



#### ■ Features :

- Universal AC input / Full range(up to 295VAC)
- Built in active PFC compliance to EN61000-3-2 class C
- Constant Voltage design
- High efficiency up to 93%
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection
- U-bracket low profile:33mm
- ZVS technology to reduce power dissipation
- 3 years warranty

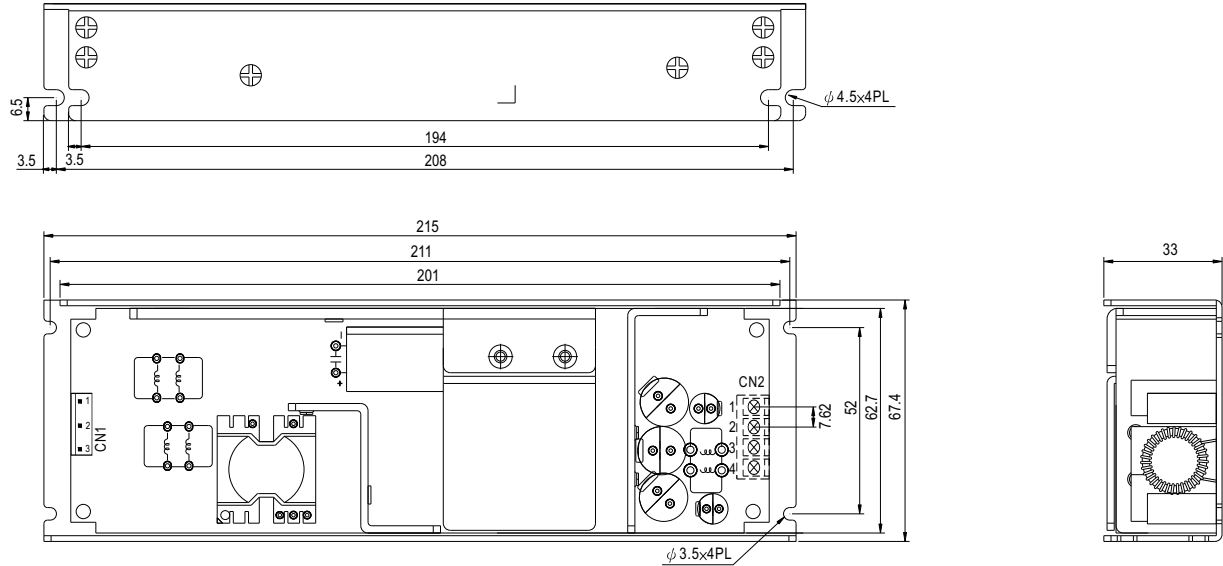


#### SPECIFICATION

| MODEL                    |                              | USP-150-12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | USP-150-15 | USP-150-24   | USP-150-36   | USP-150-48 |
|--------------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------|--------------|------------|
| OUTPUT                   | DC VOLTAGE                   | 12V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 15V        | 24V          | 36V          | 48V        |
|                          | RATED CURRENT                | 12.5A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 10A        | 6.3A         | 4.2A         | 3.2A       |
|                          | CURRENT RANGE                | 0 ~ 12.5A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 0 ~ 10A    | 0 ~ 6.3A     | 0 ~ 4.2A     | 0 ~ 3.2A   |
|                          | RATED POWER                  | 150W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 150W       | 151.2W       | 151.2W       | 153.6W     |
|                          | RIPPLE & NOISE (max.) Note.2 | 100mVp-p                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 150mVp-p   | 150mVp-p     | 250mVp-p     | 250mVp-p   |
|                          | VOLTAGE ADJ. RANGE           | 11.0~13.2V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 13.5~16.5V | 21.6~26.4V   | 32.4~39.6V   | 43.2~52.8V |
|                          | VOLTAGE TOLERANCE Note.3     | ±2.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ±2.0%      | ±2.0%        | ±2.0%        | ±2.0%      |
|                          | LINE REGULATION              | ±0.5%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ±0.5%      | ±0.5%        | ±0.5%        | ±0.5%      |
|                          | LOAD REGULATION              | ±1.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ±1.0%      | ±1.0%        | ±1.0%        | ±1.0%      |
|                          | SETUP, RISE TIME             | 2000ms, 100ms/230VAC 3000ms, 100ms/115VAC at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |              |              |            |
|                          | HOLD UP TIME (Typ.)          | 16ms/230VAC 16ms/115VAC at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |              |              |            |
| INPUT                    | VOLTAGE RANGE Note.4         | 90 ~ 295VAC 127 ~ 417VDC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |              |              |            |
|                          | FREQUENCY RANGE              | 47 ~ 63Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |              |              |            |
|                          | POWER FACTOR (Typ.)          | PF≧0.96/230VAC PF≧0.98/115VAC at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |              |              |            |
|                          | EFFICIENCY (Typ.)            | 91.5%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 91.5%      | 93%          | 93%          | 93%        |
|                          | AC CURRENT (Typ.)            | 2A/115VAC 1A/230VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |              |              |            |
|                          | INRUSH CURRENT (Typ.)        | Cold start 65A/230VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |              |              |            |
|                          | LEAKAGE CURRENT              | <2mA / 240VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |              |              |            |
| PROTECTION               | OVERLOAD                     | 145~185% rated output power<br>Protection type : Hiccup mode, recovers automatically after fault condition is removed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |              |              |            |
|                          | SHORT CIRCUIT                | Protection type : Hiccup mode, recovers automatically after fault condition is removed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |              |              |            |
|                          | OVER VOLTAGE                 | 13.6 ~ 16.3V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 17 ~ 21V   | 26.7 ~ 32.4V | 41.4 ~ 48.6V | 53 ~ 64.8V |
|                          |                              | Protection type : Shut down o/p voltage with auto-recovery or re-power on to recovery                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |              |              |            |
|                          | OVER TEMPERATURE             | 100°C±5°C(RTH2)<br>Protection type : Shut down o/p voltage, recovers automatically after temperature goes down                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |              |              |            |
| ENVIRONMENT              | WORKING TEMP                 | -30 ~ +65°C (Refer to output load derating curve)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |              |              |            |
|                          | WORKING HUMIDITY             | 20 ~ 90% RH non-condensing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |              |              |            |
|                          | STORAGE TEMP., HUMIDITY      | -40 ~ +85°C, 10 ~ 95% RH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |              |              |            |
|                          | TEMP. COEFFICIENT            | ±0.03%/°C (0 ~ 60°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |              |              |            |
|                          | VIBRATION                    | 10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |              |              |            |
| SAFETY & EMC<br>(Note 5) | SAFETY STANDARDS             | IEC60950-1,UL60950-1,EN60950-1 approved                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |              |              |            |
|                          | 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 EN55022 (CISPR22) Class B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |              |              |            |
|                          | HARMONIC CURRENT             | Compliance to EN61000-3-2,EN61000-3-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |              |              |            |
|                          | EMS IMMUNITY                 | Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204, EN55024, light industry level (surge 4KV), criteria A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |              |              |            |
| OTHERS                   | MTBF                         | 216.3K hrs min. MIL-HDBK-217F (25°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |              |              |            |
|                          | DIMENSION                    | 215*67.4*33mm (L*W*H)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |              |              |            |
|                          | PACKING                      | 0.48kg; 24PCS/12.5kg/0.61CUFT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |              |              |            |
| 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. Derating may be needed under low input voltages. Please check the static characteristics for more details.<br>5. 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. |            |              |              |            |

Case No. 988 Unit:mm

### Mechanical Specification



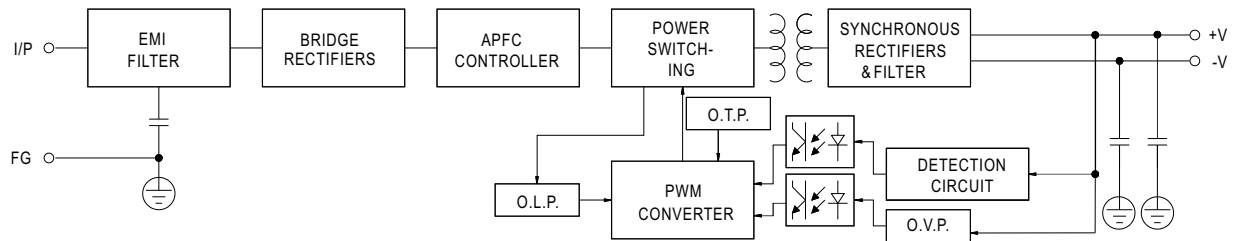
AC Input Connector (CN1) :SVH-21T-P1.1 or equivalent

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

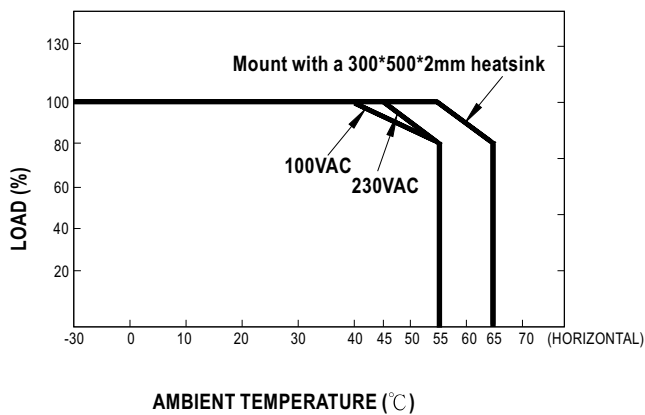
DC Terminal pin NO. Assignment (CN2)

| Pin No. | Assignment | Terminal    |
|---------|------------|-------------|
| 1,2     | V-         | DECA        |
| 3,4     | V+         | T21-BM10-04 |

### Block Diagram



### Derating Curve



### Static Characteristics

