50Watts Single Output LED Driver

Qualtek Electronics Corporation

PLC-050 D Series

Features:

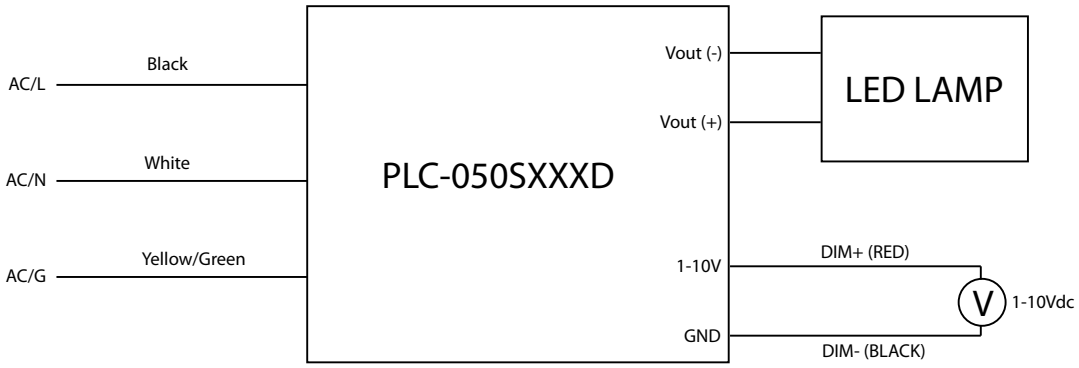
- Constant Current Design
- Dimming Control
- Universal AC input/ Full Range
- Built-in Active PFC function, PF 0.98 Typical
- High Efficiency (Up to 89%)
- Output Protections: OVP/SCP/OTP
- Lightning Protection
- Class 2 Power Unit (See Note)
- Waterproof (IP67)
- 5 Year Warranty

c UL us RoHS Compliant

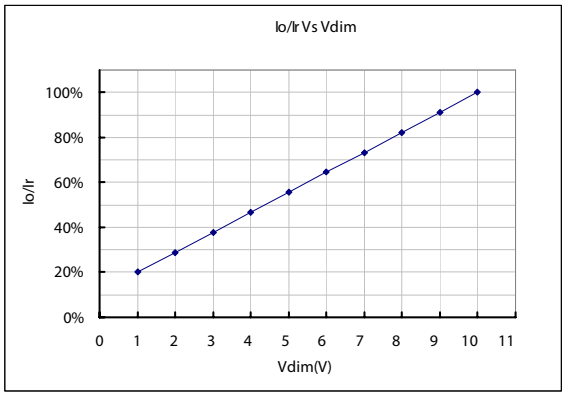
Model		PLC-050S035D	PLC-050S045D	PLC-050S070D	PLC-050S110D	PLC-050S140D	PLC-050S175D	PLC-050S210D	PLC-050S280D	PLC-050S330D	PLC-050S420D
Output Characteristics											
Rated Current See Note		0.35A (1)	0.45A (1)	0.70A (1)	1.10A (2)	1.40A (3)	1.75A (3)	2.10A (3)	2.80A (3)	3.30A (1)	4.20A (1)
Voltage Range		47~142V	37~110V	24~72V	16~48V	12~36V	10~29V	8~24V	6~18V	5~15V	4~12V
Ripple and Noise (max) Note 1		±10% Vo									
Voltage Accuracy		±5% Vo									
Line Regulation		±1% Vo									
Load Regulation		±3% Vo									
Rise Time		20mS Max @ Rated Load									
Hold-up Time (Typ.)		8.5mS Min (110VAC input, full load), 10mS Min (220VAC input, full load)									
Input Characteristics											
Voltage Range		90VAC~305VAC									
Frequency Range		47Hz-63Hz									
Power Factor (Typical)	110VAC	>0.98	>0.98	>0.98	>0.98	>0.98	>0.98	>0.98	>0.98	>0.98	>0.98
	220VAC	>0.92	>0.92	>0.92	>0.92	>0.92	>0.92	>0.92	>0.92	>0.92	>0.92
Efficiency (Typical)		89%	88%	87%	87%	87%	87%	86%	84%	84%	83%
AC Current (max)		0.8A @ 100-277VAC Input Full Load									
Inrush Current (max)		65A @ 230VAC, 25°C									
Leakage Current		0.5mA max @ 277VAC									
Protection											
Over Temperature (OTP)		110°C (Temperature of internal components); shut down, auto recover after the temperature decreases									
Over Voltage (OVP) Note 2		1.2~1.4Vo									
Short Circuit (SCP)		Long-term mode, auto recovery									
Environmental Characteristics											
Operating Temperature		-35°C~70°C									
Operating Relative Humidity		10% RH to 100% RH									
Storage Temperature		-40°C~85°C, 5% to 100% RH non-condensing									
Vibration		10 to 300Hz sweep at constant acceleration of 1.0G(Breadth: 3.5mm) for 1 Hour for each of the perpendicular axes X, Y, Z									
Waterproof Rating		IP67									
Safety Standards		UL8750, Compliance to UL1012 UL935, IEC61347									
Withstand Voltage		L/N-GND: 4kV, L-N: 2kV									
Isolation Resistance		I/P-O/P: >100M Ohms / 500VDC / 25°C / 70% RH									
EMC Emission		Compliance to EN55022(CISPR22) Class B, EN61000-3-2 Class A, EN61000-3-3									
EMC Immunity		Compliance to EN61000-3-2, 3 EN61000-4-2, 3, 4, 5, 6, 8, 11, EN61547									
Characteristics											
Life Time		More than 50,000Hrs (25°C, 80% Load)									
MTBF (MIL-HDBK-217F)		More than 490,000Hrs (25°C, 80% Load)									
Dimension (LxWxH)		199x42.5x34mm									
Note		1. Ripple & Noise: Measured by 20 MHz bandwidth oscilloscope and the output paralleled with a 0.1 uF ceramic capacitor and a 10 uF electrolytic capacitor. 2. Latch Mode: The power supply shall return to normal operation only after the power is turned on again (1) Non-Class 2 output (USR & CNR) (2) Class 2 output (USR); Non-Class 2 output (CNR) (3) Class 2 output (USR & CNR)									

DIMMING CONTROL

The dimmer control may be operated from an input signal of 1 – 10 Vdc.



Implementation: DC Input



Notes:
1. Io is actual output current and Ir is rated current.
2. If the dimming function is not used, please short 10 V output pin (Black) and 1-10 V input pin(Red).
The output current is about 92% Ir when the 1-10V input pin is floating.
3. For the driver to operate properly, the load voltage must be maintained above the minimum voltage threshold (approx. 33% of the max. output voltage for any given model).
4. The dimming voltage can be tuned down to less than 1V, and the output current will be decreased to about 10% Ir; but the connected LEDs may flicker. Keeping dimming voltage greater than 1V is strongly recommended.
5. Do not connect the GND of dimming to the output; otherwise, the LED driver will not work normally.

MECHANICAL SPECIFICATIONS

UNIT: mm