

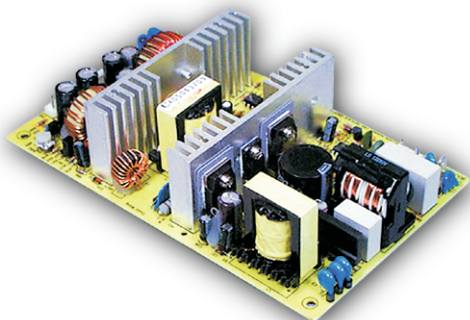
## ■ Features :

- Universal AC input / Full range
- Built-in active PFC function, PF>0.95
- Protections: Short circuit/Over load/Over voltage
- Cooling by free air convection
- 100% full load burn-in test
- Fixed switching frequency at PFC: 67KHz PWM: 134KHz(Optional)
- 2 years warranty



## SPECIFICATION

| MODEL                    |                              | PPQ-1003A   |             |          |          | PPQ-1003B    |             |          |          |
|--------------------------|------------------------------|---|-------------|----------|----------|--------------|-------------|----------|----------|
| OUTPUT                   | OUTPUT NUMBER                | CH1   | CH2         | CH3      | CH4      | CH1          | CH2         | CH3      | CH4      |
|                          | DC VOLTAGE                   | 3.3V  | 5V          | 12V      | -5V      | 3.3V         | 5V          | 12V      | -12V     |
|                          | RATED CURRENT                | 10A   | 10A         | 2A       | 0.3A     | 10A          | 10A         | 2A       | 0.3A     |
|                          | CURRENT RANGE                | 0 ~ 15A   | 2 ~ 15A     | 0.2 ~ 3A | 0 ~ 1A   | 0 ~ 15A      | 2 ~ 15A     | 0.2 ~ 3A | 0 ~ 1A   |
|                          | RATED POWER                  | 108.5W  |             |          |          | 110.6W       |             |          |          |
|                          | RIPPLE & NOISE (max.) Note.2 | 100mVp-p  | 100mVp-p    | 150mVp-p | 100mVp-p | 100mVp-p     | 100mVp-p    | 150mVp-p | 120mVp-p |
|                          | VOLTAGE ADJ. RANGE           | 3.14 ~ 3.63V  | 4.75 ~ 5.5V | -----    | -----    | 3.14 ~ 3.63V | 4.75 ~ 5.5V | -----    | -----    |
|                          | VOLTAGE TOLERANCE Note.3     | ±3.0%   | ±3.0%       | ±6.0%    | ±6.0%    | ±3.0%        | ±3.0%       | ±6.0%    | ±6.0%    |
|                          | LINE REGULATION              | ±1.0%   | ±1.0%       | ±2.0%    | ±1.0%    | ±1.0%        | ±1.0%       | ±2.0%    | ±1.0%    |
|                          | LOAD REGULATION              | ±2.0%   | ±2.0%       | ±6.0%    | ±1.0%    | ±2.0%        | ±2.0%       | ±6.0%    | ±1.0%    |
| INPUT                    | SETUP, RISE TIME             | 800ms, 50ms at full load  |             |          |          |              |             |          |          |
|                          | HOLD TIME (Typ.)             | 18ms at full load   |             |          |          |              |             |          |          |
|                          | VOLTAGE RANGE                | 90 ~ 264VAC 127 ~ 370VDC  |             |          |          |              |             |          |          |
|                          | FREQUENCY RANGE              | 47 ~ 63Hz   |             |          |          |              |             |          |          |
|                          | POWER FACTOR (Typ.)          | PF>0.95/230VAC PF>0.98/115VAC at full load  |             |          |          |              |             |          |          |
|                          | EFFICIENCY (Typ.)            | 72%   |             |          |          |              |             |          |          |
|                          | AC CURRENT (Typ.)            | 1.65A/115VAC 0.85A/230VAC   |             |          |          |              |             |          |          |
|                          | INRUSH CURRENT (Typ.)        | COLD START 40A  |             |          |          |              |             |          |          |
| PROTECTION               | LEAKAGE CURRENT              | <1mA/240VAC   |             |          |          |              |             |          |          |
|                          | OVER LOAD                    | 105% ~ 135% rated output power<br>Protection type : Constant current limiting, recovers automatically after fault condition is removed  |             |          |          |              |             |          |          |
|                          | OVER VOLTAGE                 | CH1: 3.6 ~ 4.3V CH2: 5.75 ~ 6.75V<br>Protection type : Shut down o/p voltage, re-power on to recover  |             |          |          |              |             |          |          |
| ENVIRONMENT              | WORKING TEMP.                | -10 ~ +60°C (Refer to output load derating curve)   |             |          |          |              |             |          |          |
|                          | WORKING HUMIDITY             | 20 ~ 90% RH non-condensing  |             |          |          |              |             |          |          |
|                          | STORAGE TEMP., HUMIDITY      | -20 ~ +85°C, 10 ~ 95% RH  |             |          |          |              |             |          |          |
|                          | TEMP. COEFFICIENT            | ±0.03%/°C (0 ~ 50°C)  |             |          |          |              |             |          |          |
| SAFETY & EMC<br>(Note 4) | VIBRATION                    | 10 ~ 500Hz, 2G 10min./1cycle, Period for 60min.each along X, Y, Z axes  |             |          |          |              |             |          |          |
|                          | SAFETY STANDARDS             | UL60950-1, TUV EN60950-1 Approved   |             |          |          |              |             |          |          |
|                          | WITHSTAND VOLTAGE            | I/P-O/P: 3KVAC I/P-FG: 1.5KVAC O/P-FG: 0.5KVAC  |             |          |          |              |             |          |          |
|                          | ISOLATION RESISTANCE         | I/P-O/P, I/P-FG, O/P-FG: 100M Ohms/500VDC   |             |          |          |              |             |          |          |
|                          | EMI CONDUCTION & RADIATION   | Compliance to EN55022 (CISPR22) Class B   |             |          |          |              |             |          |          |
|                          | HARMONIC CURRENT             | Compliance to EN61000-3-2, -3   |             |          |          |              |             |          |          |
| OTHERS                   | EMS IMMUNITY                 | Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11; ENV50204, EN55024, Light industry level, criteria A   |             |          |          |              |             |          |          |
|                          | MTBF                         | 150.6K hrs min. MIL-HDBK-217F (25°C)  |             |          |          |              |             |          |          |
|                          | DIMENSION                    | 177.8*107.95*38mm (L*W*H)   |             |          |          |              |             |          |          |
| NOTE                     | PACKING                      | 0.62Kg; 24pcs/15.5Kg/1.34CUFT   |             |          |          |              |             |          |          |
|                          | 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. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. |             |          |          |              |             |          |          |



## ■ Features :

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- Protections: Short circuit/Over load/Over voltage
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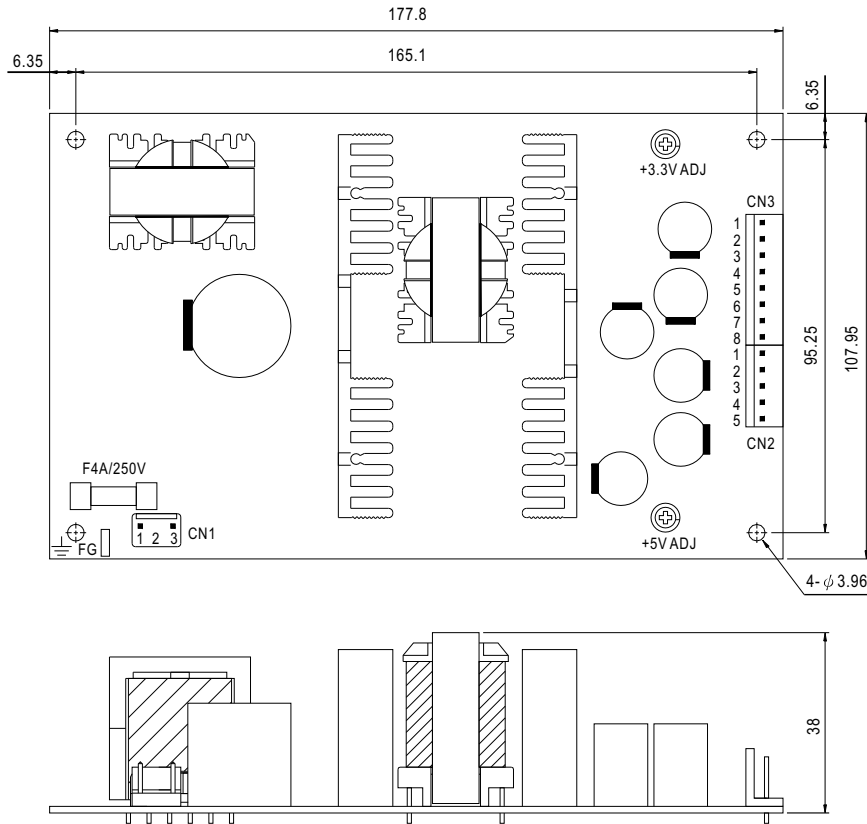


## SPECIFICATION

| MODEL                 |                              | PPQ-1003C   |             |          |          | PPQ-1003D    |             |          |          |
|-----------------------|------------------------------|---|-------------|----------|----------|--------------|-------------|----------|----------|
| OUTPUT                | OUTPUT NUMBER                | CH1   | CH2         | CH3      | CH4      | CH1          | CH2         | CH3      | CH4      |
|                       | DC VOLTAGE                   | 3.3V  | 5V          | 15V      | -15V     | 3.3V         | 5V          | 12V      | 24V      |
|                       | RATED CURRENT                | 10A   | 10A         | 1.5A     | 0.3A     | 10A          | 10A         | 2A       | 0.3A     |
|                       | CURRENT RANGE                | 0 ~ 15A   | 2 ~ 15A     | 0.2 ~ 3A | 0 ~ 1A   | 0 ~ 15A      | 2 ~ 15A     | 0.2 ~ 3A | 0 ~ 1A   |
|                       | RATED POWER                  | 110W  |             |          |          | 114.2W       |             |          |          |
|                       | RIPPLE & NOISE (max.) Note.2 | 100mVp-p  | 100mVp-p    | 180mVp-p | 150mVp-p | 100mVp-p     | 100mVp-p    | 150mVp-p | 150mVp-p |
|                       | VOLTAGE ADJ. RANGE           | 3.14 ~ 3.63V  | 4.75 ~ 5.5V | -----    | -----    | 3.14 ~ 3.63V | 4.75 ~ 5.5V | -----    | -----    |
|                       | VOLTAGE TOLERANCE Note.3     | ±3.0%   | ±3.0%       | +10, -5% | ±6.0%    | ±3.0%        | ±3.0%       | ±6.0%    | ±6.0%    |
|                       | LINE REGULATION              | ±1.0%   | ±1.0%       | ±2.0%    | ±1.0%    | ±1.0%        | ±1.0%       | ±2.0%    | ±1.0%    |
|                       | LOAD REGULATION              | ±2.0%   | ±2.0%       | ±6.0%    | ±1.0%    | ±2.0%        | ±2.0%       | ±6.0%    | ±1.0%    |
| INPUT                 | SETUP, RISE TIME             | 800ms, 50ms at full load  |             |          |          |              |             |          |          |
|                       | HOLD TIME (Typ.)             | 18ms at full load   |             |          |          |              |             |          |          |
|                       | VOLTAGE RANGE                | 90 ~ 264VAC 127 ~ 370VDC  |             |          |          |              |             |          |          |
|                       | FREQUENCY RANGE              | 47 ~ 63Hz   |             |          |          |              |             |          |          |
|                       | POWER FACTOR (Typ.)          | PF>0.95/230VAC PF>0.98/115VAC at full load  |             |          |          |              |             |          |          |
|                       | EFFICIENCY (Typ.)            | 72%   |             |          |          |              |             |          |          |
|                       | AC CURRENT (Typ.)            | 1.65A/115VAC 0.85A/230VAC   |             |          |          |              |             |          |          |
|                       | INRUSH CURRENT (Typ.)        | COLD START 40A  |             |          |          |              |             |          |          |
| PROTECTION            | LEAKAGE CURRENT              | <1mA/240VAC   |             |          |          |              |             |          |          |
|                       | OVER LOAD                    | 105% ~ 135% rated output power<br>Protection type : Constant current limiting, recovers automatically after fault condition is removed  |             |          |          |              |             |          |          |
|                       | OVER VOLTAGE                 | CH1: 3.6 ~ 4.3V CH2: 5.75 ~ 6.75V<br>Protection type : Shut down o/p voltage, re-power on to recover  |             |          |          |              |             |          |          |
| ENVIRONMENT           | WORKING TEMP.                | -10 ~ +60°C (Refer to output load derating curve)   |             |          |          |              |             |          |          |
|                       | WORKING HUMIDITY             | 20 ~ 90% RH non-condensing  |             |          |          |              |             |          |          |
|                       | STORAGE TEMP., HUMIDITY      | -20 ~ +85°C, 10 ~ 95% RH  |             |          |          |              |             |          |          |
|                       | TEMP. COEFFICIENT            | ±0.03%/°C (0 ~ 50°C)  |             |          |          |              |             |          |          |
|                       | VIBRATION                    | 10 ~ 500Hz, 2G 10min./1cycle, Period for 60min.each along X, Y, Z axes  |             |          |          |              |             |          |          |
| SAFETY & EMC (Note 4) | SAFETY STANDARDS             | UL60950-1, TUV EN60950-1 Approved   |             |          |          |              |             |          |          |
|                       | WITHSTAND VOLTAGE            | I/P-O/P: 3KVAC I/P-FG: 1.5KVAC O/P-FG: 0.5KVAC  |             |          |          |              |             |          |          |
|                       | ISOLATION RESISTANCE         | I/P-O/P, I/P-FG, O/P-FG: 100M Ohms/500VDC   |             |          |          |              |             |          |          |
|                       | EMI CONDUCTION & RADIATION   | Compliance to EN55022 (CISPR22) Class B   |             |          |          |              |             |          |          |
|                       | HARMONIC CURRENT             | Compliance to EN61000-3-2, -3   |             |          |          |              |             |          |          |
|                       | EMS IMMUNITY                 | Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11; ENV50204, EN55024, Light industry level, criteria A   |             |          |          |              |             |          |          |
| OTHERS                | MTBF                         | 150.6K hrs min. MIL-HDBK-217F (25°C)  |             |          |          |              |             |          |          |
|                       | DIMENSION                    | 177.8*107.95*38mm (L*W*H)   |             |          |          |              |             |          |          |
|                       | PACKING                      | 0.62Kg; 24pcs/15.5Kg/1.34CUFT   |             |          |          |              |             |          |          |
| 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. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. |             |          |          |              |             |          |          |

## Mechanical Specification

Unit:mm



AC Input Connector (CN1) : JST B3P-VH or equivalent

| Pin No. | Assignment | Mating Housing           | Terminal                          |
|---------|------------|--------------------------|-----------------------------------|
| 1       | AC/L       | JST VHR<br>or equivalent | JST SVH-21T-P1.1<br>or equivalent |
| 2       | No Pin     |                          |                                   |
| 3       | AC/N       |                          |                                   |

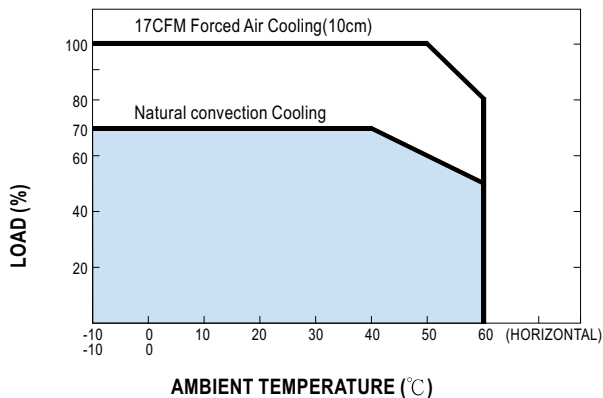
DC Output Connector (CN2) : JST B5P-VH or equivalent

| Pin No. | Assignment | Mating Housing           | Terminal                          |
|---------|------------|--------------------------|-----------------------------------|
| 1,2,3   | V2         | or equivalent<br>JST VHR | JST SVH-21T-P1.1<br>or equivalent |
| 4       | V3         |                          |                                   |
| 5       | V4         |                          |                                   |

DC Output Connector (CN3) : JST B8P-VH or equivalent

| Pin No. | Assignment | Mating Housing           | Terminal                          |
|---------|------------|--------------------------|-----------------------------------|
| 1~3     | V1         | JST VHR<br>or equivalent | JST SVH-21T-P1.1<br>or equivalent |
| 4~8     | COM        |                          |                                   |

## Derating Curve



## Output Derating VS Input Voltage

