

■ 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 70KHz(Optional)
- 3 years warranty

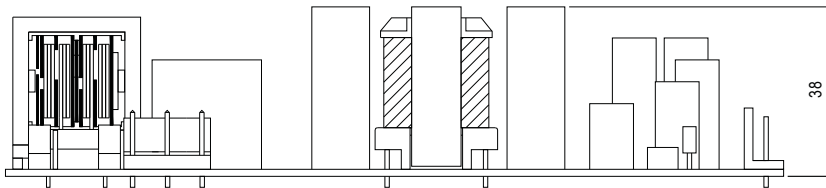
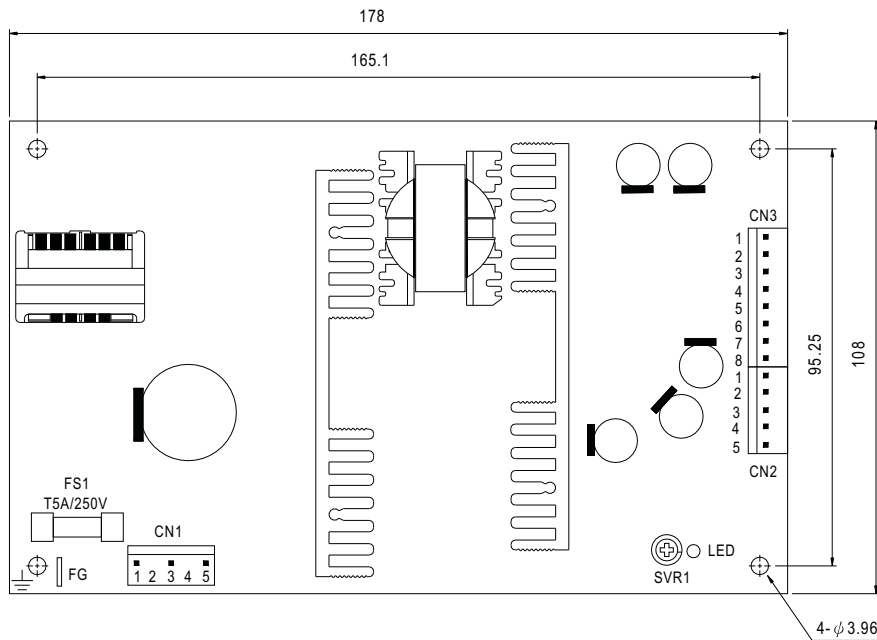


SPECIFICATION

| MODEL                  | PPQ-100B   |   |          |          | PPQ-100C |          |          |          | PPQ-100D |          |          |          |          |
|------------------------|--|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| OUTPUT                 | OUTPUT NUMBER  | CH1   | CH2      | CH3      | CH4      | CH1      | CH2      | CH3      | CH4      | CH1      | CH2      | CH3      | CH4      |
|                        | DC VOLTAGE   | 5V  | 12V      | -12V     | -5V      | 5V       | 15V      | -15V     | -5V      | 5V       | 24V      | 12V      | -12V     |
|                        | RATED CURRENT  | 10A   | 3.4A     | 0.6A     | 0.6A     | 10A      | 2.6A     | 0.6A     | 0.6A     | 8A       | 2A       | 0.6A     | 0.6A     |
|                        | CURRENT RANGE  | 2 ~ 15A   | 0.3 ~ 4A | 0 ~ 1A   | 0 ~ 1A   | 2 ~ 15A  | 0.3 ~ 4A | 0 ~ 1A   | 0 ~ 1A   | 2 ~ 10A  | 0.3 ~ 4A | 0 ~ 1A   | 0 ~ 1A   |
|                        | RATED POWER (max.)   | 101W  |          |          |          | 101W     |          |          |          | 102.4W   |          |          |          |
|                        | RIPPLE & NOISE (max.) Note.2   | 100mVp-p  | 150mVp-p | 100mVp-p | 100mVp-p | 100mVp-p | 150mVp-p | 100mVp-p | 100mVp-p | 100mVp-p | 200mVp-p | 100mVp-p | 100mVp-p |
|                        | VOLTAGE ADJ. RANGE   | CH1:4.75 ~ 5.5V   |          |          |          |          |          |          |          |          |          |          |          |
|                        | VOLTAGE TOLERANCE Note.3   | ±3.0%   | ±8.0%    | ±5.0%    | ±5.0%    | ±3.0%    | +10,-6%  | ±5.0%    | ±5.0%    | ±3.0%    | ±8.0%    | ±5.0%    | ±5.0%    |
|                        | LINE REGULATION  | ±1.0%   | ±2.0%    | ±2.0%    | ±1.0%    | ±1.0%    | ±2.0%    | ±2.0%    | ±1.0%    | ±1.0%    | ±2.0%    | ±2.0%    | ±1.0%    |
| LOAD REGULATION        | ±2.0%  | ±6.0%   | ±2.0%    | ±2.0%    | ±2.0%    | ±6.0%    | ±2.0%    | ±2.0%    | ±2.0%    | ±6.0%    | ±2.0%    | ±2.0%    |          |
| SETUP, RISE, HOLD TIME | 800ms, 50ms, 16ms/230VAC      1200ms, 50ms, 16ms/115VAC at full load |   |          |          |          |          |          |          |          |          |          |          |          |
| INPUT                  | VOLTAGE RANGE  | 90 ~ 264VAC      127 ~ 370VDC   |          |          |          |          |          |          |          |          |          |          |          |
|                        | FREQUENCY RANGE  | 47 ~ 63Hz   |          |          |          |          |          |          |          |          |          |          |          |
|                        | POWER FACTOR   | PF>0.95/230VAC      PF>0.98/115VAC at full load   |          |          |          |          |          |          |          |          |          |          |          |
|                        | EFFICIENCY(Typ.)   | 75%   |          |          |          | 76%      |          |          |          | 78%      |          |          |          |
|                        | AC CURRENT   | 1.65A/115VAC      0.85A/230VAC  |          |          |          |          |          |          |          |          |          |          |          |
|                        | INRUSH CURRENT(max.)   | COLD START 40A  |          |          |          |          |          |          |          |          |          |          |          |
|                        | LEAKAGE CURRENT  | <3.5mA /240VAC  |          |          |          |          |          |          |          |          |          |          |          |
| PROTECTION             | OVER LOAD  | 105% ~ 135% rated output power<br>Protection type : Hiccup mode, recovers automatically after fault condition is removed  |          |          |          |          |          |          |          |          |          |          |          |
|                        | OVER VOLTAGE   | CH1: 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  |          |          |          |          |          |          |          |          |          |          |          |
| OTHERS                 | EMS IMMUNITY   | Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204, EN55024, Light industry level, criteria A   |          |          |          |          |          |          |          |          |          |          |          |
|                        | MTBF   | 162.5K hrs min.    MIL-HDBK-217F (25°C)   |          |          |          |          |          |          |          |          |          |          |          |
|                        | DIMENSION  | 178*108*38mm (L*W*H)  |          |          |          |          |          |          |          |          |          |          |          |
| NOTE                   | PACKING  | 0.62Kg; 24pcs/15.9Kg/1.34CUFT   |          |          |          |          |          |          |          |          |          |          |          |
|                        |  | 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 B5P-VH or equivalent

| Pin No. | Assignment | Mating Housing        | Terminal                       |
|---------|------------|-----------------------|--------------------------------|
| 1       | AC/L       | JST VHR or equivalent | JST SVH-21T-P1.1 or equivalent |
| 2,4     | No Pin     |                       |                                |
| 3       | AC/N       |                       |                                |
| 5       | FG $\perp$ |                       |                                |

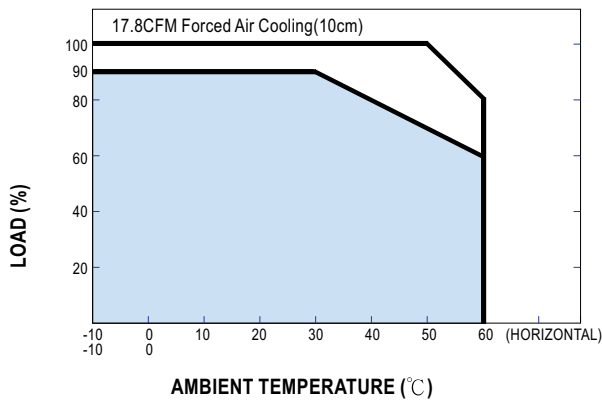
DC Output Connector (CN2) : JST B5P-VH or equivalent

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

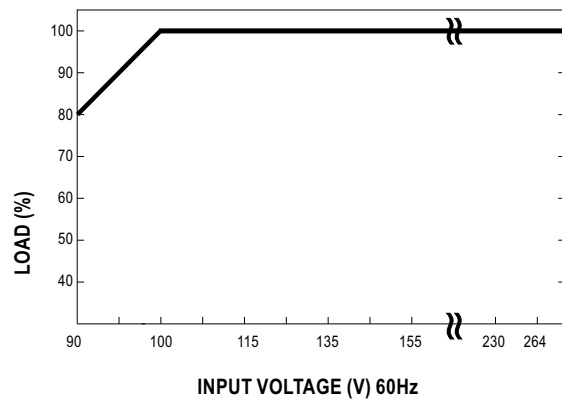
DC Output Connector (CN3) : JST B8P-VH or equivalent

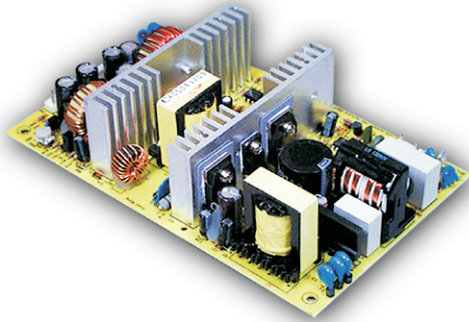
| Pin No. | Assignment | Mating Housing        | Terminal                       |
|---------|------------|-----------------------|--------------------------------|
| 1~4     | V1         | JST VHR or equivalent | JST SVH-21T-P1.1 or equivalent |
| 5~8     | COM        |                       |                                |

■ Derating Curve



■ Output Derating VS Input Voltage





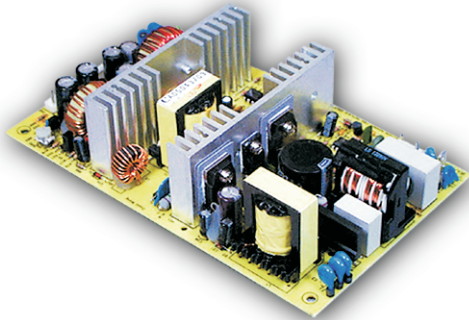
■ Features :

- 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%    |
| SETUP, RISE, HOLD TIME | 800ms, 50ms, 16ms at full load  |  |             |                             |          |                |             |          |          |
| INPUT                  | VOLTAGE RANGE   | 90 ~ 264VAC  |             | 127 ~ 370VDC                |          |                |             |          |          |
|                        | FREQUENCY RANGE   | 47 ~ 63Hz  |             |                             |          |                |             |          |          |
|                        | POWER FACTOR  | PF>0.95/230VAC   |             | PF>0.98/115VAC at full load |          |                |             |          |          |
|                        | EFFICIENCY(Typ.)  | 72%  |             |                             |          |                |             |          |          |
|                        | AC CURRENT  | 1.65A/115VAC   |             | 0.85A/230VAC                |          |                |             |          |          |
|                        | INRUSH CURRENT(max.)  | COLD START 40A   |             |                             |          |                |             |          |          |
|                        | LEAKAGE CURRENT   | <1mA/240VAC  |             |                             |          |                |             |          |          |
| PROTECTION             | 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           |          |                |             |          |          |
|                        |   | 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   | 178*108*38mm (L*W*H)   |             |                             |          |                |             |          |          |
|                        | PACKING   | 0.62Kg; 24pcs/15.5Kg/1.34CUFT  |             |                             |          |                |             |          |          |
| NOTE                   | <ol style="list-style-type: none"> <li>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</li> <li>2. Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf &amp; 47uf parallel capacitor.</li> <li>3. Tolerance : includes set up tolerance, line regulation and load regulation.</li> <li>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.</li> </ol> |  |             |                             |          |                |             |          |          |



■ 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

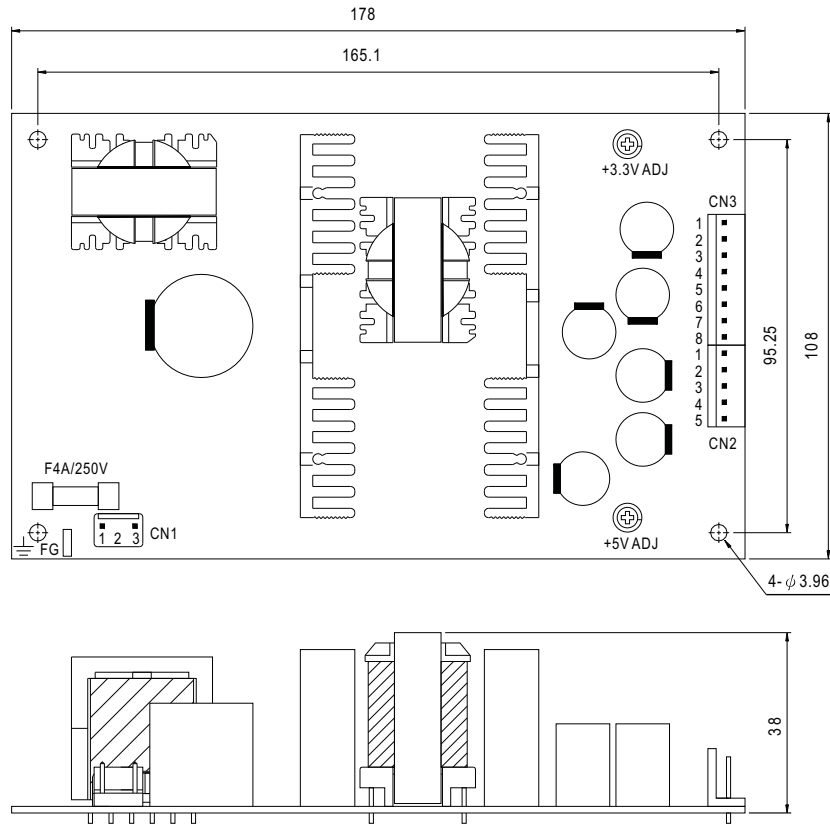


**SPECIFICATION**

| MODEL                  |   | PPQ-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%    |  |
| SETUP, RISE, HOLD TIME | 800ms, 50ms, 16ms at full load  |  |             |  |          |                |             |          |          |  |
| INPUT                  | VOLTAGE RANGE   | 90 ~ 264VAC  |             | 127 ~ 370VDC   |          |                |             |          |          |  |
|                        | FREQUENCY RANGE   | 47 ~ 63Hz  |             |  |          |                |             |          |          |  |
|                        | POWER FACTOR  | PF>0.95/230VAC   |             | PF>0.98/115VAC at full load  |          |                |             |          |          |  |
|                        | EFFICIENCY(Typ.)  | 72%  |             |  |          |                |             |          |          |  |
|                        | AC CURRENT  | 1.65A/115VAC   |             | 0.85A/230VAC   |          |                |             |          |          |  |
|                        | INRUSH CURRENT(max.)  | COLD START 40A   |             |  |          |                |             |          |          |  |
|                        | LEAKAGE CURRENT   | <1mA/240VAC  |             |  |          |                |             |          |          |  |
| PROTECTION             | 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   | 178*108*38mm (L*W*H)   |             |  |          |                |             |          |          |  |
|                        | PACKING   | 0.62Kg; 24pcs/15.5Kg/1.34CUFT  |             |  |          |                |             |          |          |  |
| NOTE                   | <ol style="list-style-type: none"> <li>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</li> <li>2. Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf &amp; 47uf parallel capacitor.</li> <li>3. Tolerance : includes set up tolerance, line regulation and load regulation.</li> <li>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.</li> </ol> |  |             |  |          |                |             |          |          |  |

## 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       |                          |                                   |

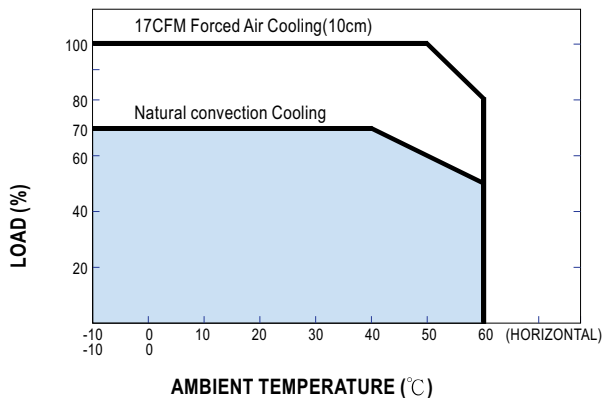
DC Output Connector (CN2) : JST B5P-VH or equivalent

| 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

