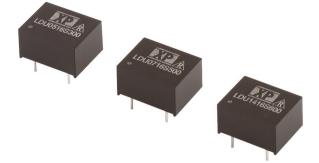
LDU05/07/14 Series



- Constant Current Output
- LED Drive Current up to 1000 mA
- LED Strings from 2 V to 14 V
- PWM & Analog Dimming Control
- High Efficiency up to 93%
- Open or Short Circuit LED Protection
- 3 Year Warranty

Specification

Input

Input Voltage Input Filter Input Surge

- 7-16 VDC
- Capacitor
- 20 VDC for 0.5 s

Output

Output Voltage

See tables (Vin must be at least 2 V greater than Vout)

Output Current Output Current Trim

• 25-100% **Output Current**

Accuracy Ripple & Noise See tables

· See tables,

See tables

Temperature

Coefficient

measured with 20 MHz bandwidth Short Circuit Protection • Current is limited to the rated output

• ±0.03%/°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 • 1 mA max Current

• 25% to 100%

• 1 kHz max

• 200 ns min

Dimming

PWM

Output Current Range Operating Frequency

On Time

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

Switching Frequency

· See tables

 LDU05: 60-300 kHz variable LDU07: 120-350 kHz variable LDU14: 90-400 kHz variable

MTBF

• >3.3 MHrs to MIL-HDBK-217F at 25 °C, GB

Environmental

Operating Temperature •

-40 °C to +85 °C except LDU14 1000 mA unit: -40 °C to +70 °C,

Storage Temperature

Humidity

Thermal Impedance

-40 °C to +125 °C

• Up to 95%, non-condensing

• 35 °C/W model dependant

EMC

Emissions

• EN55022 class B conducted & radiated with external components - see application notes

ESD Immunity

Radiated Immunity

EFT/Burst Surge

Conducted Immunity

• EN61000-4-2, level 2 Perf Criteria A

• EN61000-4-3, level 2 Perf Criteria A

• EN61000-4-4, level 2 Perf Criteria A

• EN61000-4-5, level 2 Perf Criteria A

• EN61000-4-6, level 2 Perf Criteria A

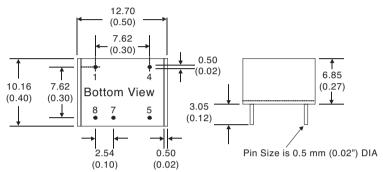


With Dimming Control

Models and Ratings

Output Power	Input Voltage Range	Output Voltage	Output Ripple & Noise	Output Current	Output Current Accuracy	Efficiency	Model Number
4.2 W	7-16 V	2-14 V	120 mV	300 mA	±5%	93%	LDU0516S300
4.9 W	7-16 V	2-14 V	150 mV	350 mA	±6%	93%	LDU0516S350
7.0 W	7-16 V	2-14 V	200 mV	500 mA	±7%	93%	LDU0716S500
8.4 W	7-16 V	2-14 V	200 mV	600 mA	±7%	93%	LDU1416S600
9.8 W	7-16 V	2-14 V	250 mV	700 mA	±7%	93%	LDU1416S700
14.0 W	7-16 V	2-14 V	250 mV	1000 mA	±8%	93%	LDU1416S1000

Mechanical Details



	Pin Connections					
1	+V Input	+DC supply				
4	+V Output	LED anode connection				
5	-V Output	LED cathode connection				
7	V Adj	Dimming Control				
8	-V Input	-DC supply				

Notes

- 1. All dimensions are in inches (mm)
- 2. Weight: 0.003 lbs (1.8 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)

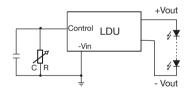
Application Notes

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

Rated Max I x R The output current can be determined using the equation: lout =

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

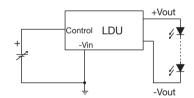


Output Current Adjustment by DC Voltage

Control Voltage Range: 0.3 V to 1.25 VDC

The output current is given by: lout nom = Rated Max I x Control Voltage

1.25



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

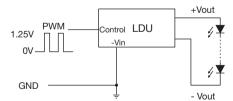
Shorting out the Control pin to GND will turn the output off.

Output Current Adjustment by PWM

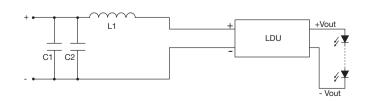
A Pulse Width Modulated (PWM) signal with duty cycle DPWM can be applied to the control pin.

The output current can be determined using the equation : lout = Rated Max I x Dpwm

Dpwm = PWM duty cycle



Input Filter to meet Class B Conducted Emissions



C2	4.7 μF	
L1	68 µH	

