

TPTC004



Features

- DC/DC step-down converter
- Constant current output: 350mA to 1400mA
- Wide input voltage: 10 ~ 56VDC(59VDC Max.)
- Wide output LED forward voltage: 6 ~ 52VDC
- High efficiency up to 96%
- Comply with EN61347 and EN55015 regulation
- Built-in PWM and remote ON/OFF control
- Protections: Short circuit / Over temperature
- Cooling by free air convection
- Fully encapsulated and compact site
- Suitable for driving illumination LED
- 3 years warranty

Applications

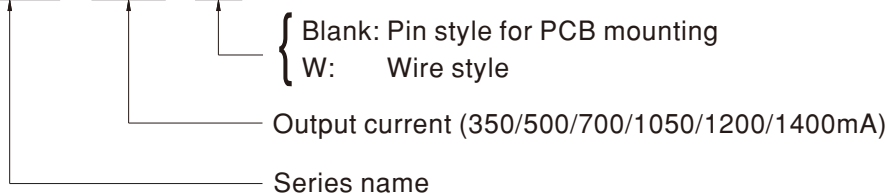
- DC battery source lighting
- Portable lighting
- Commercial lighting
- DC 48V Track lighting
- DC 24V landscape lighting
- For \diamond class III application(SELV)

Description

NLDD-H series is a 60W DC/DC LED drive featuring constant current output. NLDD-H operates from 10~56VDC and offers models with different rated current ranging between 350mA and 1400mA. With the high efficiency up to 96%, The 94V-0 flame retardant plastic case the fully-potted silicone to enhance the heat dissipation allows this series to fit for classIII or DC bus lighting application.

Model Encoding

NLDD - 350 H W





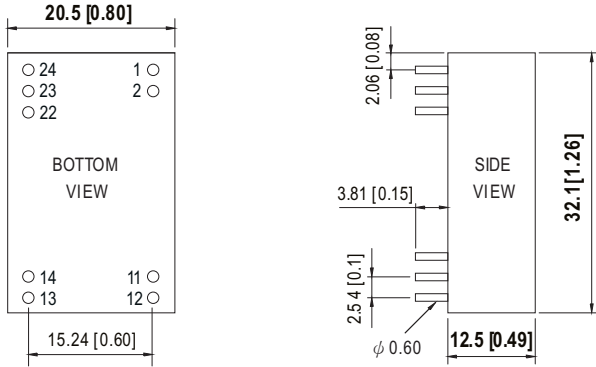
SPECIFICATION

| ORDER NO. | | NLDD-350H <input type="checkbox"/> | NLDD-500H <input type="checkbox"/> | NLDD-700H <input type="checkbox"/> | NLDD-1050H <input type="checkbox"/> | NLDD-1200H <input type="checkbox"/> | NLDD-1400H <input type="checkbox"/> | |
|--|---|--|------------------------------------|------------------------------------|-------------------------------------|--|-------------------------------------|--------|
| OUTPUT | CURRENT RANGE | 350mA | 500mA | 700mA | 1050mA | 1200mA | 1400mA | |
| | VOLTAGE RANGE <small>Note.4</small> | 6 ~ 52VDC | | | | 6 ~ 46VDC | | |
| | CURRENT ACCURACY (Typ.) | ±5% at 48VDC input | | | | | | |
| | RIPPLE & NOISE(max.) <small>Note.2</small> | 150mVp-p | 150mVp-p | 200mVp-p | 350mVp-p | 350mVp-p | 350mVp-p | |
| | SWITCHING FREQUENCY | 200KHz | | | | | | |
| INPUT | VOLTAGE RANGE | 10 ~ 56VDC (59VDC Max.) | | | | | | |
| | EFFICIENCY (max.) | 96% at full load and 36VDC/48VDC input | | | | 95% at full load and 36VDC/48VDC input | | |
| | DC CURRENT | Full load <small>Note.3</small> | 350mA | 490mA | 700mA | 1100mA | 1200mA | 1360mA |
| No load | | 5mA | | | | | | |
| PWM DIMMING & ON/OFF CONTROL | REMOTE ON/OFF | Leave open if not use | | | | | | |
| | | Power ON with dimming: DIM ~ -Vin >2.5 ~ 5VDC or open circuit | | | | | | |
| | | Power OFF : DIM ~ -Vin < 0.8VDC or short | | | | | | |
| | PWM FREQUENCY | 100 ~ 1KHz | | | | | | |
| QUIESCENT INPUT CURRENT IN SHUTDOWN MODE(max.) | 2mA at PWM dimming OFF at 48VDC input | | | | | | | |
| PROTECTION | SHORT CIRCUIT | Regulated at rated current | | | | | | |
| | | Protection type: Can be continued, recovers automatically after fault condition is removed | | | | | | |
| | OVER TEMPERATURE | Tj 165°C typically(IC1) detect on main control IC | | | | | | |
| | | Protection type : Shut down, recovers automatically after temperature goes down | | | | | | |
| ENVIRONMENT | WORKING TEMP. | -40 ~ + 50°C (Refer to derating curve) | | | | | | |
| | WORKING HUMIDITY | 20% ~ 90% RH non-condensing | | | | | | |
| | STORAGE TEMP., HUMIDITY | -40 ~ +85°C, 10 ~ 95% RH | | | | | | |
| | TEMP. COEFFICIENT | ±0.03% / °C | | | | | | |
| | VIBRATION | 10 ~ 500Hz, 2G 10min./1 cycle, period for 60min. each along X, Y, Z axes | | | | | | |
| | OPERATING CASE TEMP. (max.) | 90°C | | | | | | |
| EMC | SAFETY STANDARDS | IEC61347 and EAC TP TC004 approved | | | | | | |
| | EMC EMISSION | Compliance to EN55015, EN61547 | | | | | | |
| | EMC IMMUNITY | Compliance to EN61000-4-2,3,4,6,8, light industry level, criteria A, EAC TP TC 020 | | | | | | |
| OTHERS | MTBF | 1000Khrs min. MIL-HDBK-217F (25°C) | | | | | | |
| | DIMENSION | 32.1*20.5*12.5mm or 1.26**0.8**0.49" inch (L*W*H) | | | | | | |
| | WEIGHT | NLDD-H:15.6g ; NLDD-HW:18g | | | | | | |
| | POTTING MATERIAL | Epoxy(UL94-V0) | | | | | | |
| NOTE | <p>1.All parameters are specified at normal input(48VDC), rated load, 25°C 70% RH ambient.</p> <p>2.Ripple & noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1µf capacitor.</p> <p>3.Test condition: 48VDC input.</p> <p>4.Output voltage will always step down by 4 volts from input DC voltage.</p> <p>5.The output of NLDD-H should not be connected to the input of the same unit or output from other sources.</p> <p>6.Need additional EMI filter to meet regulations of EMC conducted. Characteristics of EMI filter please refer to the table, Guidance of additional filter.</p> <p>7.Please refer to the warranty statement on MEAN WELL's website at http://www.meanwell.com</p> <p>※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx</p> | | | | | | | |

Mechanical Specification

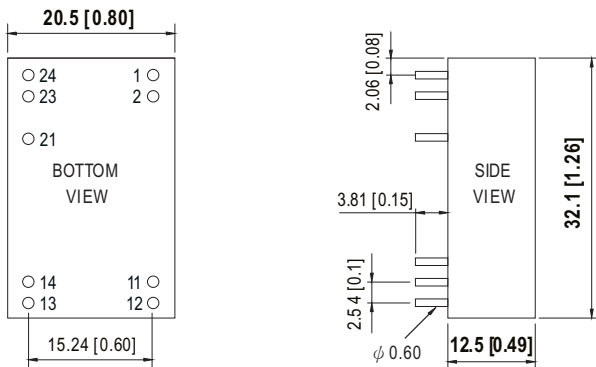
◎ Blank type(NLDD – 350~1050H):

Unit: mm (inch)



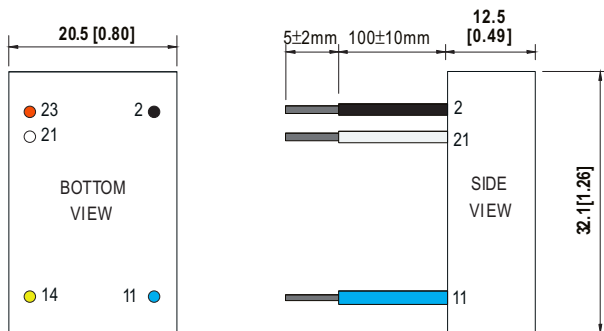
NOTE: Pin tolerance \pm 0.05mm

◎ Blank type(NLDD – 1200~1400H):



NOTE: Pin tolerance \pm 0.05mm

◎ W type(NLDD – 350~1400HW):



NOTE: All wires UL1569 22AWG

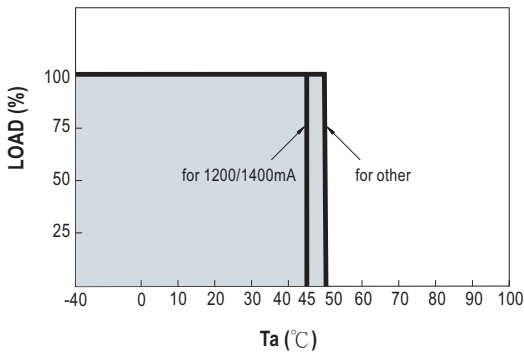
Pin Configuration

| Pin No. | | Comment |
|---------|---------|---|
| 1,2 | -Vin | Don't connect to -Vout |
| 11,12 | -Vout | LED - Connection |
| 13,14 | +Vout | LED + Connection |
| 22 | PWM DIM | ON/OFF and PWM Dimming (Leave open if not used) |
| 23,24 | +Vin | DC Supply |
| others | N.C | No connection |

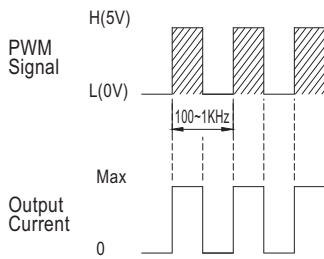
| Pin No. | | Comment |
|---------|---------|---|
| 1,2 | -Vin | Don't connect to -Vout |
| 11,12 | -Vout | LED - Connection |
| 13,14 | +Vout | LED + Connection |
| 21 | PWM DIM | ON/OFF and PWM Dimming (Leave open if not used) |
| 23,24 | +Vin | DC Supply |
| others | N.C | No connection |

| Pin No. | | Comment |
|---------|-----------------|---|
| 2 | -Vin (Black) | Don't connect to -Vout |
| 11 | -Vout (Blue) | LED - Connection |
| 14 | +Vout (Yellow) | LED + Connection |
| 21 | PWM DIM (White) | ON/OFF and PWM Dimming (Leave open if not used) |
| 23 | +Vin (Red) | DC Supply |
| others | N.C | No connection |

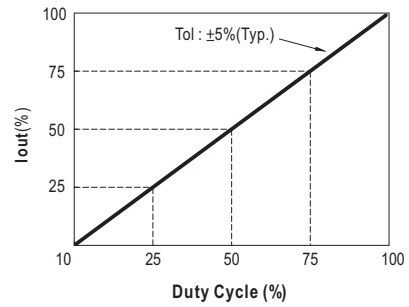
Derating Curve



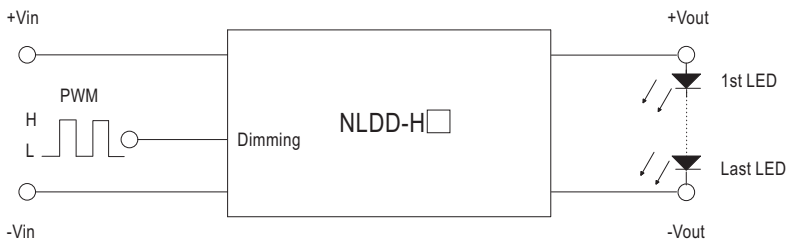
PWM Dimming Control



- ⊙ Short circuit PWM PIN can realize dimming turn off.
- ⊙ During PWM dimming operation, the output current will change to PWM style.

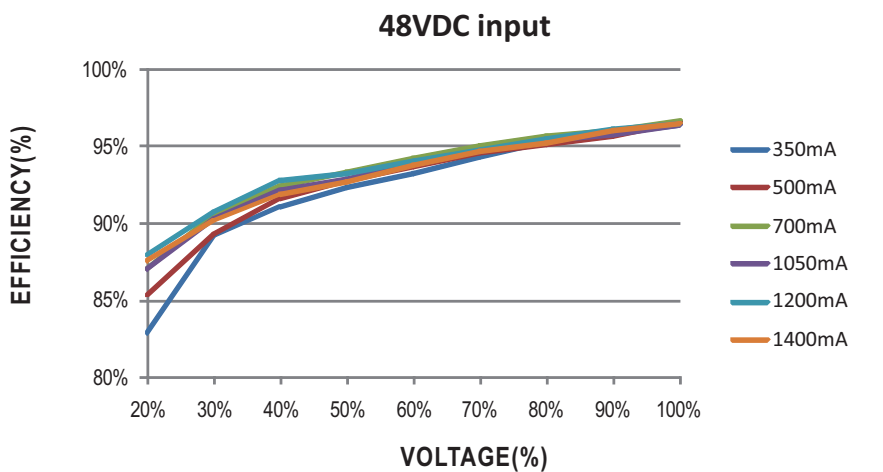
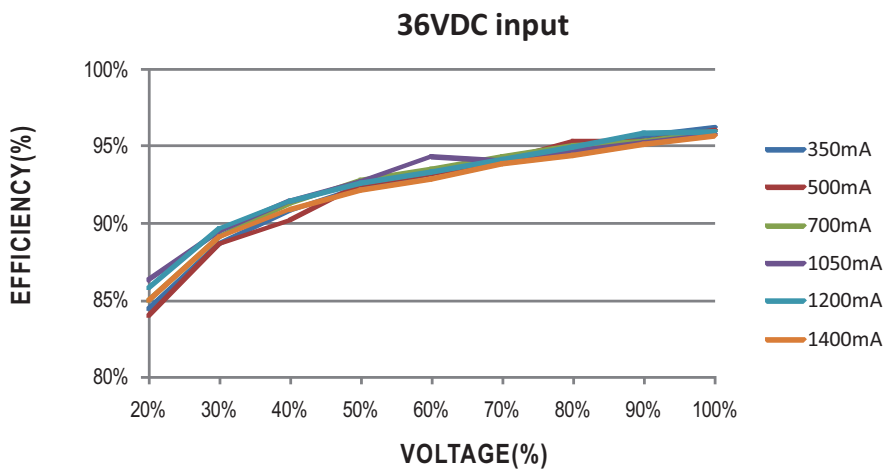
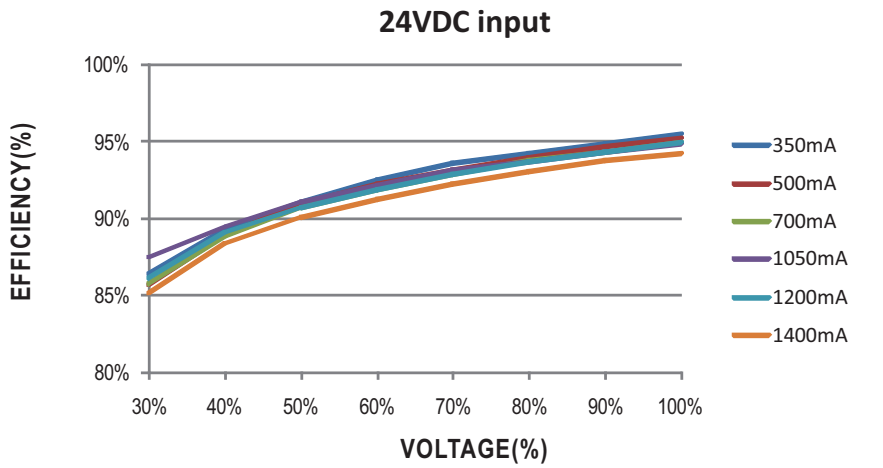


Standard Application



H: >2.5~5VDC or open circuit
L: <0.8VDC or short

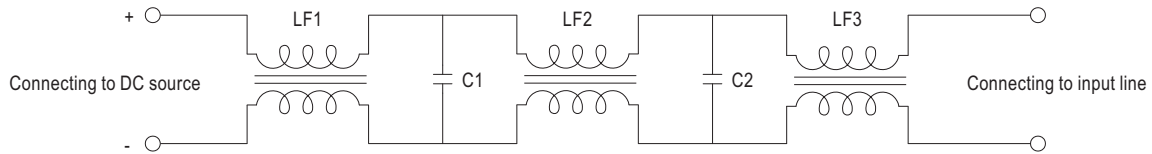
■ Efficiency VS Output Voltage



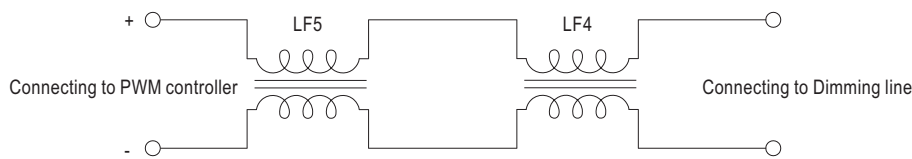
GUIDANCE OF ADDITIONAL FILTER

1.Schematic

EMI filter 1:



EMI filter 2:



2.Parameter description

| Parameter description | | | | | | |
|-----------------------|------|------|------|------|-------|-------|
| LF1 | LF2 | LF3 | Lf4 | Lf5 | C1 | C2 |
| 1.5mH | 12mH | 12mH | 10mH | 19mH | 2.2uF | 2.2uF |

3.Configuration

