



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

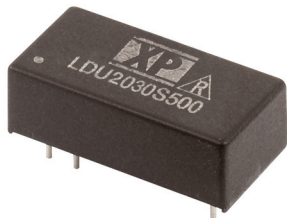
Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



LDU20 Series



- Constant Current Output
- LED Drive Current up to 700 mA
- LED Strings from 2 V to 28 V
- PWM & Analog Dimming Control
- High Efficiency – up to 95%
- Open or Short Circuit LED Protection
- 3 Year Warranty

Specification

Input

Input Voltage	• 7-30 VDC
Input Filter	• Capacitor
Input Surge	• 40 VDC for 0.5 s

Output

Output Voltage	• See tables (V_{in} must be at least 2 V greater than V_{out})
Output Current	• See tables
Output Current Trim	• 25-100%
Output Current Accuracy	• ± 10
Ripple & Noise	• 450 mV pk-pk max, measured with 20 MHz bandwidth
Short Circuit Protection	• Current is limited to the rated output
Temperature Coefficient	• $\pm 0.05\%/^{\circ}\text{C}$ max
Remote On/Off	• On = 0.3-1.25 V or open circuit Off = ≤ 0.15 V (applied to control pin) Quiescent input current is 25 μA max,
Remote On/Off Signal Current	• 1 mA max

Dimming

PWM	
Output Current Range	• 25% to 100%
Operating Frequency	• 1 kHz max
On Time	• 200 ns min
Off Time	• 200 ns min
Amplitude	• 1.25 V max

DC Voltage Control

Output Current Range	• 25% to 100%
Control Input	• 0.3 to 1.25 V max

Variable Resistor

Output Current Range	• 25% to 100%
----------------------	---------------

General

Efficiency	• See tables
Switching Frequency	• 70-450 kHz variable
MTBF	• > 1.6 Mhrs to MIL-HDBK-217F at 25 $^{\circ}\text{C}$, GB

Environmental

Operating Temperature	• -40 $^{\circ}\text{C}$ to +70 $^{\circ}\text{C}$
Storage Temperature	• -40 $^{\circ}\text{C}$ to +125 $^{\circ}\text{C}$
Humidity	• Up to 95%, non-condensing
Thermal Impedance	• 40 $^{\circ}\text{C}/\text{W}$

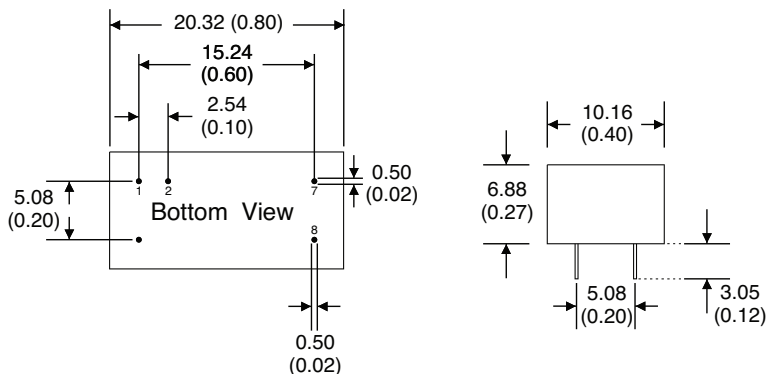
EMC

Emissions	• EN55022 class B conducted & radiated with external components - see application notes
ESD Immunity	• EN61000-4-2, level 2 Perf Criteria A
Radiated Immunity	• EN61000-4-3, level 2 Perf Criteria A
EFT/Burst	• EN61000-4-4, level 2 Perf Criteria A
Surge	• EN61000-4-5, level 2 Perf Criteria A
Conducted Immunity	• EN61000-4-6, level 2 Perf Criteria A

Models and Ratings

Output Power	Input Voltage Range	Output Voltage	Output Current	Efficiency	Model Number
14 W	7-30 V	2-28 V	500 mA	95%	LDU2030S500
17 W	7-30 V	2-28 V	600 mA	95%	LDU2030S600
20 W	7-30 V	2-28 V	700 mA	95%	LDU2030S700

Mechanical Details



Pin Connections		
1	-V Input	-DC supply
2	Control	PWM/ON/OFF or not used
7	-V Output	LED cathode connection
8	+V Output	LED anode connection
14	+V Input	+DC supply

Note: Do not connect pin 1 (-Vin) to pin 7 (-Vout)

Notes

1. All dimensions are in inches (mm)
2. Weight: 0.006 lbs (2.6 g) approx.
3. Pin diameter: 0.02±0.002 (0.5±0.05)
4. Pin pitch tolerance: ±0.014 (±0.35)
5. Case tolerance: ±0.02 (±0.5)

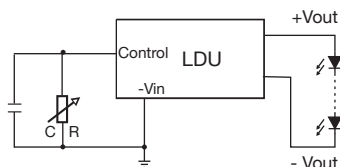
Application Notes

Output Current Adjustment by Variable Resistor

By connecting a variable resistor between Control and GND, simple dimming can be achieved. Capacitor C is optional for HF noise rejection, recommended value is 0.22 μF.

The output current can be determined using the equation: $I_{out} = \frac{\text{Rated Max } I \times R}{(R + 200 \text{ k})}$

Where the value of R is between 0 and 2 MΩ, the maximum adjustment range of output current is 25% to 90% (For Vin-Vout < 20 VDC)



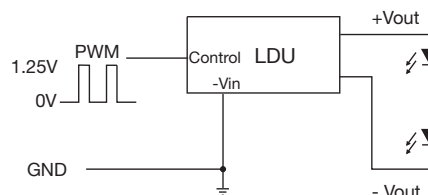
Shorting out the Control pin to GND will turn the output off.

Output Current Adjustment by PWM

A Pulse Width Modulated (PWM) signal with duty cycle DPWM can be applied to the control pin.

The output current can be determined using the equation: $I_{out} = \text{Rated Max } I \times D_{pwm}$

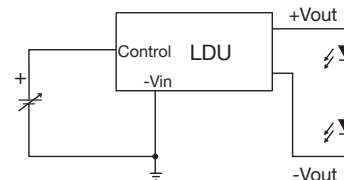
D_{pwm} = PWM duty cycle



Output Current Adjustment by DC Voltage

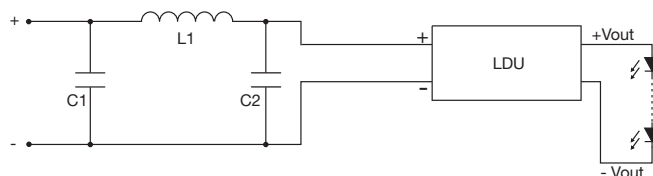
Control Voltage Range: 0.3 V to 1.25 VDC

The output current is given by: $I_{out \text{ nom}} = \text{Rated Max } I \times \frac{\text{Control Voltage}}{1.25}$



A Control Voltage lower than 0.15 V will turn the output off

Input Filter to meet Class B Conducted Emissions



C1	10 μF
C2	47 μF
L1	68 μH