

PHI-CON

## P8LD030-24 Step Down Driver for 300mA Power-LED

- Constant Current Output
- Dimmer function via analogue Control
- Dimmer function via PWM Control
- Remote control function
- 14 Pin DIL Package
- Efficiency up to 95 %
- MTBF > 5 MHours



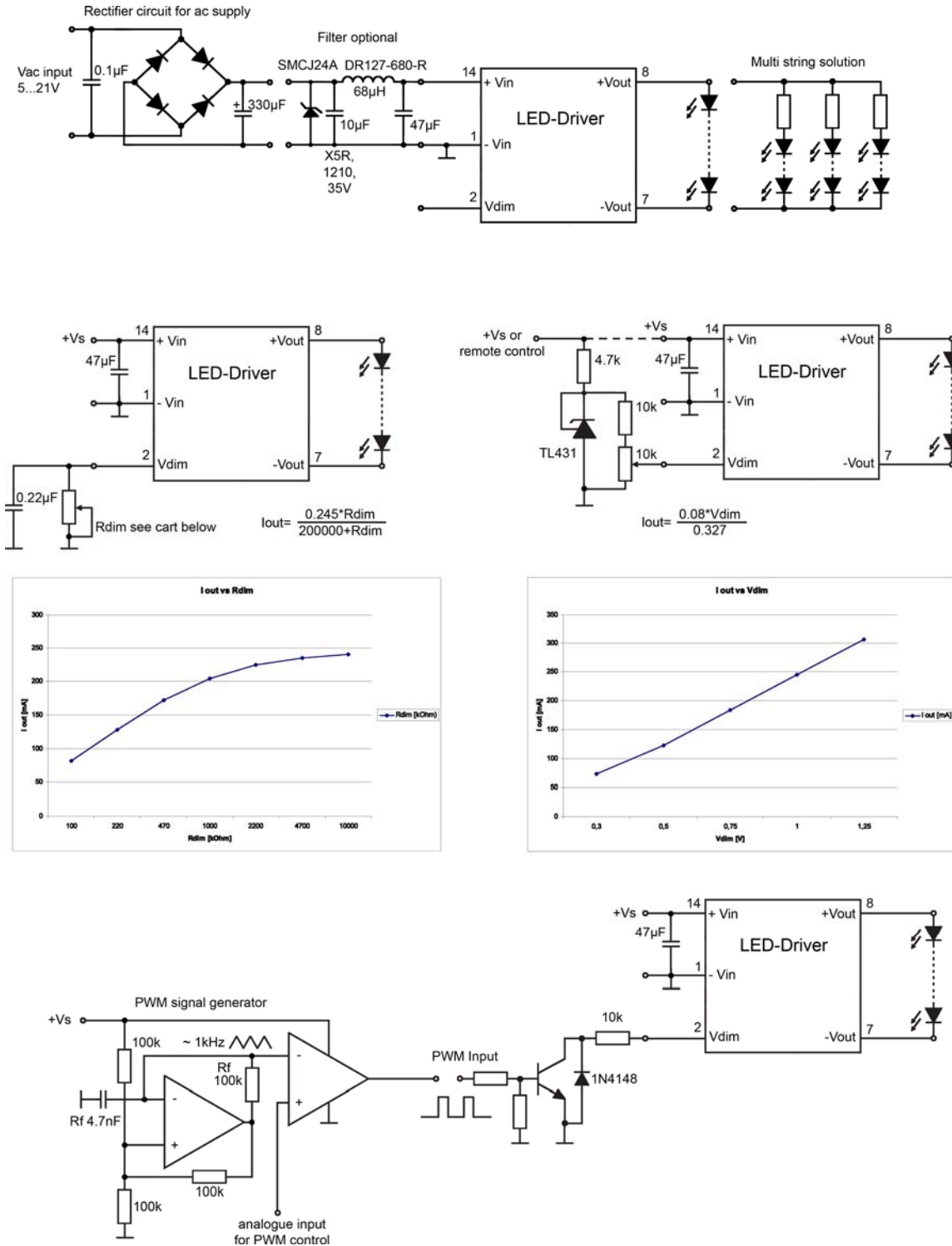
P8LD030-24 is a high efficiency step-down converter optimized to drive high current LEDs. The control algorithm allows highly efficient and precise LED current regulation. This driver operates in an dc supply voltage range between 7 V and 30 V and provides an externally adjustable output current of up to 300 mA and output power up to 8 watts. A compact size allows designer to integrate this driver together with LED module.

### Specification at 25 °C, Vin nominal and rated output current

<b>Input</b>	
Input voltage range	7...30 V
Input filter	Capacitor
<b>Output</b>	
Output voltage range at Vin 30 V	2...28 V
Output current range at Vin - Vout > 1.5 V to 3 V	300 mA
Output power	8 W, max.
Typical output current accuracy, at Iout 300 mA	±6 %
Output ripple and noise, bandwidth 20 MHz	200 mVp-p, max.
Temperature coefficient at Ta -40 to +85 °C	±0.03 % / °C, max.
Capacitive load	47 µF, max.
Operating frequency range	45 kHz...380 kHz
Efficiency, maximum at full load	95 %
Short circuit protection	Regulated at rated output current
<b>PWM dimming &amp; remote control</b>	
Vdim input, remote ON level	Open or 0.3 V ... 1.25 V
Vdim input, remote OFF level (shutdown)	0.15 V max.
Vdim input, drive current (Vdim 1.25V)	1 mA, max.
Quiescent supply current in shutdown mode at Vin 30V	25 µA, max.
Recommended maximum operation frequency	1 kHz
Minimum switch 'ON' time	200 ns
Minimum switch 'OFF' time	200 ns
<b>Analog dimming control</b>	
Vdim input control voltage range for 25 ... 100 % output current range	0.3 V ... 1.25 V
Vdim input control voltage range ON	0.2 V ... 0.3 V
Vdim input control voltage range OFF	0.15 V ... 0.25 V
Vdim input, drive current (Vdim 1.25V)	1 mA, max.
<b>Physical conditions</b>	
Operating ambient temperature range	-40 to +85 °C
Storage temperature range	-40 to +125 °C
Operating Package temperature	100 °C, max.
Thermal impedance, nature convection	35 K/W
Humidity	95 % rel H
Reliability calculated MTBF (MIL-HDBK-217 F)	5 Mhrs
Case material	Non-conductive black plastic (UL94-V0)
Potting material	Epoxy (UL94-V0)
Pin material	0.5 mm brass solder-coated
Weight	2.6 g
Dimensions	20.3 x 10.2 x 6.9 mm
Soldering temperature 1.5 mm distance from body	260 °C for 10 sec
<b>EMC Specifications</b>	
EMI radiated and conducted emissions EN55015 (CISPR22)	
EMS Immunity EN61547	
IEC 61000-4-2	Perf. Criteria A
IEC 61000-4-3	Perf. Criteria A
IEC 61000-4-4	Perf. Criteria A
IEC 61000-4-6	Perf. Criteria A
IEC 61000-4-8	Perf. Criteria A

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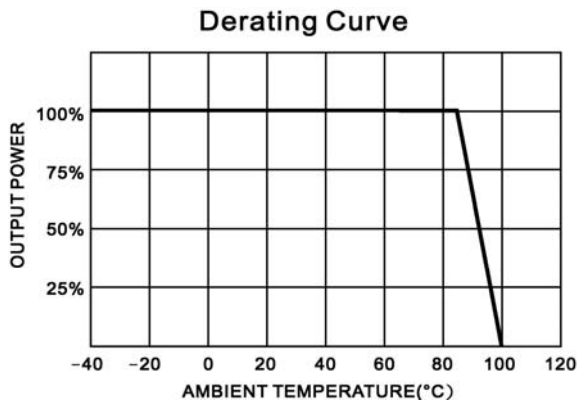
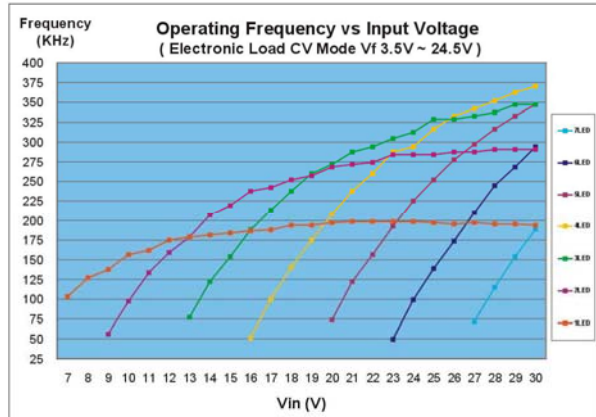
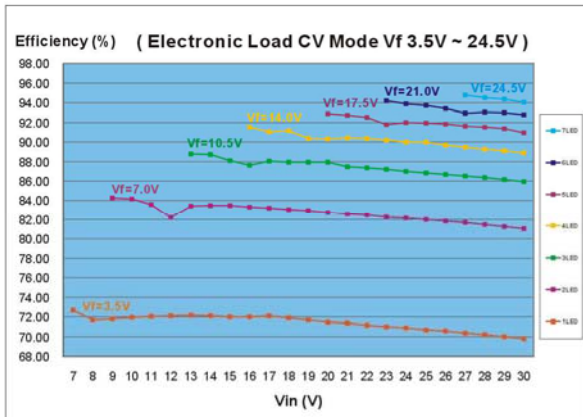
## Typical application circuits



### Notes:

1. Do not use the driver over 8 W output power!
2. Do not connect a reversed power source!
3. Do not connect the input side with output side!

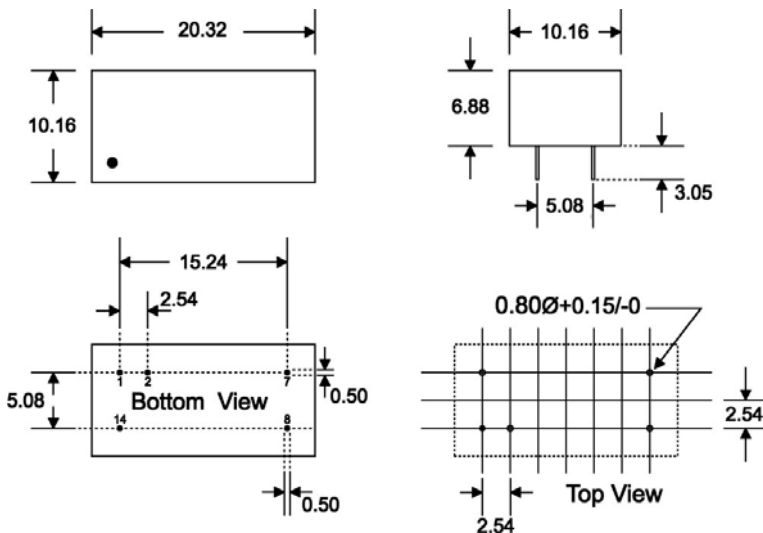
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### Pin connections

Pin	Function
1	- V supply
2	Vdim
7	- V output
8	+ V output
14	- V supply

### Dimensions



Notes : All dimensions are typical in millimeters.  
 1. Pin diameter: 0.5±0.05  
 2. Pin pitch tolerance: ±0.35  
 3. Case Tolerance: ±0.5

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