

■ Features :

- DC/DC step-down converter
- Constant current output: 300mA to 1500mA
- Wide input voltage: 9 ~ 56VDC
- Wide output LED string voltage: 2 ~ 52VDC
- High efficiency up to 97%
- Built-in EMI filter, comply with EN55015 and FCC part15 without additional input filter and capacitors
- Built-in PWM and remote ON/OFF control
- Protections: Short circuit / Over temperature
- Cooling by free air convection
- Fully encapsulated with IP67 level for pin and wire style
- Non-potted, optional conformal coating for SMD style (Order No.: LDD-350-1000-HSC)
- Compact size
- Low cost, high reliability
- Suitable for driving illumination LED
- 3 years warranty



LDD-350H Blank : pin style
 W : wire style
 S : SMD style

LDD-1200H Blank : pin style
 W : wire style

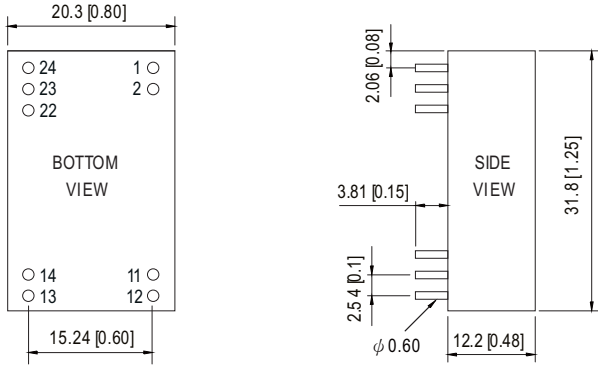
SPECIFICATION

| ORDER NO. | LDD-300H <input type="checkbox"/> | LDD-350H <input type="checkbox"/> | LDD-500H <input type="checkbox"/> | LDD-600H <input type="checkbox"/> | LDD-700H <input type="checkbox"/> | LDD-1000H <input type="checkbox"/> | LDD-1200H <input type="checkbox"/> | LDD-1500H <input type="checkbox"/> | | |
|----------------------------------|---|-----------------------------------|--|-----------------------------------|-----------------------------------|------------------------------------|------------------------------------|------------------------------------|-----------|----------|
| OUTPUT | CURRENT RANGE | | 300mA | 350mA | 500mA | 600mA | 700mA | 1000mA | 1200mA | 1500mA |
| | VOLTAGE RANGE <small>Note.4</small> | | 2 ~ 52VDC | | | | | | 2 ~ 46VDC | |
| | CURRENT ACCURACY (Typ.) | | ±3% at 24VDC input ; ±4% at 48VDC input for LDD-H/HW ; ±5% for LDD-HS | | | | | | | |
| | RIPPLE & NOISE(max.) <small>Note.2</small> | | 150mVp-p | 150mVp-p | 150mVp-p | 200mVp-p | 200mVp-p | 350mVp-p | 350mVp-p | 350mVp-p |
| | SWITCHING FREQUENCY | | 40KHz ~ 1000KHz | | | | | | | |
| EXTERNAL CAPACITANCE LOAD (max.) | | 2.2uF | | | | | | | | |
| INPUT | VOLTAGE RANGE | | 9 ~ 56VDC | | | | | | 9 ~ 52VDC | |
| | EFFICIENCY (max.) | | 97% at full load and 36VDC/48VDC input for LDD-H/HW ; 96% at full load and 36VDC/48VDC input for LDD-HS | | | | | | | |
| | DC CURRENT | Full load <small>Note.3</small> | 270mA | 320mA | 450mA | 550mA | 650mA | 900mA | 1100mA | 1360mA |
| | | No load | 5mA | | | | | | | |
| FILTER | | Capacitor | | | | | | | | |
| PWM DIMMING & ON/OFF CONTROL | REMOTE ON/OFF | | Leave open if not use Power ON with dimming: DIM ~ -Vin >2.5 ~ 6VDC or open circuit Power OFF : DIM ~ -Vin < 0.8VDC or short | | | | | | | |
| | PWM FREQUENCY | | 100 ~ 1KHz | | | | | | | |
| | QUIESCENT INPUT CURRENT IN SHUTDOWN MODE(max.) | | 1mA at PWM dimming OFF and 24VDC input | | | | | | | |
| PROTECTION | SHORT CIRCUIT | | Regulated at rated output current Protection type: Can be continued, recovers automatically after fault condition is removed | | | | | | | |
| | OVER TEMPERATURE | | Tj 150°C typically(IC1) detect on main control IC Protection type : Shut down, recovers automatically after temperature goes down | | | | | | | |
| ENVIRONMENT | WORKING TEMP. | | -40 ~ + 85°C (Refer to derating curve) | | | | | | | |
| | WORKING HUMIDITY | | 20% ~ 90% RH non-condensing for LDD-H/HW ; 20%~85% RH non-condensing for LDD-HS | | | | | | | |
| | STORAGE TEMP., HUMIDITY | | -55 ~ +125°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.) | | 100°C | | | | | | | | |
| EMC | EMC EMISSION | | Compliance to EN55015, FCC part 15 class B | | | | | | | |
| | EMC IMMUNITY | | Compliance to EN61000-4-2,3,4,6,8, light industry level, criteria A | | | | | | | |
| OTHERS | MTBF | | 2000Khrs min. MIL-HDBK-217F (25°C) | | | | | | | |
| | DIMENSION | | 31.8*20.3*12.2mm or 1.25**0.8**0.48" inch (L*W*H) for LDD-H/HW ; 31.8*20.3*11.4mm or 1.25**0.8**0.45" inch (L*W*H) for LDD-HS | | | | | | | |
| | WEIGHT | | LDD-H:15.6g ; LDD-HW:18g ; LDD-HS:12.8g | | | | | | | |
| | POTTING MATERIAL | | Epoxy(UL94-V0) for LDD-H/HW ; without potted for LDD-HS | | | | | | | |
| NOTE | 1.All parameters are specified at normal input(48VDC), rated load, 25°C 70% RH ambient. 2.Ripple & noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1uf capacitor. 3.Test condition: 48VDC input. 4.Output voltage will always step down by 3 volts from input DC voltage. 5.The output of LDD-H should not be connected to the input of the same unit or output from other sources. | | | | | | | | | |

■ Mechanical Specification

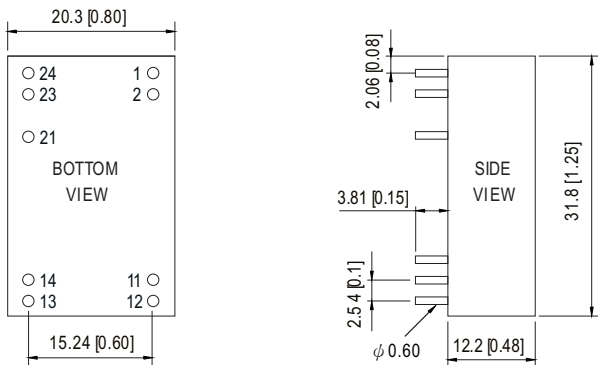
◎ Blank type(LDD- 300~1000H):

Unit: mm (inch)



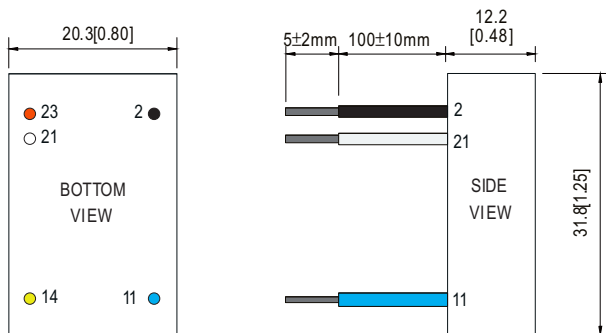
NOTE: Pin tolerance ± 0.05 mm

◎ Blank type(LDD- 1200~1500H):



NOTE: Pin tolerance ± 0.05 mm

◎W type(LDD- 300~1500HW):



NOTE: All wires UL3385 22AWG

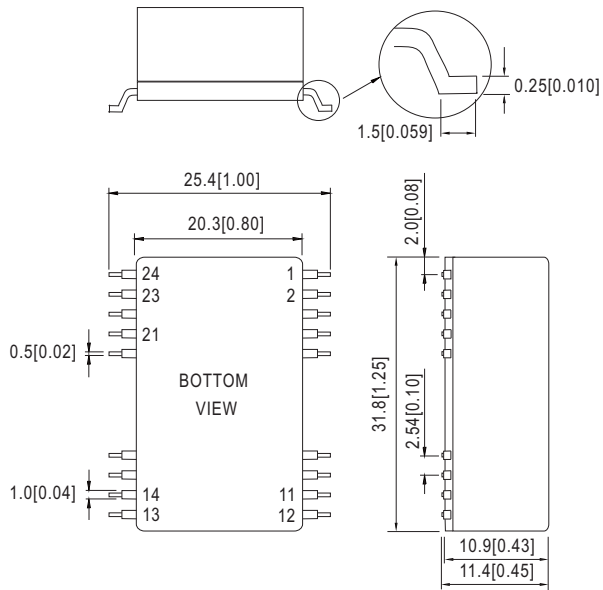
■ Pin Configuration

| 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 |

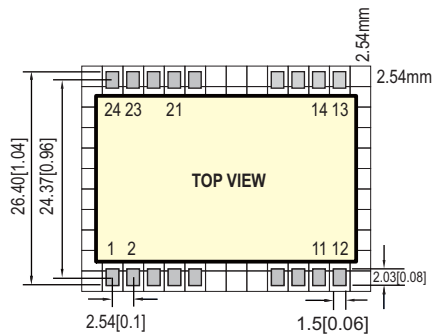
| Pin No. | | Comment |
|---------|-----------------|---|
| 2 | -Vin (Black) | Don't connect to -Vout |
| 11 | -Vout (Blue) | LED - Connection |
| 14 | +Vout (Yellow) | LED + Connection |
| 21 | PWM DIM (White) | ON/OFF and PWM Dimming (Leave open if not used) |
| 23 | +Vin (Red) | DC Supply |
| others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

◎S type(LDD – 300~1000HS):

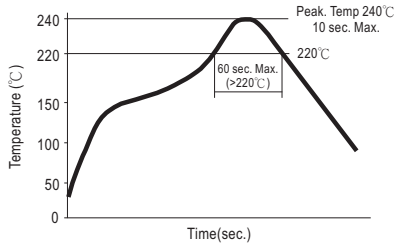


| Pin No. | | Comment |
|---------|---------|---|
| 1,2 | -Vin | Don't connect to -Vout |
| 11,12 | -Vout | LED - Connection |
| 13,14 | +Vout | LED + Connection |
| 21 | PWM DIM | ON/OFF and PWM Dimming (Leave open if not used) |
| 23,24 | +Vin | DC Supply |
| others | N.C | No connection |

■ Recommended PCB layout (for LDD-300~1000HS)

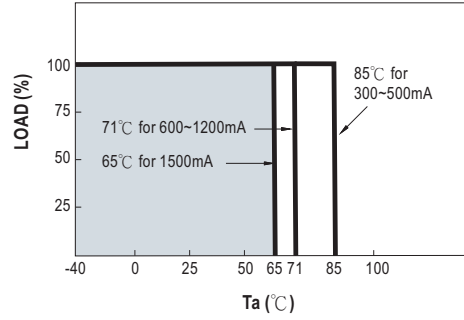


Reflow Soldering Curve (for LDD-300~1000HS)

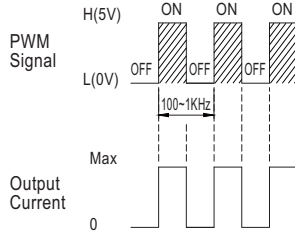


Remark : The curve applies only to the " Hot Air Reflow Soldering"

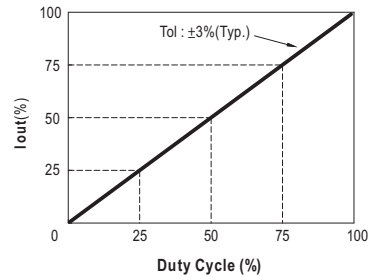
Derating Curve



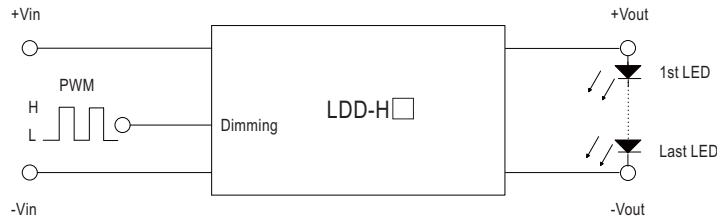
PWM Dimming Control



⊙ During PWM dimming operation, the output current will change to PWM style.



Standard Application



H: >2.5~6VDC or open circuit
L: <0.8VDC or short

Efficiency VS Output Voltage(Number of LEDs)

Fig-1 12VDC input, 1~3 LEDs(Vf=3V)

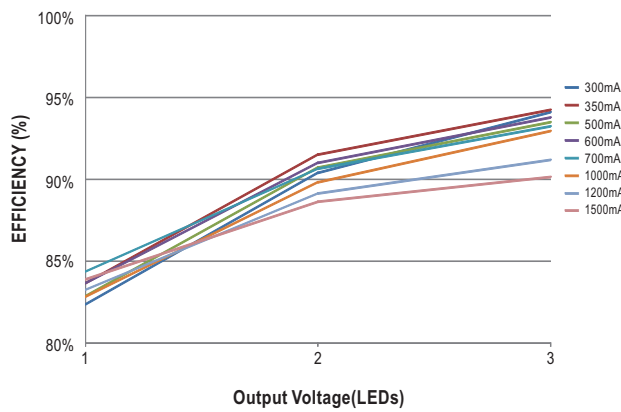


Fig-2 24VDC input, 1~7 LEDs(Vf=3V)

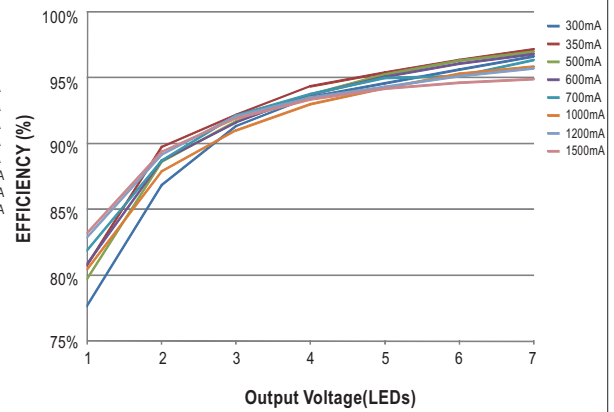


Fig-3 36VDC input, 1~10 LEDs(Vf=3V)

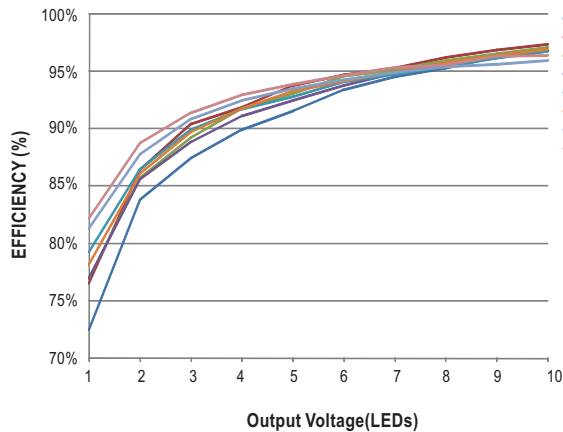


Fig-4 48VDC input, 1~14 LEDs(Vf=3V)

