DC-DC Constant Current LED driver

LDD-L series

Features :

- Constant current output: 300mA to 700mA
- Wide input voltage: 9 ~ 36VDC
- Wide output LED string voltage: 2 ~ 32VDC
- High efficiency up to 95%
- DC/DC step-down converter
- 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
- Compact size
- Low cost, high reliability
- Suitable for driving illumination LED
- 3 years warranty

FC CE

LDD-350L W Blank : pin style
W : wire style

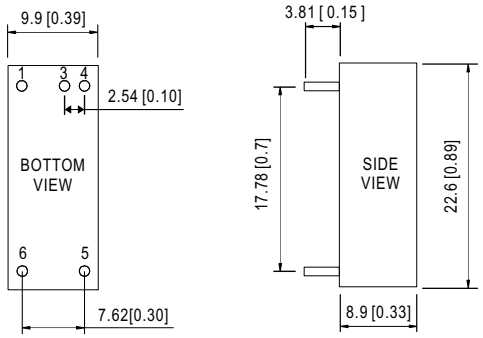
SPECIFICATION

ORDER NO.			LDD-300L□	LDD-350L□	LDD-500L□	LDD-600L□	LDD-700L□
OUTPUT	CURRENT RANGE		300mA	350mA	500mA	600mA	700mA
	VOLTAGE RANGE		2 ~ 32VDC				
	CURRENT ACCURACY (Typ.)		±5% at 24VDC input				
	RIPPLE & NOISE(max.) Note.2		150mVp-p	150mVp-p	150mVp-p	200mVp-p	200mVp-p
	SWITCHING FREQENCY		40KHz ~ 1000KHz				
	EXTERNAL CAPACITANCE LOAD (max.)		2.2uF				
INPUT	VOLTAGE RANGE		9 ~ 36VDC				
	EFFICIENCY (max.)		95% at full load and 24VDC/36VDC input				
	DC CURRENT	Full load Note.3	300mA	350mA	500mA	600mA	700mA
		No load	10mA				
	FILTER		Capacitor				
PWM DIMMING & ON/OFF CONTROL	REMOTE ON/OFF		Leave open if not 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(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℃ typically(IC1) detect on main control IC				
			Protection type : Shut down, recovers automatically after temperature goes down				
ENVIRONMENT	WORKING TEMP.		-40 ~ + 85℃(Refer to derating curve)				
	WORKING HUMIDITY		20% ~ 90% RH non-condensing				
	STORAGE TEMP., HUMIDITY		-55 ~ +125℃, 10 ~ 95% RH				
	TEMP. COEFFICIENT		±0.03% / ℃				
	VIBRATION		10 ~ 500Hz, 2G 10min./1 cycle, period for 60min. each along X, Y, Z axes				
	OPERATING CASE TEMP. (max.)		100℃				
EMC	EMI CONDUCTION & RADIATION		Compliance to EN55015, FCC part 15 class B				
	EMS IMMUNITY		Compliance to EN61000-4-2,3,4,6,8, light industry level, criteria A				
OTHERS	MTBF		2000Khrs min. MIL-HDBK-217F (25℃)				
	DIMENSION		22.6*9.9*8.9mm or 0.89"*0.39"*0.33" inch (L*W*H)				
	WEIGHT		LDD-L:4g ; LDD-LW:7.3g				
	POTTING MATERIAL		Expoxy(UL94-V0)				
NOTE	1.All parameters are specified at normal input(24VDC), rated load, 25℃ 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.						

■ Mechanical Specification

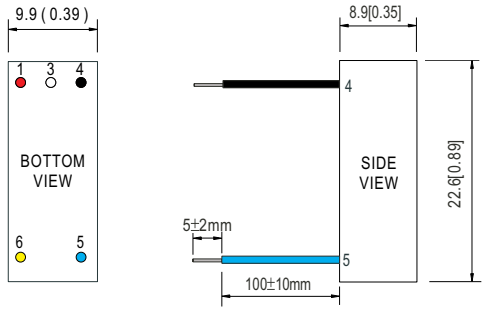
Blank type(LDD – __L):

Unit: mm (inch)



NOTE:Pin size tolerance 0.60 ϕ ±0.05mm

W type(LDD – __LW):

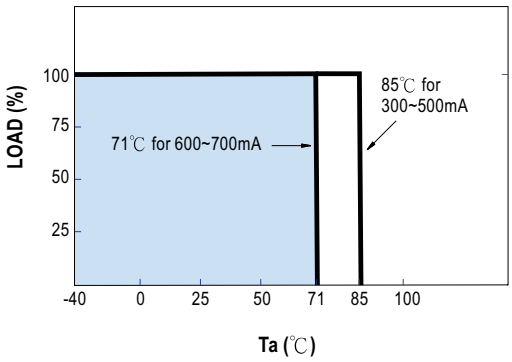


■ Pin Configuration

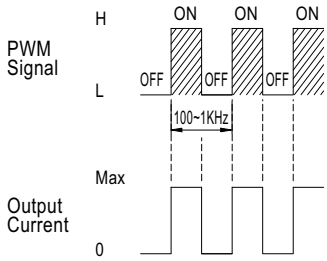
Pin No.	Output	Comment
1	+Vin	DC Supply
3	PWM DIM	ON/OFF and PWM Dimming (Leave open if not used)
4	-Vin	Don't connect to -Vout
5	-Vout	LED - Connection
6	+Vout	LED + Connection

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

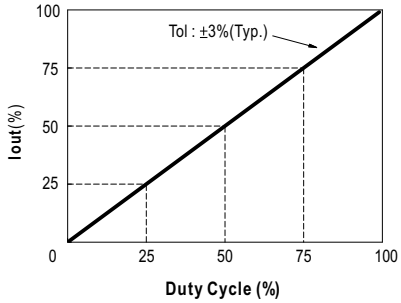
■ Derating Curve



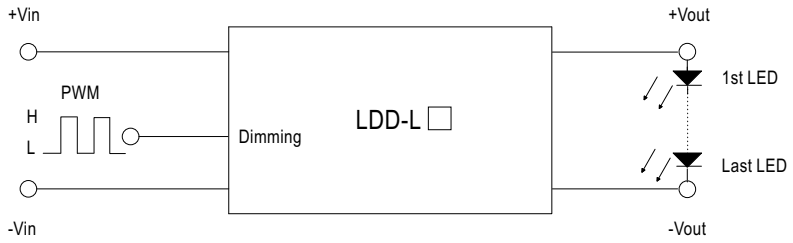
■ PWM Dimming Control



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



■ Standard Application



H: >3.5~8VDC or open circuit

L: <0.5VDC or short

■ Efficiency VS Output Voltage(Number of LEDs)

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

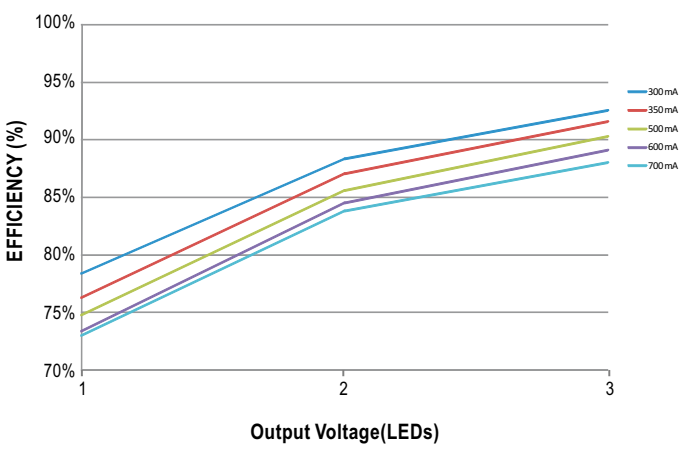


Fig-2 **24VDC input, 1~7 LEDs(Vf=3V)**

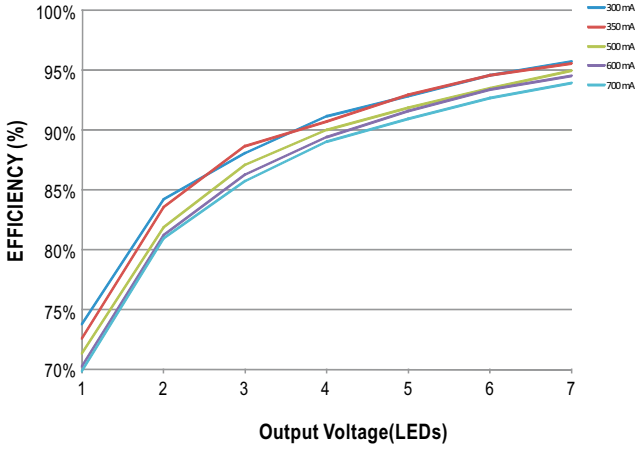


Fig-3 **36VDC input, 1~10 LEDs(Vf=3V)**