

■ 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  Blank : pin style  
 W : wire style

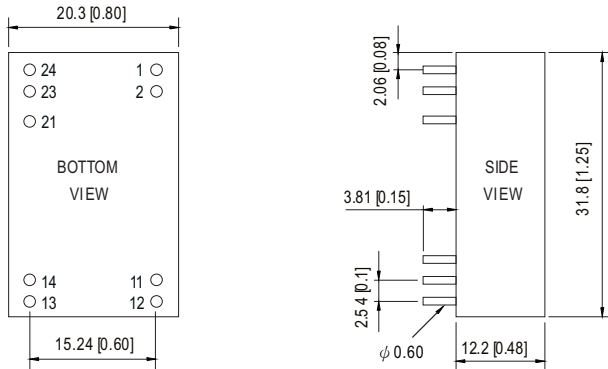
**SPECIFICATION**

| ORDER NO.                    |  | LDB-300L <input type="checkbox"/> | LDB-350L <input type="checkbox"/>  | LDB-500L <input type="checkbox"/> | LDB-600L <input type="checkbox"/> |           |
|------------------------------|--|-----------------------------------|--|-----------------------------------|-----------------------------------|-----------|
| 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 FREQUENCY  | 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    |
|                              |  | No load                           | 24VDC 530mA  | 610mA                             | 710mA                             | 910mA     |
| FILTER                       |  | Capacitor                         |  |                                   |                                   |           |
| PWM DIMMING & ON/OFF CONTROL | REMOTE ON/OFF  |                                   | Leave open if not use<br>Power ON with dimming: DIM ~ -Vin >2 ~ 10VDC or open circuit<br>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<br>Protection type: Can be continued, recovers automatically after fault condition is removed      |                                   |                                   |           |
|                              | OVER TEMPERATURE   |                                   | Tj 145°C typically(IC1) detect on main control IC<br>Protection type : Shut down, recovers automatically after temperature goes down |                                   |                                   |           |
| ENVIRONMENT                  | WORKING TEMP.  |                                   | -40 ~ + 71°C (Refer to derating curve)   |                                   |                                   |           |
|                              | WORKING HUMIDITY   |                                   | 20% ~ 90% RH non-condensing  |                                   |                                   |           |
|                              | 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.)  |  | 110°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)  |                                   |                                   |           |
|                              | WEIGHT   |                                   | LDB-L:15.6g ; LDB-LW:18g   |                                   |                                   |           |
|                              | POTTING MATERIAL   |                                   | Expoxy(UL94-V0)  |                                   |                                   |           |
| NOTE                         | <p>1.All parameters are specified at normal input(24VDC), rated load, 25°C 70% RH ambient.<br/>                 2.Ripple &amp; noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1uf capacitor.<br/>                 3.The output of LDB-L should not be connected to the input of the same unit or output from other sources.</p> |                                   |  |                                   |                                   |           |

**Mechanical Specification**

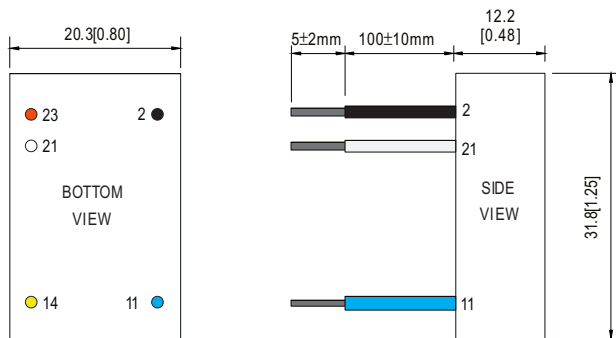
Blank type(LDB – \_L):

Unit: mm (inch)



NOTE: Pin tolerance  $\pm$ 0.05mm

W type(LDB – \_LW):



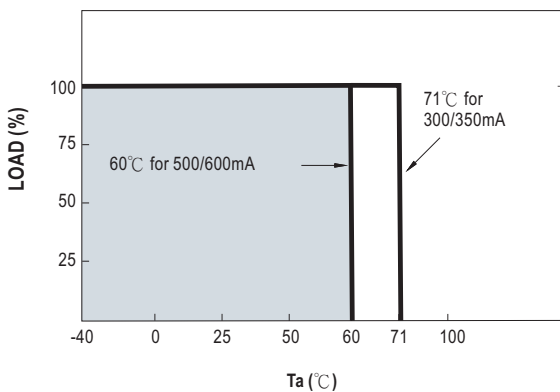
NOTE: All wires UL3385 22AWG

**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                                       |

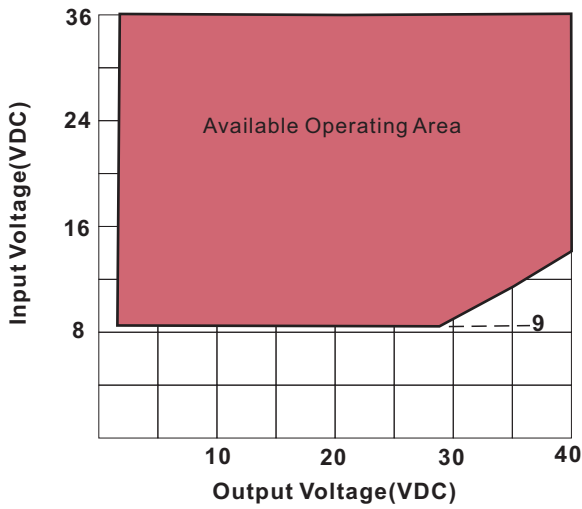
| Pin No. |                 | Comment   |
|---------|-----------------|---|
| 2       | -Vin (Black)    | Don't connect to -Vout                          |
| 11      | -Vout (Blue)    | LED - Connection                                |
| 14      | +Vout (Yellow)  | LED + Connection                  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

**Derating Curve**



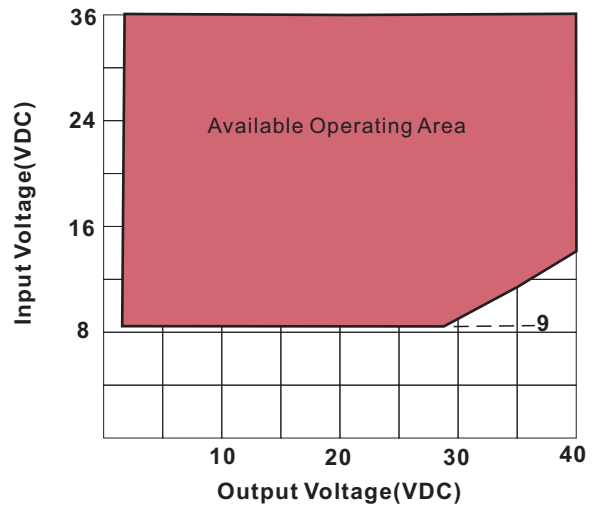
■ Safe Operating Area

**OUTPUT CURRENT 300mA**



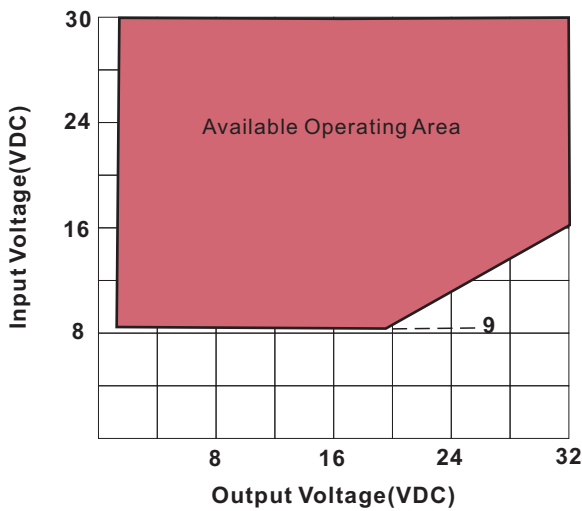
V<sub>in</sub> 9V up to V<sub>out</sub>=27V  
 V<sub>in</sub> 12V up to V<sub>out</sub>=36V

**OUTPUT CURRENT 350mA**



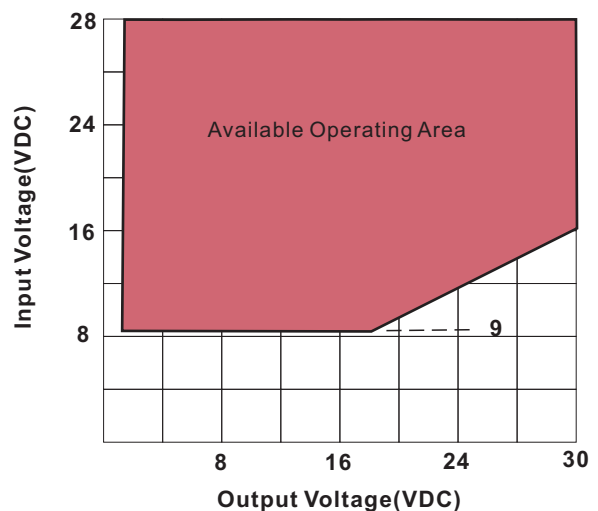
V<sub>in</sub> 9V up to V<sub>out</sub>=27V  
 V<sub>in</sub> 12V up to V<sub>out</sub>=36V

**OUTPUT CURRENT 500mA**



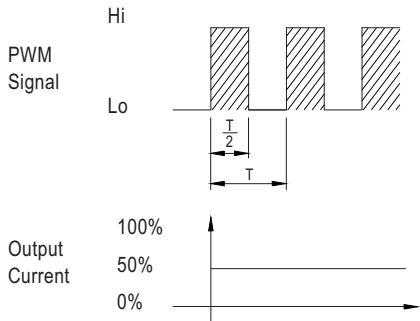
V<sub>in</sub> 9V up to V<sub>out</sub>=20V  
 V<sub>in</sub> 12V up to V<sub>out</sub>=24V  
 V<sub>in</sub> 16V up to V<sub>out</sub>=32V

**OUTPUT CURRENT 600mA**

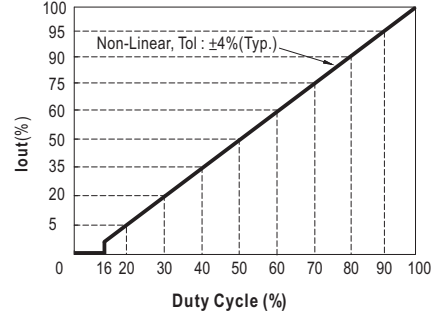


V<sub>in</sub> 9V up to V<sub>out</sub>=18V  
 V<sub>in</sub> 12V up to V<sub>out</sub>=24V

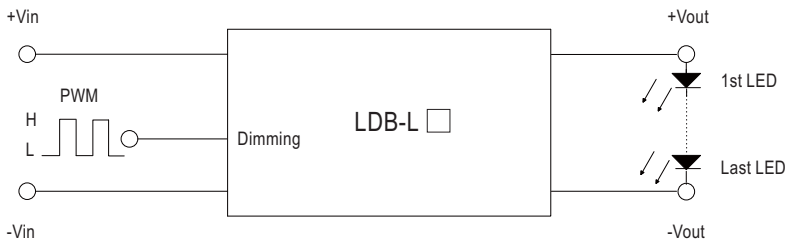
### ■ PWM Dimming Control



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



### ■ Standard Application



H: >2~10VDC or open circuit  
L: <0.5VDC or short

### ■ Efficiency VS Output Voltage (Number of LEDs)

