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

PHI-CON

- 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

| | |
|---|---|
| **Input** | |
| Input voltage range | 7…30 V |
| Input filter | Capacitor |
| **Output** | |
| 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 |
| **PWM dimming & remote control** | |
| 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 |
| **Analog dimming control** | |
| 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. |
| **Physical conditions** | |
| 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 |
| **EMC Specifications** | |
| 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 |



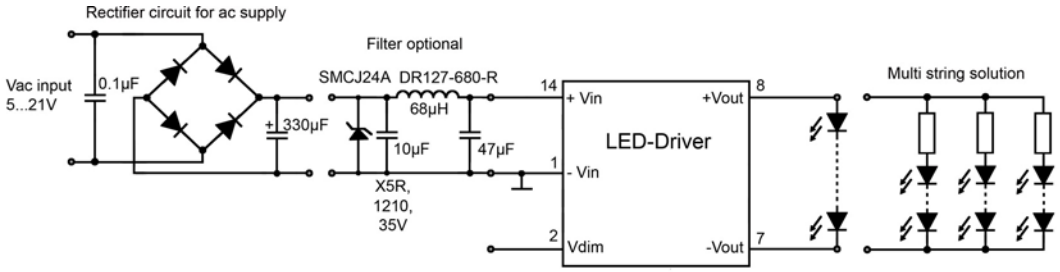
HY-LINE® POWER COMPONENTS

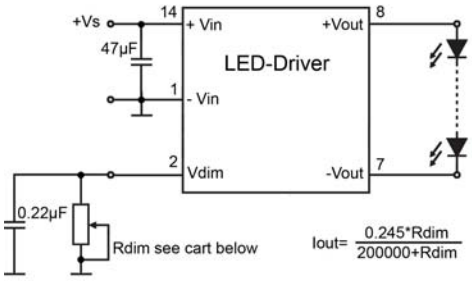
Deutschland:
Inselkammerstraße 10
D-82008 Unterhaching
Tel.: 089 614 503-10
E-Mail: power@hy-line.de

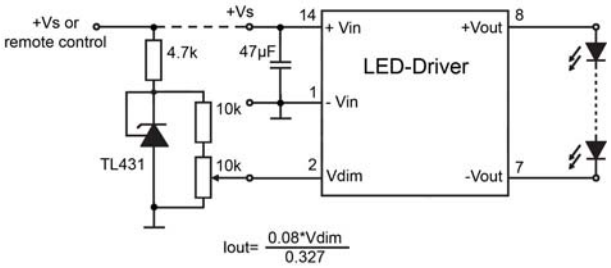
Schweiz:
Gründenstrasse 82
CH-8247 Flurlingen
Tel.: 052 647 42 00
E-Mail: power@hy-line.ch

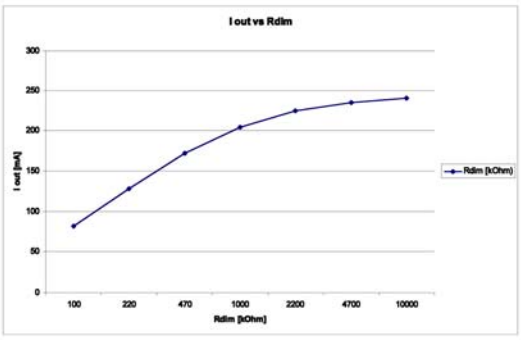
# *P8LD030-24 Step Down Driver for 300mA Power-LED*

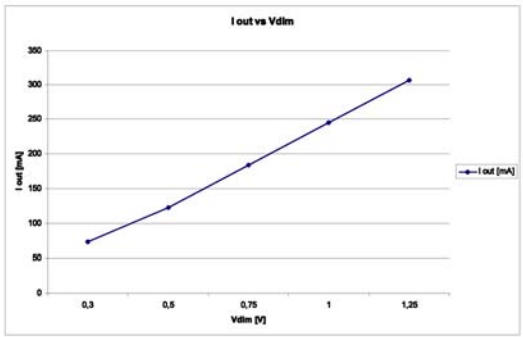
Typical application circuits

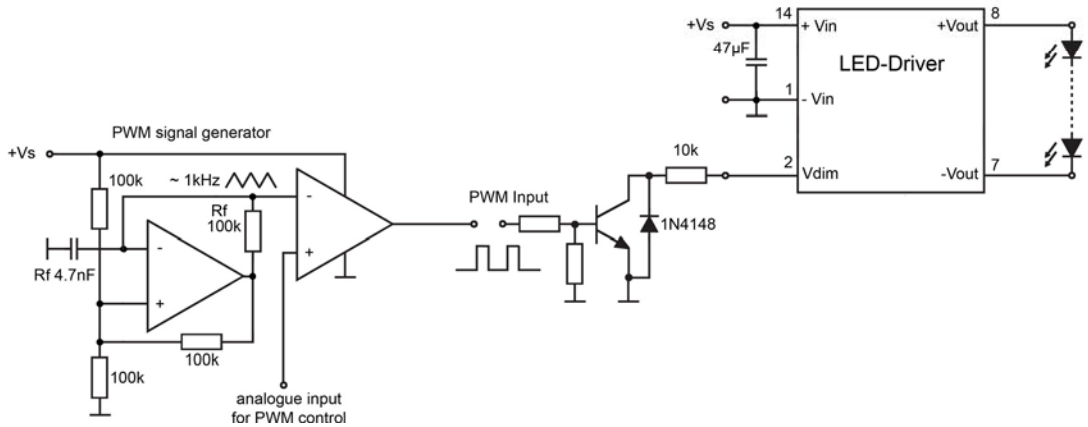


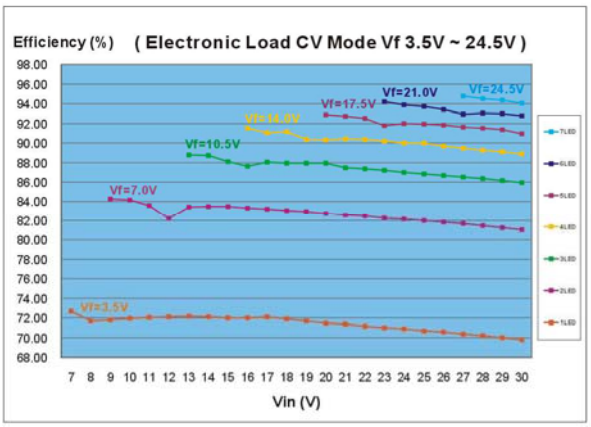

Notes:
1. Do not use the driver over 8 W output power!
2. Do not connect a reversed power source!
3. Do not connect the input side with output side!

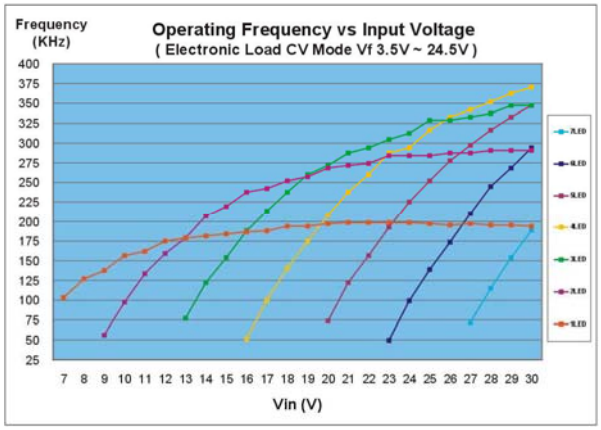


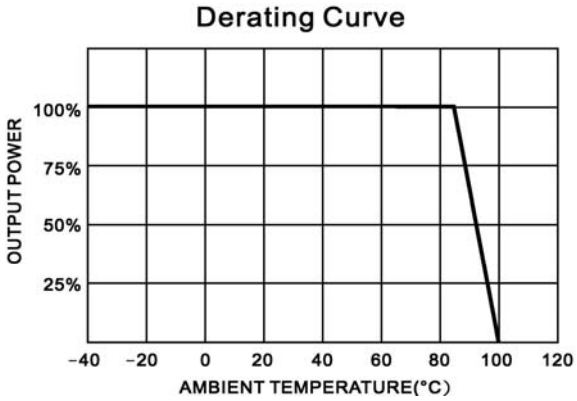
HY-LINE® POWER COMPONENTS

Deutschland:
Inselkammerstraße 10
D-82008 Unterhaching
Tel.: 089 614 503-10
E-Mail: power@hy-line.de

Schweiz:
Gründenstrasse 82
CH-8247 Flurlingen
Tel.: 052 647 42 00
E-Mail: power@hy-line.ch



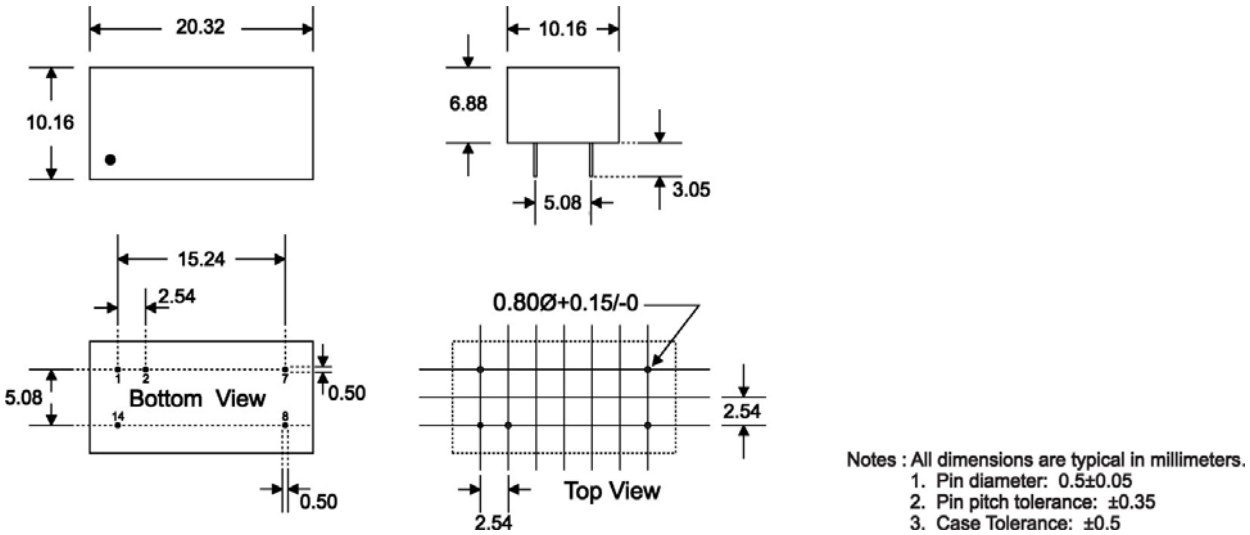




## Pin connections

| Pin | |
|---|---|
| 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

*Life Support Policy*: HY-LINE does not authorize the use of any of its products for use in life support devices or systems without the express written approval of an officer of the Company. Life support systems are devices which support or sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user. Rev: 9.12 f



HY-LINE® POWER COMPONENTS

Deutschland:
Inselkammerstraße 10
D-82008 Unterhaching
Tel.: 089 614 503-10
E-Mail: power@hy-line.de

Schweiz:
Gründenstrasse 82
CH-8247 Flurlingen
Tel.: 052 647 42 00
E-Mail: power@hy-line.ch