

# PLED-S-xxxLF



## LED-SERIES

Rev.01-2009

- ✓ DIP14 Package
- ✓ **Step-Down Converter**
- ✓ **Constant Current**
- ✓ **High Efficiency**
- ✓ **Dimming Function**
- ✓ **Remote Control**

The PLED-S-xxxLF is a high efficiency step-down converter optimized to drive high current LEDs. The control algorithm allows highly efficient and accurate LED current regulation. The device operates from 7VDC up to 30VDC and provides an externally adjustable output current and output power up to 8 Watts. Compact DIP14 size allows designers to integrate this driver together with LED module. UL-94V0 grade molded case with high grade filling material provide excellent fire proof characters. Suitable also in mobile lighting system.

All specifications typical at Ta=25°C, nominal input voltage and full load unless otherwise specified

### Input Specifications

Voltage Range	7 – 30 VDC wide input
Input Filter	Capacitor

### Output Specifications

Voltage (Vin: 30V)	2 – 27 VDC
Current (Vin-Vout > 1.5V to 3V)	See table (± 5% Accuracy)
Short Circuit Protection	Reg. at Rated Output Current
Ripple and Noise (20MHz limited)	200 mV p-p, max.

### General Specifications

Efficiency	See Table, typ.
Operating Frequency	45 kHz – 370 kHz
Capacitive Load	100 uF, max.
Humidity	95% rel H
Reliability Calculated MTBF (MIL-HDBK-217F)	> 0.5 Mhrs

### Physical Specifications

Case Material	Black Plastic (with Non-Conductive Base)
Potting Material	Epoxy (UL94V-0 rated)
Weight	~ 2.6g, typ.

### Environment Specifications

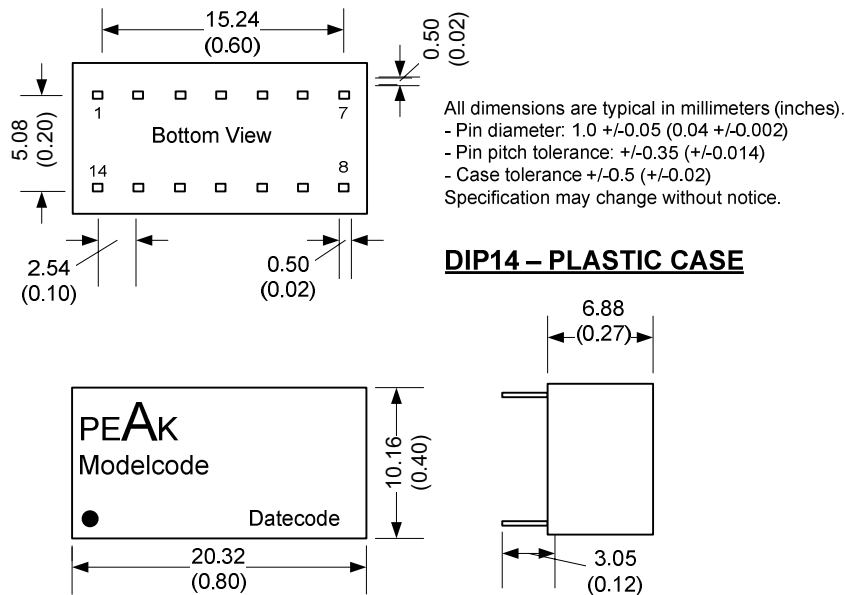
Operating Temperature	-40 to +85 °C (Free Air Convection)
Maximum Case Temperature	100 °C
Storage Temperature	-40 to +125 °C
Cooling	Free Air Convection
Thermal Inpedance (Free Air Convection)	55 °C / W
Temperature Coefficient	± 0.03%/°C, max.
RoHS conform	Soldering 260 °C, 10sec. max.

# Selection Guide

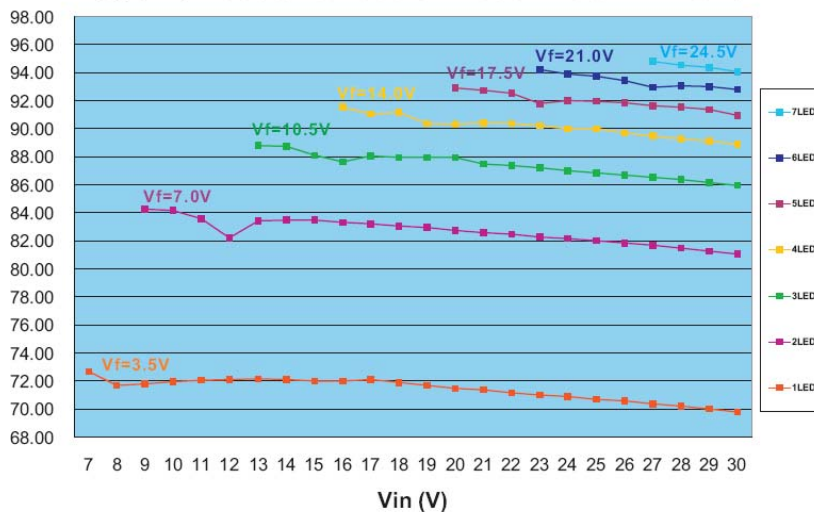
Order #	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (%)
PLED-S-300LF	7-30	2-27	300	95
PLED-S-350LF	7-30	2-27	350	95

If you need other specifications, please ask.

## Package / Pinning / Derating



Efficiency (%) ( Electronic Load CV Mode Vf 3.5V ~ 24.5V )



PIN CONNECTIONS	
#	SINGLE
1	- Vin
2	PWM/ON/OFF
7	- LED
8	+ LED
14	+ Vin
Others	Omitted

# App Notes

## PWM DIMMING AND REMOTE ON/OFF CONTROL:

( Leave it open if not used.)

DC ON: Open or  $0.3V < V_{adj} < 1.25V$

DC OFF:  $V_{adj} < 0.2V$  (Standby)

DC OFF:  $V_{adj} < 0.15V$  (Shutdown)

Max. Remote Pin Drive Current: **1 mA**

Max. Quiescent Input Current in Shutdown Mode ( $V_{in}=30V$ ,  $V_{adj}<0.15V$ ) **250 uA**

Recommended max. Operation Frequency: **1 kHz**

Min. Switch ON / OFF Time: **200 ns**

## ANALOG DIMMING CONTROL:

Input Voltage Range: 0.3V to 1.25V

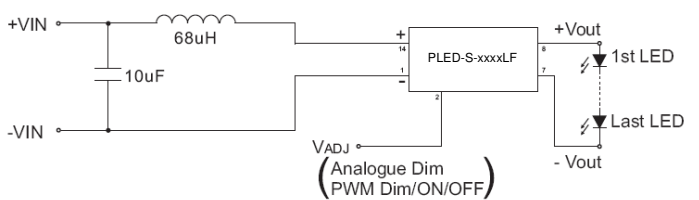
Control Voltage Limits

ON: 0.2V – 0.3V

OFF: 0.15V – 0.25V

Max. Analog Pin Drive Current ( $V_{adj} = 1.25V$ ): **0.2 mA**

Class B Filter Suggestion:



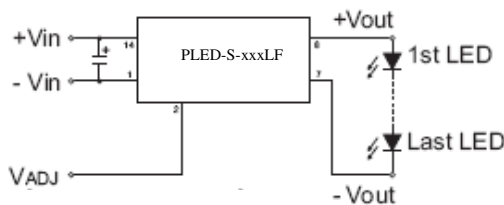
## Note:

1.Note about the polarity of input power , reversed power supply may damage the circuit.

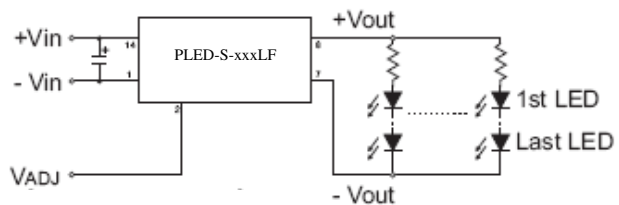
2.DO NOT operate the driver over 8W output.

3.Leave the pin  $V_{ADJ}$  opened while not in used , Grounded can shut the driver off and connect to  $V_{in}$  Power may burn the circuit.

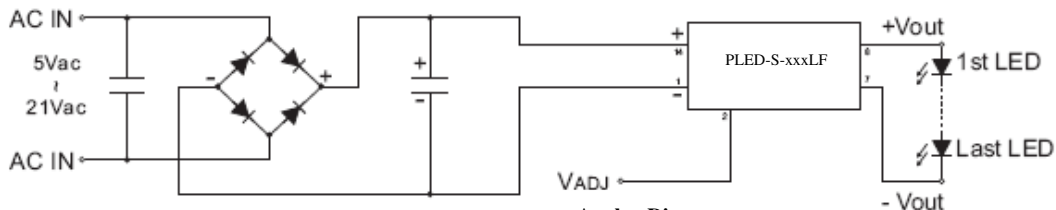
## Application Circuit Examples:



- Analog Dim  
- PWM DIM/ON/OFF



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- PWM DIM/ON/OFF

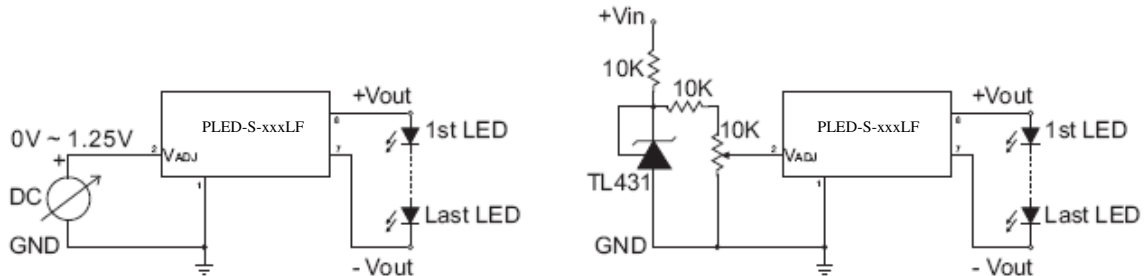


- Analog Dim  
- PWM DIM/ON/OFF

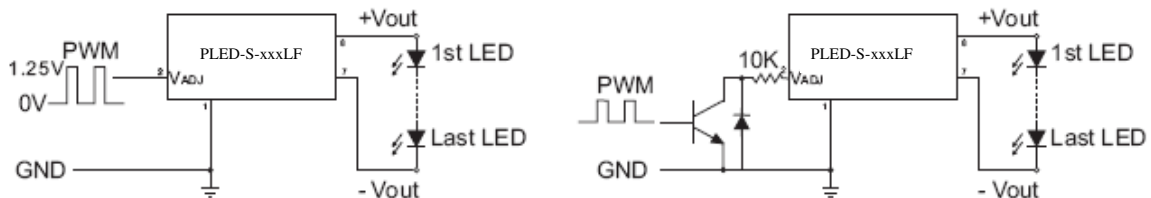
# App Notes

## Application Circuit Examples:

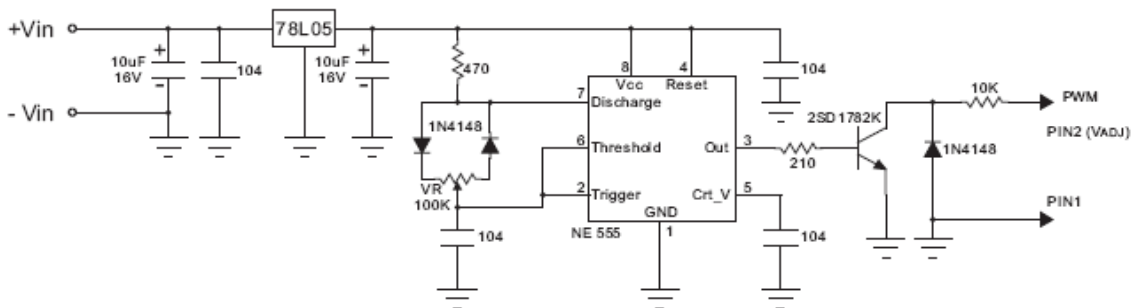
### Output Current Adjustment By External DC Control Voltage



### Output Current Adjustment By PWM Control



### Output Current Adjustment By PWM Control (Dimming)



### Output Current Adjustment By PWM Control (Flash)

