

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**

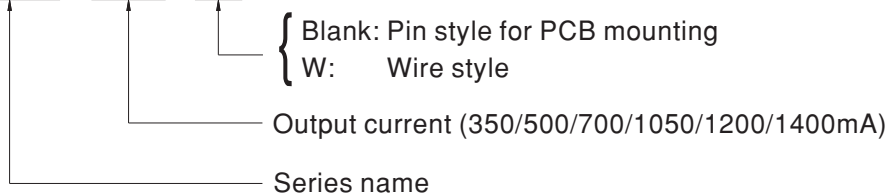
- DC battery source lighting
- Portable lighting
- Commercial lighting
- DC 48V Track lighting
- DC 24V landscape lighting
- For class III application
- For  $\diamond$  class III application(SELV)

**■ 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





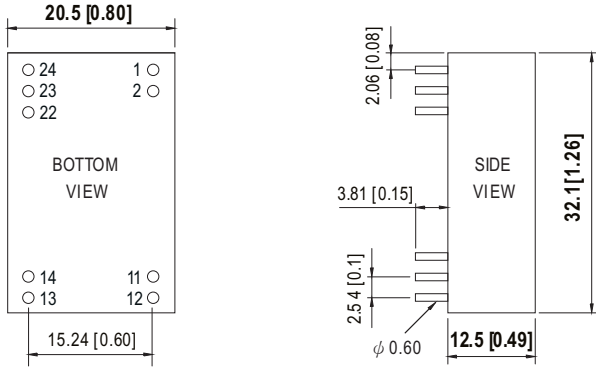
**SPECIFICATION**

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 &amp; 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 <a href="http://www.meanwell.com">http://www.meanwell.com</a></p>							

### Mechanical Specification

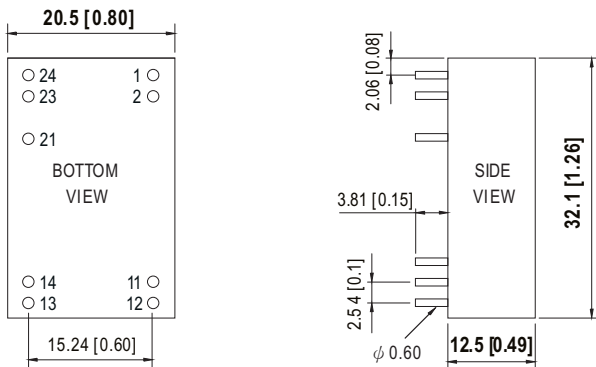
◎ Blank type(NLDD – 350~1050H):

Unit: mm (inch)



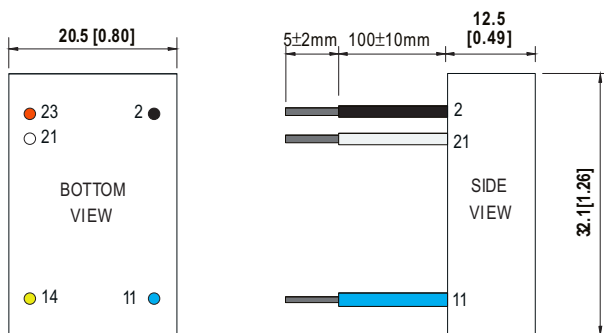
NOTE: Pin tolerance  $\pm 0.05$ mm

◎ Blank type(NLDD – 1200~1400H):



NOTE: Pin tolerance  $\pm 0.05$ mm

◎ W type(NLDD – 350~1400HW):



NOTE: All wires UL1569 22AWG

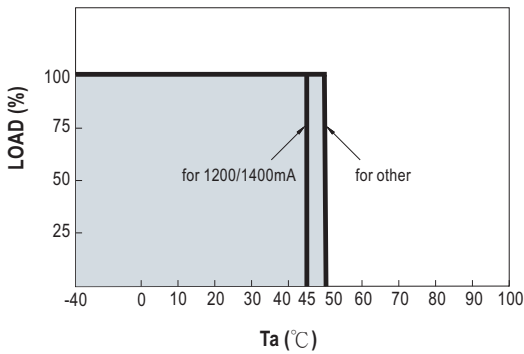
### Pin Configuration

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

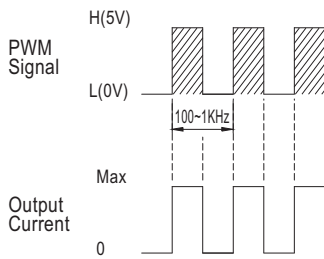
Pin No.		Comment
1,2	-Vin	Don't connect to -Vout
11,12	-Vout	LED - Connection
13,14	+Vout	LED + Connection
21	PWM DIM	ON/OFF and PWM Dimming (Leave open if not used)
23,24	+Vin	DC Supply
others	N.C	No connection

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

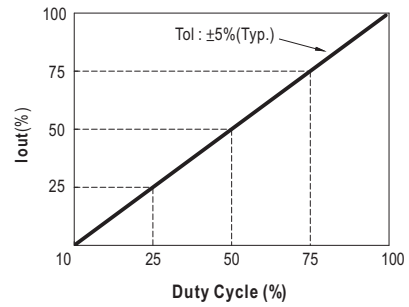
Derating Curve



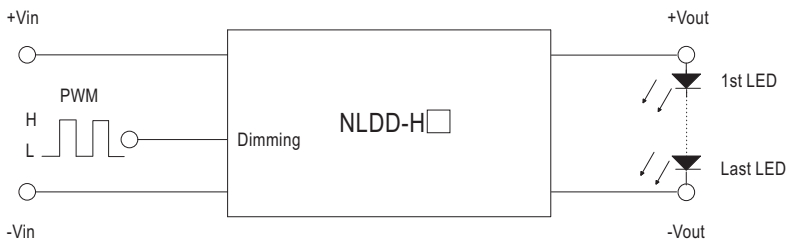
PWM Dimming Control



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

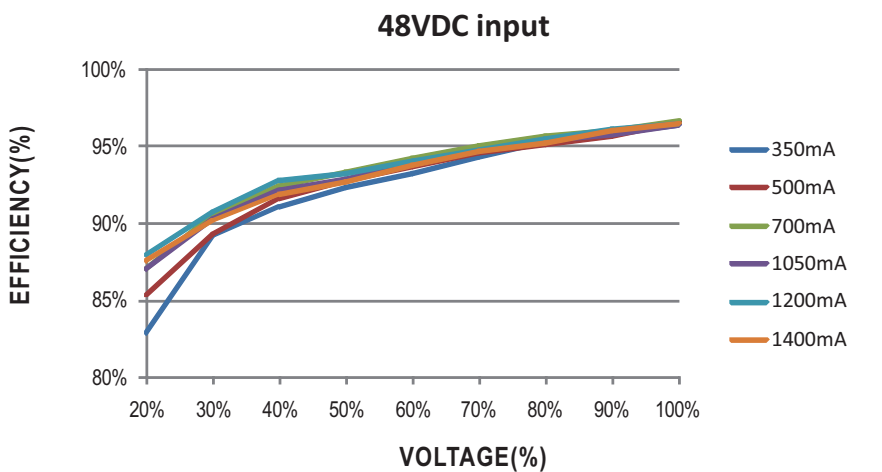
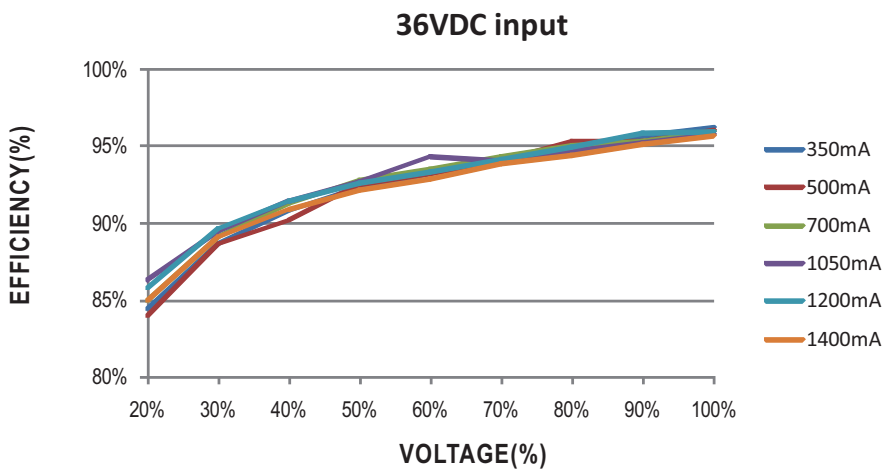
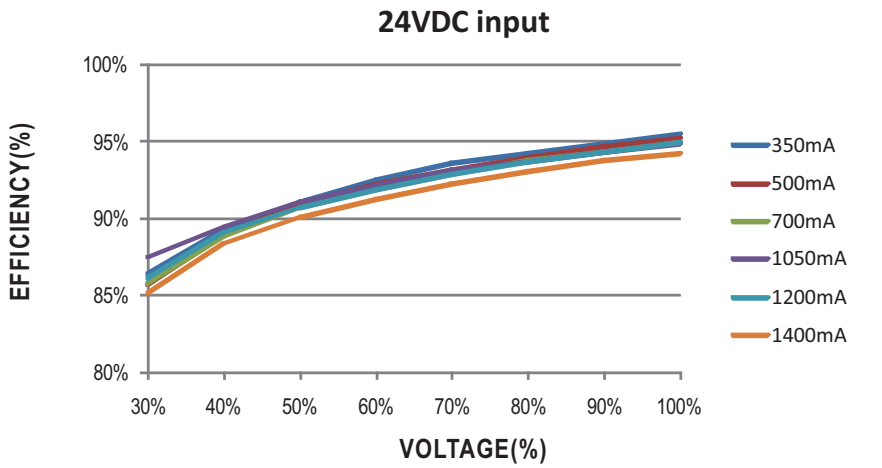


Standard Application



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

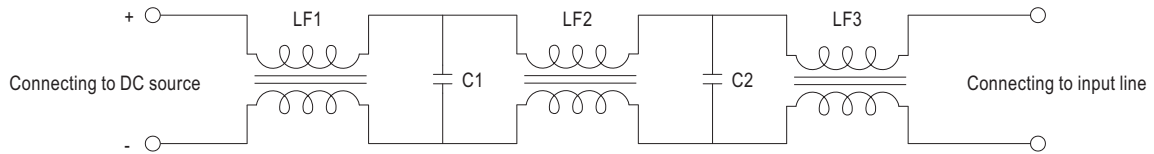
■ Efficiency VS Output Voltage



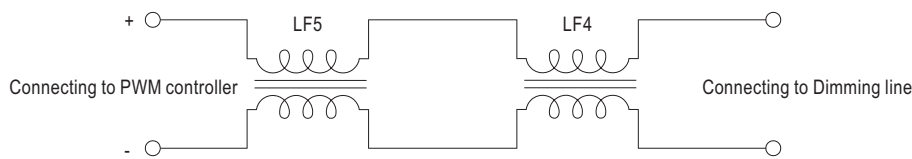
**GUIDANCE OF ADDITIONAL FILTER**

**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**

