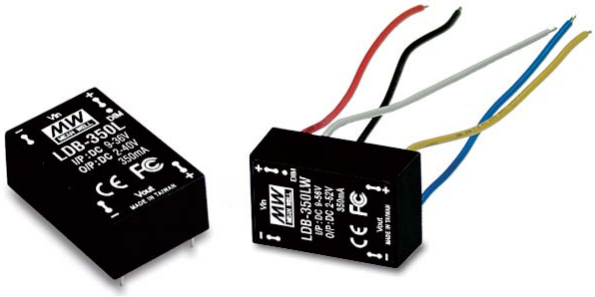
DC-DC Constant Current Buck-Boost LED driver

LDB-L series



Features :

- DC/DC buck-boost converter
- Constant current output: 300mA to 600mA
- Wide input voltage: 9 ~ 36VDC
- Wide output LED string voltage: 2 ~ 40VDC
- High efficiency up to 91%
- 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

LDB-350L□W Blank : pin style
W : wire style

SPECIFICATION

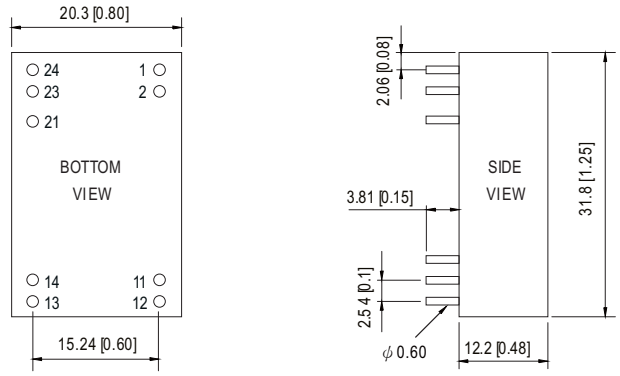
ORDER NO.				LDB-300L□	LDB-350L□	LDB-500L□	LDB-600L□
OUTPUT	CURRENT RANGE			300mA	350mA	500mA	600mA
	VOLTAGE RANGE			2 ~ 40VDC	2 ~ 40VDC	2 ~ 32VDC	2 ~ 30VDC
	CURRENT ACCURACY (Typ.)			±5%			
	RIPPLE & NOISE(max.) Note.2			150mVp-p	150mVp-p	150mVp-p	200mVp-p
	SWITCHING FREQENCY			350KHz			
	EXTERNAL CAPACITANCE LOAD (max.)			10uF			
	NO LOAD OUTPUT VOLTAGE			75VDC			
INPUT	VOLTAGE RANGE			9 ~ 36VDC	9 ~ 36VDC	9 ~ 30VDC	9 ~ 28VDC
	EFFICIENCY (max.)		12VDC	89%	89%	89%	87%
			24VDC	90%	90%	91%	91%
	DC CURRENT	Full load	12VDC	1070mA	1120mA	1235mA	1610mA
			24VDC	530mA	610mA	710mA	910mA
		No load		10mA			
	FILTER			Capacitor			
PWM DIMMING & ON/OFF CONTROL	REMOTE ON/OFF			Leave open if not use			
				Power ON with dimming: DIM ~ -Vin >2 ~ 10VDC or open circuit			
				Power OFF : DIM ~ -Vin < 0.5VDC or short			
	PWM FREQUENCY			100 ~ 1KHz			
	MAX. PWM SIGNAL CURENT			1mA			
PROTECTION	SHORT CIRCUIT			Regulated at rated output current			
				Protection type: Can be continued, recovers automatically after fault condition is removed			
	OVER TEMPERATURE			Tj 145℃ typically(IC1) detect on main control IC			
				Protection type : Shut down, recovers automatically after temperature goes down			
ENVIRONMENT	WORKING TEMP.			-40 ~ + 71℃(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.)			110℃			
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℃)			
	DIMENSION			31.8*20.3*12.2mm or 1.25"*0.8"*0.48" inch (L*W*H)			
	WEIGHT			LDB-L:15.6g ; LDB-LW:18g			
	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.The output of LDB-L should not be connected to the input of the same unit or output from other sources.

Mechanical Specification

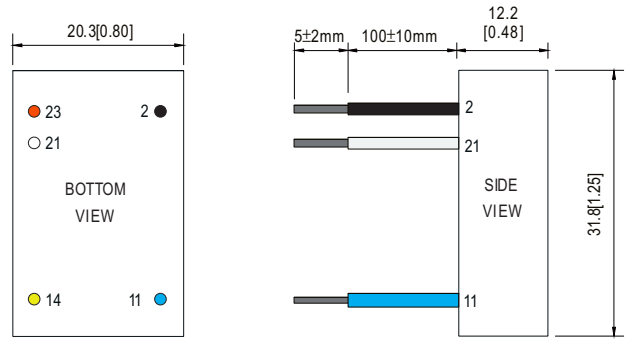
Blank type(LDB－_L):

Unit: mm (inch)



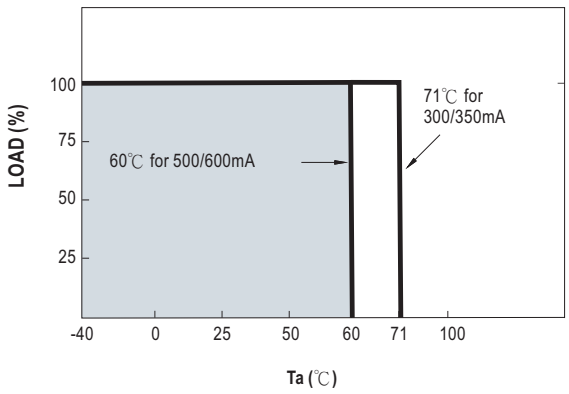
NOTE: Pin tolerance ±0.05mm

W type(LDB－_LW):



NOTE: All wires UL3385 22AWG

Derating Curve

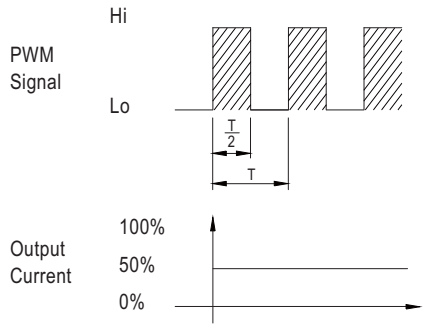


Pin Configuration

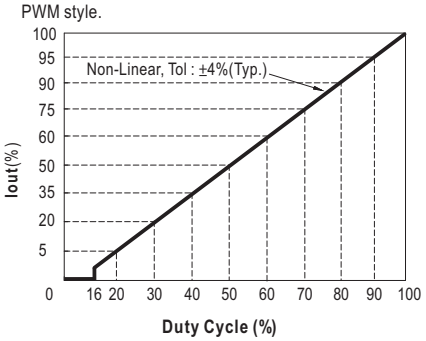
Pin No.		Comment
1,2	-Vin	Don't connect to -Vout
11,12	-Vout	LED - Connection
13,14	+Vout	LED + Connection
21	PWM DIM	ON/OFF and PWM Dimming (Leave open if not used)
23,24	+Vin	DC Supply

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

■ PWM Dimming Control

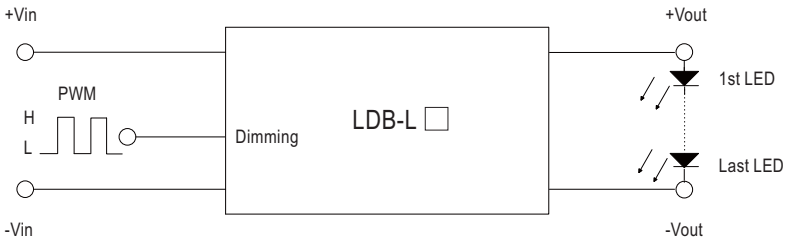


◎ During PWM dimming operation, the output current will change to PWM style.



Power OFF : Duty cycle 0 ~ 15%
Power ON : Duty cycle 16 ~ 100%

■ Standard Application



H: >2~10VDC or open circuit

L: <0.5VDC or short

■ Efficiency VS Output Voltage(Number of LEDs)

Fig-1 LDB-300L□

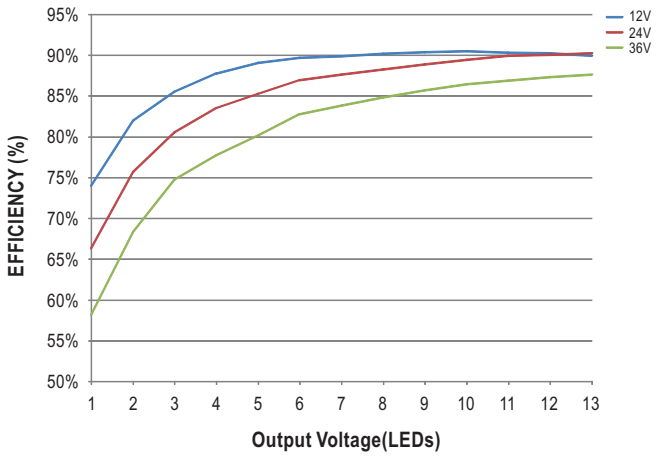


Fig-2 LDB-350L□

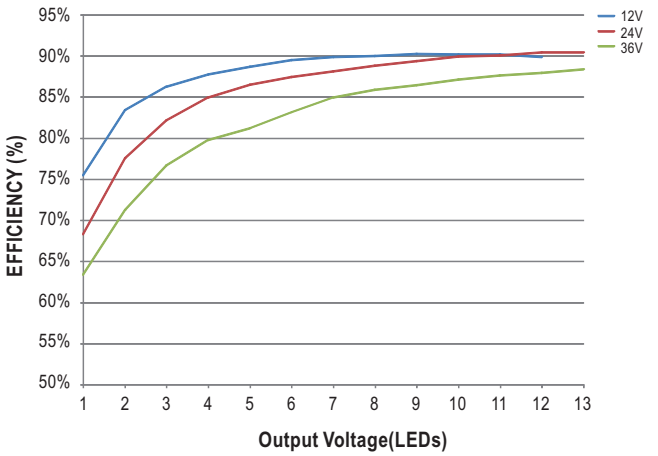


Fig-3 LDB-500L□

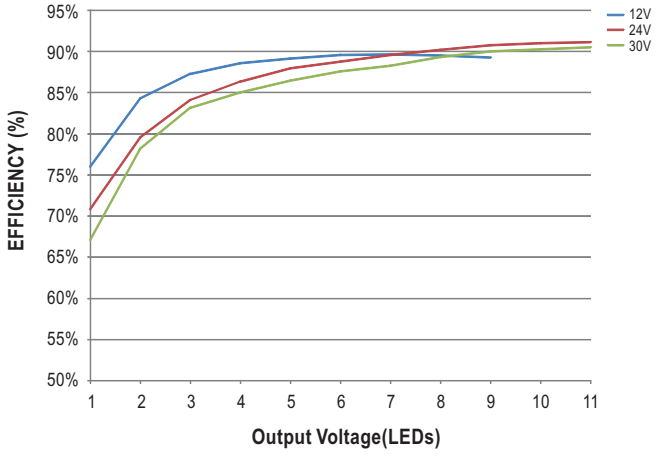
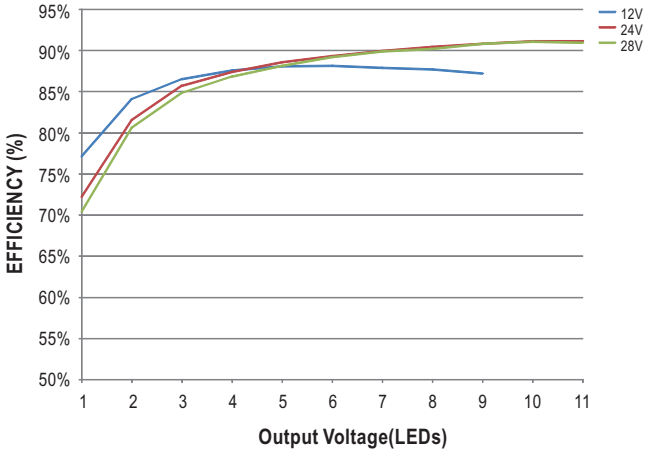



Fig-4 LDB-600L□