OFF)

Intensity decrease
Touch and hold till reaching required intensity (initial status ON)

Indicator status
Inactive when off or during fade in and out