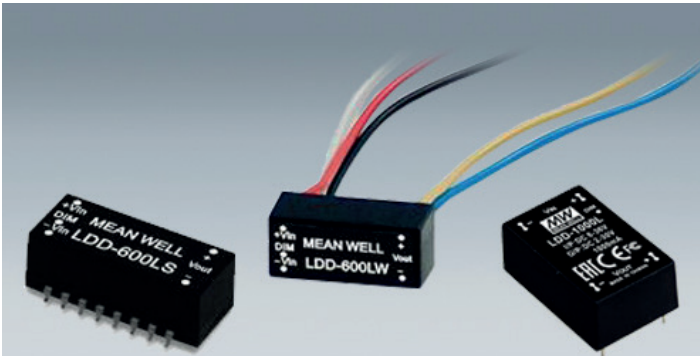


LDD-L Series

DC-DC Constant Current Step-Down LED Driver



Case No:
22.6 x 9.9 x 8.9mm or for LDD-300~700L/LW ; 25.4 x 10.5 x 9.3mm for LDD-300~700LS

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 part 15 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
- Compact Style
- Low cost, high reliability
- Suitable for driving illumination LED
- 3 years warranty

LDD-300L **W** Blank: pin style W: Wire style S: SMD style



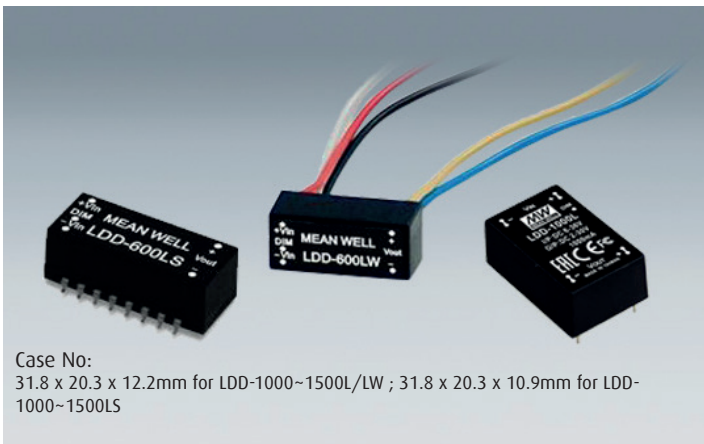
Specification

INPUT	Voltage Range	2 ~ 32VDC for LDD-300~700L/LW; 2~ 28VDC for LDD-300~700LS					
	Efficiency	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:	300mA	350mA	500mA	600mA	700mA
		No Load:	5mA				
	Filter	Capacitor					
OUTPUT	MODEL 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"/>	
	Voltage	2 ~ 32VDC					
	Current Accuracy	±5% at 24VDC input					
	Current Range	300mA	350mA	500mA	600mA	700mA	
	Ripple Noise MAX.	150mVp-p	150mVp-p	150mVp-p	200mVp-p	200mVp-p	
	Switching Frequency	40KHz ~ 1000KHz					
	External Capacitance Load	2.2uF					
PWM DIMMING & ON/OFF CONTROL	Remote On/Off	Leave open if not in use Power ON with dimming: DIM~ -VIN >3.5 ~ 8VDC or open circuit Power OFF: DIM~ -VIN <0.5VDC or short					
	PWM Frequency	100 ~ 1KHz					
	Quiescent Input Current in Shutdown Mode	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-300~700L/LW ; 20% ~ 85% RH non-condensing for LDD-300~700LS					
	Storage Temp., Humidity	-55 ~ +125°C, 10~95%RH					
	Temp. Co-efficient	±0.03%/°C					
	Vibration	10~500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes					
EMC	Operating Case Temp.	100°C					
	EMC Emission	Compliance to EN55015, FCC part 15 class B, EAC TP TC 020					
	EMC Immunity	Compliance to EN61000-4-2,3,4,6,8, light industry level, criteria A, EAC TP TC 020					
OTHERS	M.T.B.F.	1000K hrs min. MIL-HDBK-217F (25°C)					
	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					

1. All parameters are specified at normal input (48VDC), rated load, 25°C 70% of RH ambient.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire 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.
5. The output of LDD-L should not be connected to the input of the same unit or output from other sources.

LDD-L Series

DC-DC Constant Current Step-Down LED Driver



Case No:
31.8 x 20.3 x 12.2mm for LDD-1000~1500L/LW ; 31.8 x 20.3 x 10.9mm for LDD-1000~1500LS

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 part 15 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-1000LSC).
- Compact Style
- Low cost, high reliability
- Suitable for driving illumination LED
- 3 years warranty

LDD-300L **W** Blank: pin style W: Wire style S: SMD style



Specification

INPUT	Voltage	2 ~ 32VDC			
	Efficiency	95% at full load and 24VDC/36VDC input for LDD-1000~1500L/LW			
	DC Current	Full load:	990mA	1160mA	1450mA
		No Load:	5mA		
	Filter	Capacitor			
OUTPUT	MODEL No.	LDD-1000L <input type="checkbox"/>	LDD-1200L <input type="checkbox"/>	LDD-1500L <input type="checkbox"/>	
	Voltage	2 ~ 32VDC			
	Current Accuracy	±5% at 24VDC input			
	Current Range	990mA	1160mA	1450mA	
	Ripple Noise MAX.	1.5Vp-p	1.5Vp-p	1.5Vp-p	
	Switching Frequency	40KHz ~ 1000KHz			
	External Capacitance Load	2.2uF			
PWM DIMMING & ON/OFF CONTROL	Remote On/Off	Leave open if not in use PoPower ON with dimming: DIM ~ -Vin >2.6 ~ 5.5VDC or open circuit Power OFF: DIM~ -VIN <0.4VDC or short			
	PWM Frequency	100 ~ 500Hz			
	Quiescent Input Current in Shutdown Mode	1mA at PWM dimming OFF and 24VDC input			
ANALOGUE DIMMING & ON/OFF CONTROL		Leave open if not in use			
	Remote On/Off	Power ON with dimming : DIM ~ -Vin>0.5~2.5VDC or open circuit Power OFF: DIM~ -VIN <0.4VDC or short			
PROTECTION	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-300~700L/LW ; 20% ~ 85% RH non-condensing for LDD-300~700LS			
	Storage Temp., Humidity	-55 ~ +125°C, 10~95%RH			
	Temp. Co-efficient	±0.03%/°C			
	Vibration	10~500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes			
EMC	Operating Case Temp.	100°C			
	EMC Emission	Compliance to EN55015, FCC part 15 class B, EAC TP TC 020			
	EMC Immunity	Compliance to EN61000-4-2,3,4,6,8, light industry level, criteria A, EAC TP TC 020			
OTHERS	M.T.B.F.	1000K hrs min. MIL-HDBK-217F (25°C)			
	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			

1. All parameters are specified at normal input (24VDC), rated load, 25°C 70% of RH ambient.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire 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.
5. The output of LDD-L should not be connected to the input of the same unit or output from other sources.

LDD-L Series

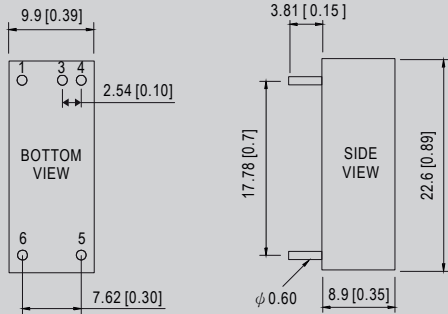
DC-DC Constant Current Step-Down LED Driver



Mechanical Specification

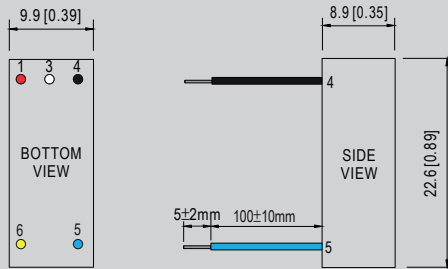
Blank type(LDD-300~700L):

Unit: mm (inch)



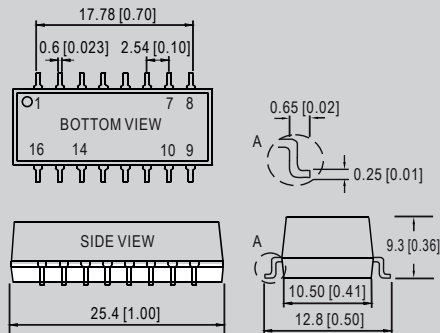
NOTE: Pin tolerance $\pm 0.05\text{mm}$

W type(LDD-300~700LW):

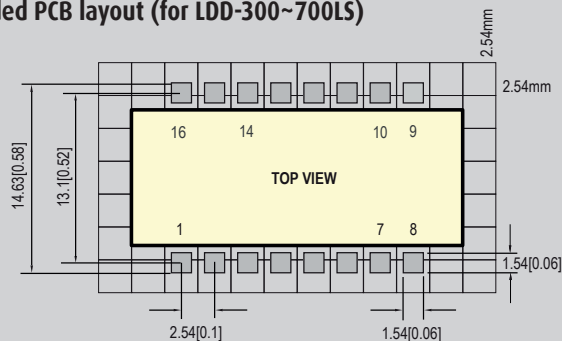


NOTE: All wires UL3385 22AWG

S type(LDD-300~700LS):



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



Pin Configuration

Pin No.		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

Pin Configuration

Pin No.		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

Pin Configuration

Pin No.		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

LDD-L Series

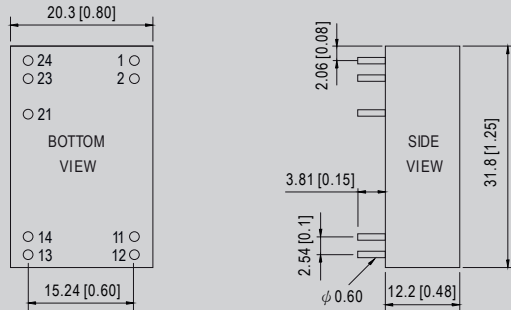
DC-DC Constant Current Step-Down LED Driver



Mechanical Specification

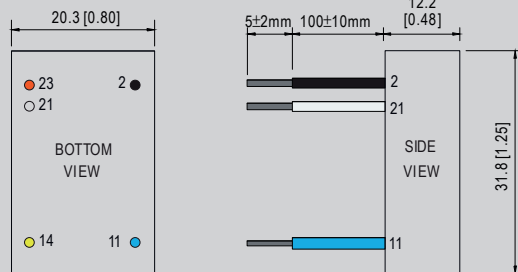
Blank type(LDD-1000~1500L):

Unit: mm (inch)



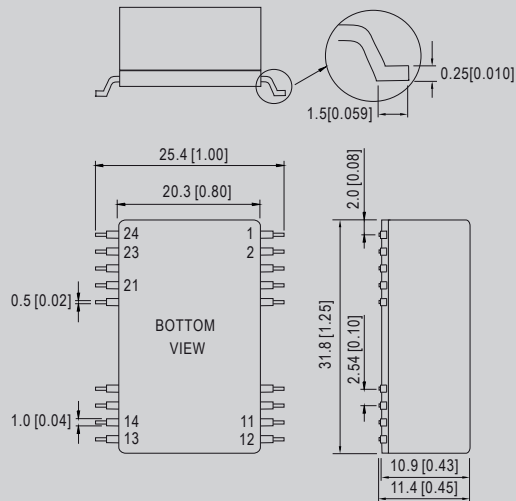
NOTE: Pin tolerance ± 0.05 mm

W type(LDD-1000~1500LW):

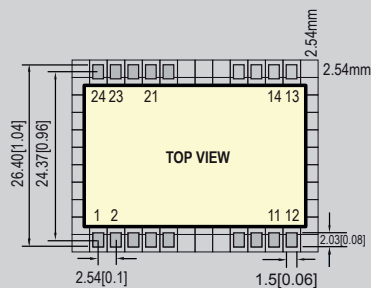


NOTE: All wires UL3385 22AWG

S type(LDD-1000~1500LS):



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



Pin Configuration

Pin No.		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 Configuration

Pin No.		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 Configuration

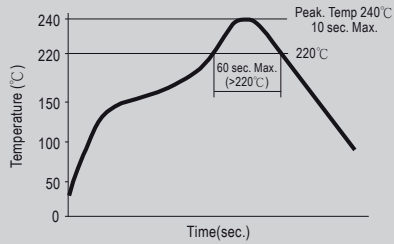
Pin No.		Comment
1,2	-Vin	Don't connect to -Vout
11,12	-Vout	LED - Connection
13,14	+Vout	LED + Connection
21	PWM +analog DIM	ON/OFF and PWM / analog Dimming (Leave open if not used)
23,24	+Vin	DC Supply
others	N.C	No connection

LDD-L Series

DC-DC Constant Current Step-Down LED Driver

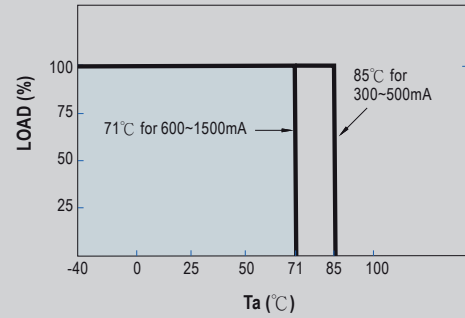


Reflow Soldering Curve (for LDD-300~1500LS)



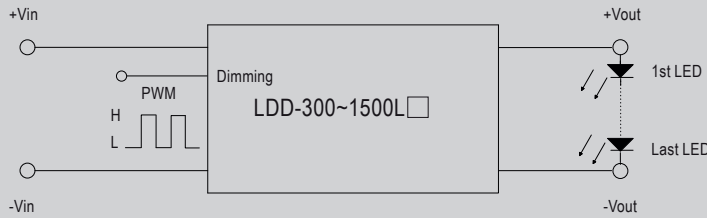
Remark : The curve applies only to the " Hot Air Reflow Soldering"

Derating Curve



PWM Dimming Control (for 300~1500mA)

Io Adjustment by PWM signal :



300 ~ 700mA :

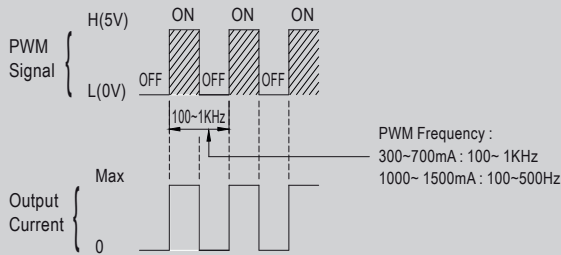
H: > 3.5~8VDC or open circuit

L: < 0.5VDC or short

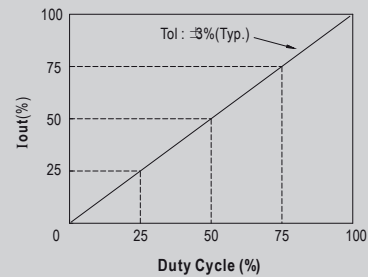
1000 ~ 1500mA :

H: > 2.6~5.5VDC or open circuit

L: < 0.4VDC or short

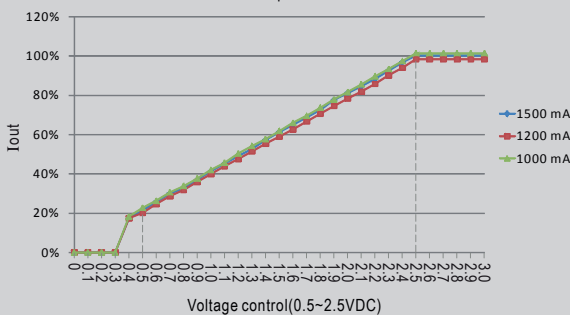
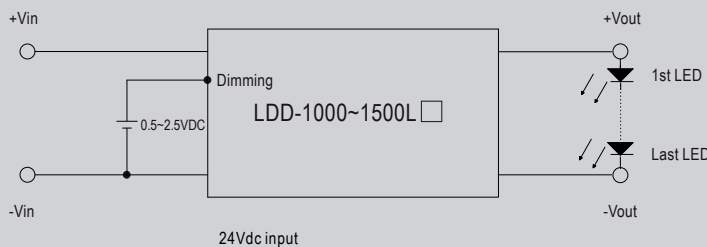


© During PWM dimming operation, the output current will change to PWM style.



Analogue Dimming Control for 1000~1500mA only

Io Adjustment by DC voltage :



LDD-L Series

DC-DC Constant Current Step-Down LED Driver



Efficiency VS Output Voltage (Number of LEDs)

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

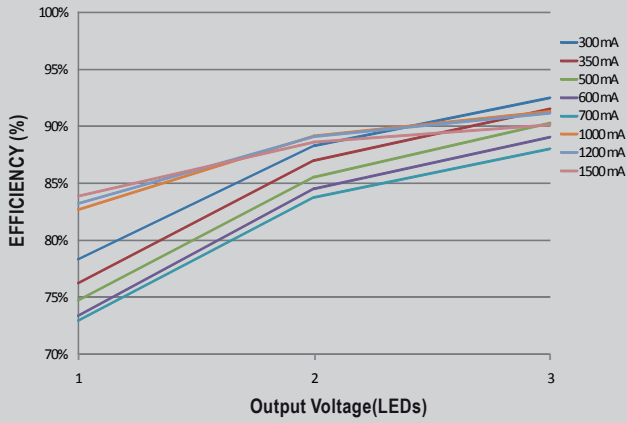


Fig-2 24VDC input, 1~7 LED s(Vf=3V)

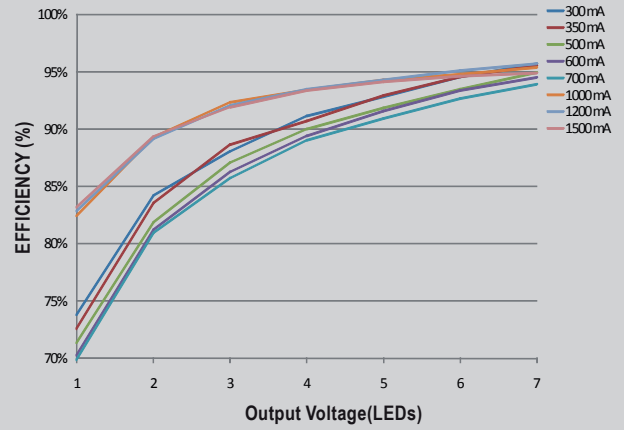


Fig-3 36VDC input, 1~10 LEDs(Vf=3V)

