



## 100W Single Output Switching Power Supply

## PLC-100 series



## ■ Features :

- Universal AC input / Full range
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Built-in active PFC function
- UL1310 Class 2 power unit
- Cooling by free air convection
- 100% full load burn-in test
- High reliability
- Suitable for LED lighting and moving sign applications
- Compliance to worldwide safety regulations for lighting
- 2 years warranty



## SPECIFICATION

| MODEL        | 706-6622                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 706-6631                                                                                                                        | 706-6634            | 706-6638       | 706-6647                 | 706-6640              | 706-6644     |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------|--------------------------|-----------------------|--------------|
| OUTPUT       | DC VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 12V                                                                                                                             | 15V                 | 20V            | 24V                      | 36V                   | 48V          |
|              | CONSTANT CURRENT REGION Note 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 8.4 ~ 12V                                                                                                                       | 10.5 ~ 15V          | 14 ~ 20V       | 16.8 ~ 24V               | 18.9 ~ 27V            | 25.2 ~ 36V   |
|              | RATED CURRENT Note 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 5A                                                                                                                              | 5A                  | 4.8A           | 4A                       | 3.55A                 | 2.65A        |
|              | CURRENT RANGE Note 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0 ~ 5A                                                                                                                          | 0 ~ 5A              | 0 ~ 4.8A       | 0 ~ 4A                   | 0 ~ 3.55A             | 0 ~ 2A       |
|              | RATED POWER Note 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 60W                                                                                                                             | 75W                 | 96W            | 96W                      | 95.85W                | 95.4W        |
|              | RIPPLE & NOISE (max.) Note 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 150mVp-p                                                                                                                        | 150mVp-p            | 150mVp-p       | 150mVp-p                 | 150mVp-p              | 200mVp-p     |
|              | VOLTAGE ADJ. RANGE (V <sub>o</sub> ADJ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 10.2 ~ 12V                                                                                                                      | 12.8 ~ 15V          | 17 ~ 20V       | 20.4 ~ 24V               | 23 ~ 27V              | 30.6 ~ 36V   |
|              | CURRENT ADJ. RANGE (I <sub>o</sub> ADJ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 3.75 ~ 5A                                                                                                                       | 3.75 ~ 5A           | 3.6 ~ 4.8A     | 3 ~ 4A                   | 2.6 ~ 3.55A           | 2 ~ 2.65A    |
|              | VOLTAGE TOLERANCE Note 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ±3.0%                                                                                                                           | ±3.0%               | ±3.0%          | ±3.0%                    | ±3.0%                 | ±2.0%        |
|              | LINE REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ±1.0%                                                                                                                           |                     |                |                          |                       |              |
| INPUT        | LOAD REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ±2.0%                                                                                                                           |                     |                |                          |                       |              |
|              | SETUP, RISE TIME                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1200ms, 80ms/230VAC                                                                                                             | 1200ms, 80ms/115VAC | at full load   |                          |                       |              |
|              | HOLD UP TIME (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 60ms/230VAC                                                                                                                     | 30ms/115VAC         | at full load   |                          |                       |              |
|              | VOLTAGE RANGE Note 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 90 ~ 264VAC                                                                                                                     | 127 ~ 370VDC        |                |                          |                       |              |
|              | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 47 ~ 63Hz                                                                                                                       |                     |                |                          |                       |              |
|              | POWER FACTOR (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | PF>0.95/230VAC                                                                                                                  | PF>0.95/115VAC      | at full load   | PF≥0.9 at 70 ~ 100% load |                       |              |
|              | EFFICIENCY (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 85%                                                                                                                             | 86%                 | 89%            | 88.5%                    | 88%                   | 88%          |
|              | AC CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 12V:0.8A/15VAC                                                                                                                  | 0.4A/230VAC         | 15V:0.9A/15VAC | 0.45A/230VAC             | 20V ~ 48V:1.1A/115VAC | 0.55A/230VAC |
|              | INRUSH CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | COLD START 40A/230VAC                                                                                                           |                     |                |                          |                       |              |
|              | LEAKAGE CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <0.75mA/240VAC                                                                                                                  |                     |                |                          |                       |              |
| PROTECTION   | OVER CURRENT (Typ.) Note 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 95 ~ 102%                                                                                                                       |                     |                |                          |                       |              |
|              | OVER VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 13 ~ 16V                                                                                                                        | 16.5 ~ 20V          | 22 ~ 27V       | 27 ~ 34V                 | 30 ~ 36V              | 39 ~ 48V     |
|              | OVER TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 90°C ±10°C (RTH2)                                                                                                               |                     |                |                          |                       |              |
|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Protection type : Shut down o/p voltage, re-power on to recover                                                                 |                     |                |                          |                       |              |
| ENVIRONMENT  | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | -30 ~ +50°C (Refer to output load derating curve)                                                                               |                     |                |                          |                       |              |
|              | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 20 ~ 95% RH non-condensing                                                                                                      |                     |                |                          |                       |              |
|              | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | -40 ~ +80°C, 10 ~ 95% RH                                                                                                        |                     |                |                          |                       |              |
|              | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ±0.03%/°C (0 ~ 50°C)                                                                                                            |                     |                |                          |                       |              |
|              | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10 ~ 500Hz, 2G 12min/1cycle, period for 72min. each along X, Y, Z axes                                                          |                     |                |                          |                       |              |
| SAFETY & EMC | SAFETY STANDARDS Note 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | UL1310 Class 2, EN61347-1, EN61347-2-13 independent, UL60950-1, TUVEN60950-1, UL879 (listed in UL Sign Components Manual (SAM)) |                     |                |                          |                       |              |
|              | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | I/P-O/P:3.75KVAC I/P-FG:1.88KVAC O/P-FG:0.5KVAC                                                                                 |                     |                |                          |                       |              |
|              | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH                                                                      |                     |                |                          |                       |              |
|              | EMI CONDUCTION & RADIATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Compliance to EN55015, EN55022 (CISPR22) Class B                                                                                |                     |                |                          |                       |              |
|              | HARMONIC CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Compliance to EN61000-3-2, -3, Class C (≥70% load) ; EN61000-3-3                                                                |                     |                |                          |                       |              |
|              | EMS IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11; EN55024, EN61547, EN55024, light industry level, (surge 4KV), criteria A          |                     |                |                          |                       |              |
| OTHERS       | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 297.9Khrs min., MIL-HDBK-217F (25°C)                                                                                            |                     |                |                          |                       |              |
|              | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 200.5*70.5*35mm (L*W*H)                                                                                                         |                     |                |                          |                       |              |
|              | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0.52Kg/25pcs/14Kg/0.65CUFT                                                                                                      |                     |                |                          |                       |              |
| NOTE         | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.<br>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor.<br>3. Tolerance : includes set up tolerance, line regulation and load regulation.<br>4. Constant current operation region is within 70% ~ 100% rated output voltage. This is the suitable operation region for LED related applications, but please confirm special electrical requirements for some specific system design.<br>5. Derating may be needed under low input voltage. Please check the derating curve for more details.<br>6. This is the maximum possible output current and power. Over load protection may be activated slightly below this level to comply with the requirement of UL1310 class 2.<br>7. Safety and EMC design refer to EN60950-1, subject 8750(UL), CNS15233, GB7000.1, FCC part18. |                                                                                                                                 |                     |                |                          |                       |              |



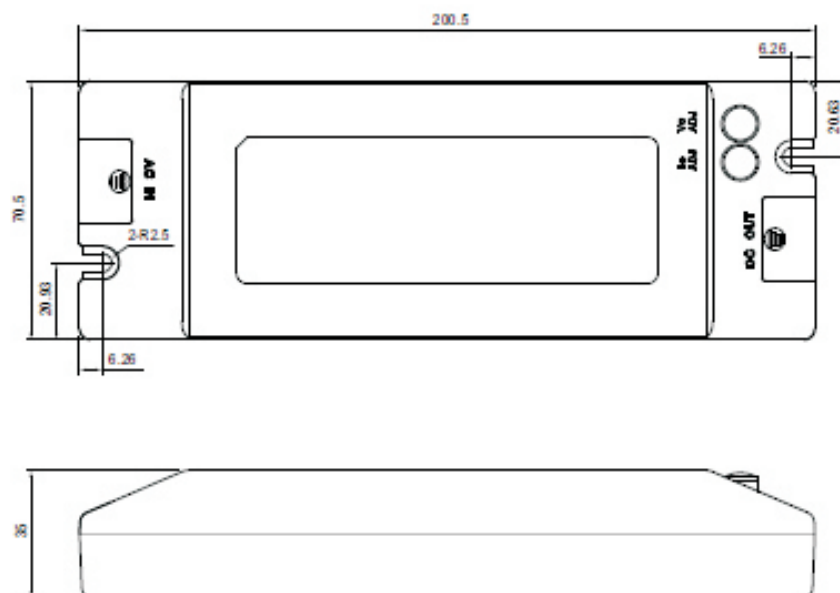
# 100W Single Output Switching Power Supply

## PLC-100 series

### Mechanical Specification

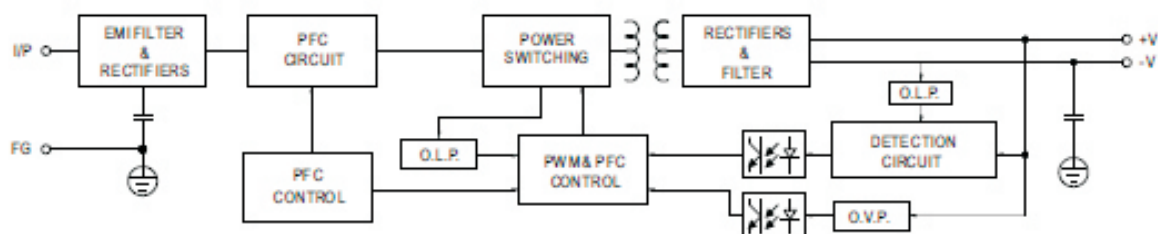
Case No. 981A

Unit:mm

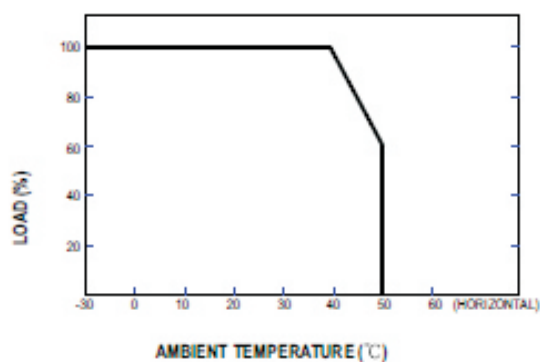


### Block Diagram

Fosc : 100KHz



### Derating Curve



### Static Characteristics

