


■ Features :

- DC/DC step-down converter
- Constant current output: 300mA to 700mA
- Wide input voltage: 9 ~ 36VDC
- Wide output LED string voltage: 2 ~ 32VDC
- High efficiency up to 95%
- Built-in EMI filter, comply with EN55015 and FCC part15 without additional input filter and capacitors
- Built-in PWM dimming 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-350LSC)
- Compact size
- Low cost, high reliability
- Suitable for driving illumination LED
- 3 years warranty



LDD-350L **W** Blank : pin style
W : wire style
S : SMD style

SPECIFICATION

ORDER NO.	LDD-300L <input type="checkbox"/>	LDD-350L <input type="checkbox"/>	LDD-500L <input type="checkbox"/>	LDD-600L <input type="checkbox"/>	LDD-700L <input type="checkbox"/>
OUTPUT	CURRENT RANGE	300mA	350mA	500mA	600mA
	VOLTAGE RANGE Note.4	2 ~ 32VDC for LDD-300~700L/LW ; 2 ~ 28VDC for LDD-300~700LS			
	CURRENT ACCURACY (Typ.)	±5% at 24VDC input			
	RIPPLE & NOISE(max.) Note.2	150mVp-p	150mVp-p	150mVp-p	200mVp-p
	SWITCHING FREQUENCY	40KHz ~ 1000KHz			
INPUT	EXTERNAL CAPACITANCE LOAD (max.)	2.2uF			
	VOLTAGE RANGE	9 ~ 36VDC for LDD-300~700L/LW ; 9 ~ 32VDC for LDD-300~700LS			
	EFFICIENCY (max.)	95% at full load and 24VDC/36VDC input for LDD-300~700L/LW ; 95% at full load and 24VDC input for LDD-300~700LS			
	DC CURRENT	Full load Note.3 300mA	350mA	500mA	600mA
		No load 5mA			
PWM DIMMING & ON/OFF CONTROL	FILTER	Capacitor			
	REMOTE ON/OFF	Leave open if not use			
		Power ON with dimming: DIM ~ -Vin > 3.5 ~ 8VDC or open circuit			
	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	T _j 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-300~700L/LW ; 20% ~ 85% RH non-condensing for LDD-300~700LS			
	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	Compliance to EN55015, FCC part 15 class B			
OTHERS	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,6,8, light industry level, criteria A			
	MTBF	2000Khrs min. MIL-HDBK-217F (25°C)			
	DIMENSION	22.6*9.9*8.9mm or 0.89*0.39*0.35" inch (L*W*H) for LDD-300~700L/LW ; 25.4*10.5*9.3mm or 1.0*0.4135*0.366" inch (L*W*H) for LDD-300~700LS			
	WEIGHT	LDD-300~700L:4g ; LDD-300~700LW:7.3g ; LDD-300~700LS:3.4g			
	POTTING MATERIAL	Epoxy(UL94-V0) for LDD-300~700L/LW ; without potted for LDD-300~700LS			
NOTE	1. All parameters are specified at normal input(24VDC), 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: 24VDC input. 4. Output voltage will always step down by 3 volts from input DC voltage.				


■ Features :

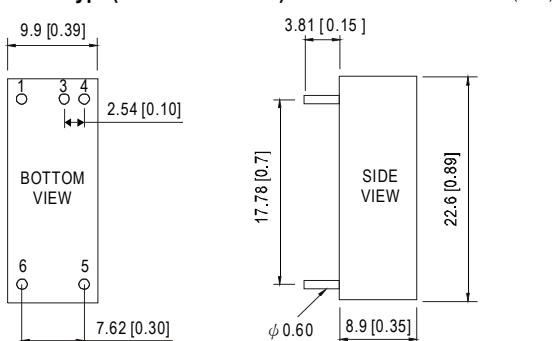
- DC/DC step-down converter
- Constant current output: 1000mA to 1500mA
- Wide input voltage: 6 ~ 36VDC
- Wide output LED string voltage: 2 ~ 30VDC
- High efficiency up to 95%
- Built-in EMI filter, comply with EN55015 and FCC part15 without additional input filter and capacitors
- Built-in PWM +analog dimming and remote ON/OFF control
- Protections: Short circuit
- 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-[1000]LSC)
- Compact size
- Low cost, high reliability
- Suitable for driving illumination LED
- 3 years warranty



LDD-1000L **[W]** Blank : pin style
W : wire style
S : SMD style

SPECIFICATION

ORDER NO.	LDD-1000L <input type="checkbox"/>	LDD-1200L <input type="checkbox"/>	LDD-1500L <input type="checkbox"/>							
OUTPUT	CURRENT RANGE	1000mA	1200mA							
	VOLTAGE RANGE Note.4	2 ~ 30VDC								
	CURRENT ACCURACY (Typ.)	±5% at 24VDC input								
	RIPPLE & NOISE(max.) Note.2	1.5Vp-p	1.5Vp-p							
	SWITCHING FREQENCY	1000KHz								
	EXTERNAL CAPACITANCE LOAD(max.)	2.2uF								
INPUT	VOLTAGE RANGE	6 ~ 36VDC								
	EFFICIENCY (max.)	95% at full load and 24VDC/36VDC input for LDD-1000~1500L/LW								
	DC CURRENT	<table border="1"> <tr> <td>Full load Note.3</td><td>990mA</td><td>1160mA</td><td>1450mA</td></tr> <tr> <td>No load</td><td>5mA</td><td></td><td></td></tr> </table>	Full load Note.3	990mA	1160mA	1450mA	No load	5mA		
Full load Note.3	990mA	1160mA	1450mA							
No load	5mA									
FILTER	Capacitor									
PWM DIMMING & ON/OFF CONTROL	Leave open if not use									
	Power ON with dimming: DIM ~ -Vin > 2.6 ~ 5.5VDC or open circuit									
	Power OFF : DIM ~ -Vin < 0.4VDC or short									
	PWM FREQUENCY	100 ~ 500Hz								
ANALOG DIMMING & ON/OFF CONTROL	QUIESCENT INPUT CURRENT IN SHUTDOWN MODE(max.)	1mA at PWM dimming OFF and 24VDC input								
	Leave open if not use									
	Power ON with dimming : DIM ~ -Vin > 0.5 ~ 2.5VDC or open circuit									
PROTECTION	Power OFF : DIM ~ -Vin < 0.4VDC or short									
	SHORT CIRCUIT	Regulated at rated output current								
	Protection type: Can be continued, recovers automatically after fault condition is removed									
ENVIRONMENT	WORKING TEMP.	-40 ~ +71°C (Refer to derating curve)								
	WORKING HUMIDITY	20% ~ 90% RH non-condensing for LDD-1000~1500L/LW ; 20% ~ 85% RH non-condensing for LDD-1000~1500LS								
	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-1000~1500L/LW ; 31.8*20.3*10.9mm or 1.25" * 0.8" * 0.43" inch (L*W*H) for LDD-1000~1500LS								
	WEIGHT	LDD-1000~1500L: 15.6g ; LDD-1000~1500LW: 18g ; LDD-1000~1500LS: 12.8g								
	POTTING MATERIAL	Epoxy(UL94-V0) for LDD-1000~1500L/LW ; without potted for LDD-1000~1500LS								
NOTE	1. All parameters are specified at normal input(24VDC), 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: 36VDC input. 4. Output voltage will always step down by 3 volts from input DC voltage.									

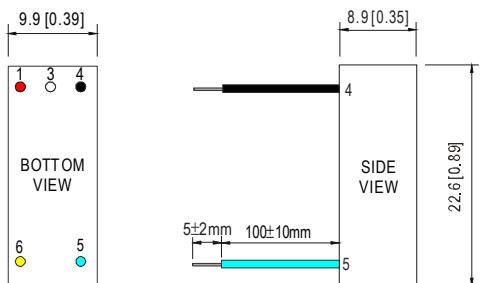
■ Mechanical Specification
Blank type(LDD-300~700L):


Unit: mm (inch)

■ Pin Configuration

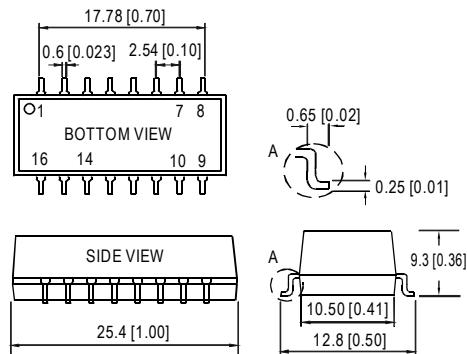
Pin No.	Output	Comment
1	+Vin	DC Supply
3	PWM DIM	ON/OFF and PWM Dimming (Leave open if not used)
4	-Vin	Don't connect to -Vout
5	-Vout	LED - Connection
6	+Vout	LED + Connection

NOTE: Pin tolerance ± 0.05 mm

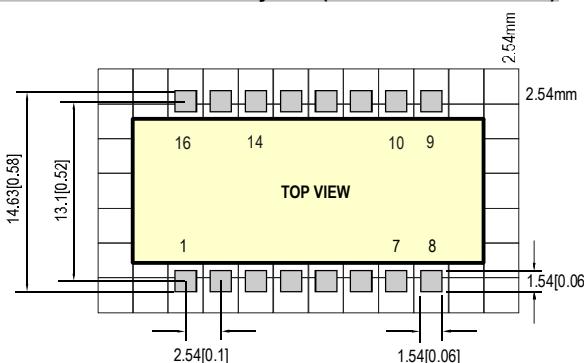
W type(LDD-300~700LW):


Pin No.	Output	Comment
1	+Vin (Red)	DC Supply
3	PWM DIM (White)	ON/OFF and PWM Dimming (Leave open if not used)
4	-Vin (Black)	Don't connect to -Vout
5	-Vout (Blue)	LED - Connection
6	+Vout (Yellow)	LED + Connection

NOTE: All wires UL3385 22AWG

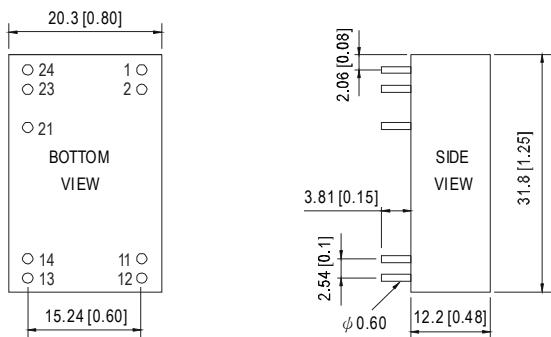
S type(LDD-300~700LS):


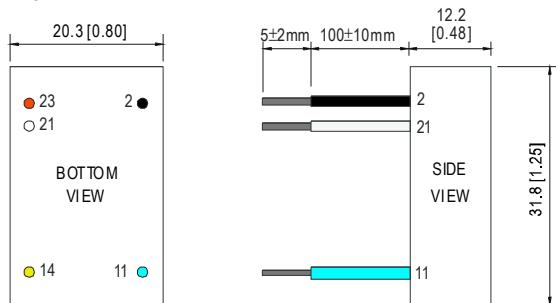
Pin No.	Output	Comment
1	+Vin	DC Supply
7,8	+Vout	LED + Connection
9,10	-Vout	LED - Connection
14	PWM DIM	ON/OFF and PWM Dimming (Leave open if not used)
16	-Vin	Don't connect to -Vout
others	N.C	LED - Connection

■ Recommended PCB layout (for LDD-300~700LS)


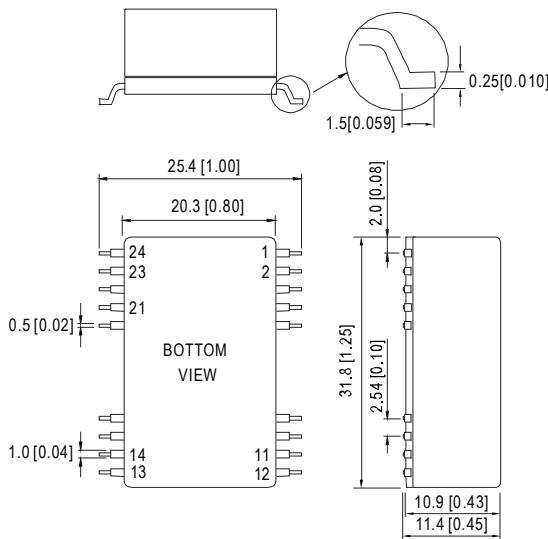
■ Mechanical Specification
Blank type(LDD-1000~1500L):

Unit: mm (inch)


NOTE: Pin tolerance ± 0.05 mm

W type(LDD-1000~1500LW):


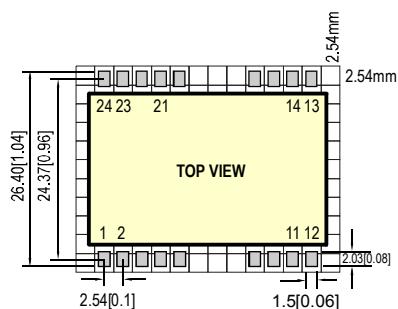
NOTE: All wires UL3385 22AWG

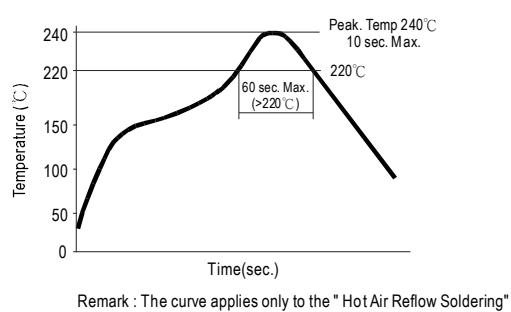
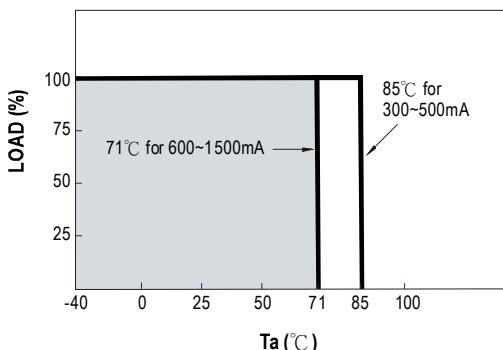
S type(LDD-1000~1500LS):

■ Pin Configuration

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

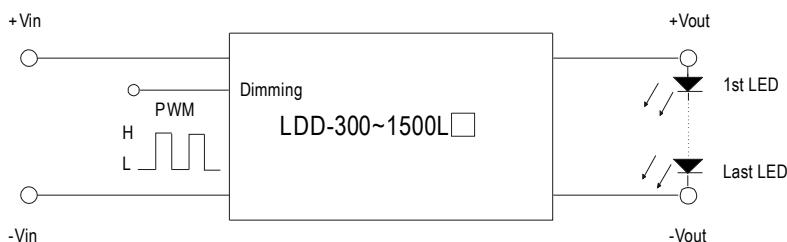
Pin No.	Output	Comment
2	-Vin (Black)	Don't connect to -Vout
11	-Vout (Blue)	LED - Connection
14	+Vout (Yellow)	LED + Connection
21	PWM +analog DIM (White)	ON/OFF and PWM / analog Dimming (Leave open if not used)
23	+Vin (Red)	DC Supply

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

■ Recommended PCB layout (for LDD-1000~1500LS)


Reflow Soldering Curve (for LDD-300~1500LS)

Derating Curve

PWM Dimming Control (for 300~1500mA)

Io Adjustment by PWM signal :

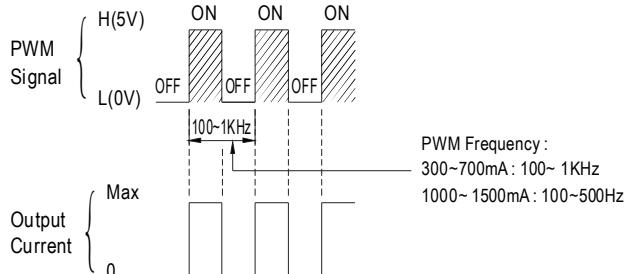


300 ~ 700mA :

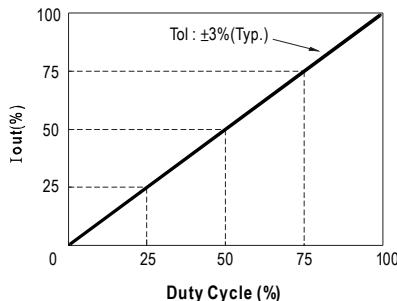
H: > 3.5~8VDC or open circuit
L: < 0.5VDC or short

1000 ~ 1500mA :

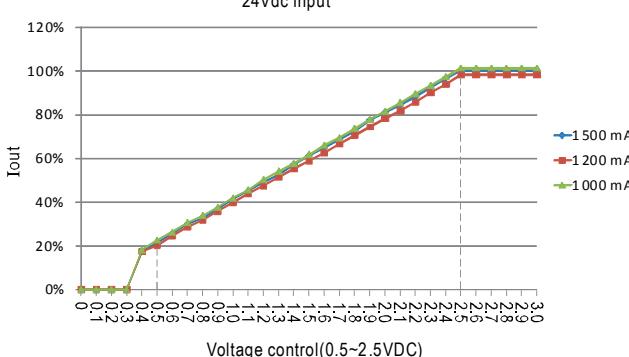
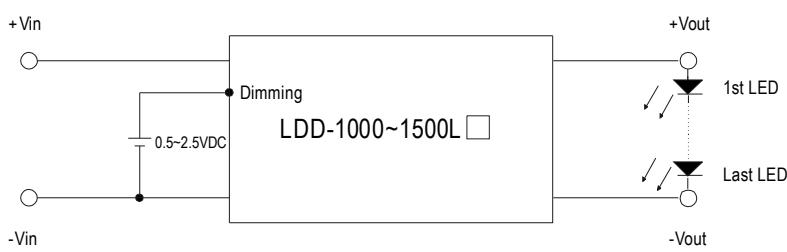
H: > 2.6~5.5VDC or open circuit
L: < 0.4VDC or short



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

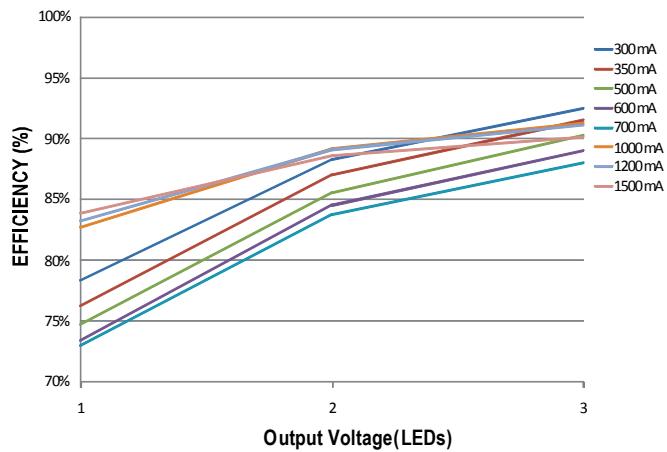

Analog Dimming Control for 1000~ 1500mA only

Io Adjustment by DC voltage :

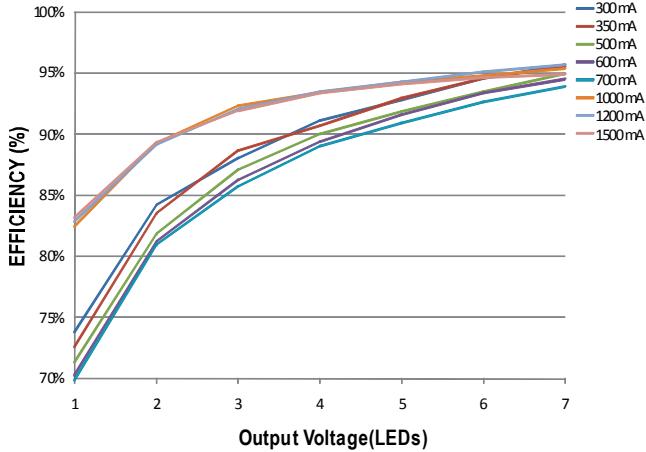


■ Efficiency VS Output Voltage(Number of LEDs)
Fig-1

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)

