

### Features :

- Universal AC input / Full range
- **Optional L-Bracket and cover**
- Isolated output & GND for CH1,CH2
- Built-in active PFC function, PF>0.92
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Remote control for CH1
- Peak load 170% for CH1 within 10 sec.
- Cooling by free air convection
- 100% full load burn-in test
- 3 years warranty

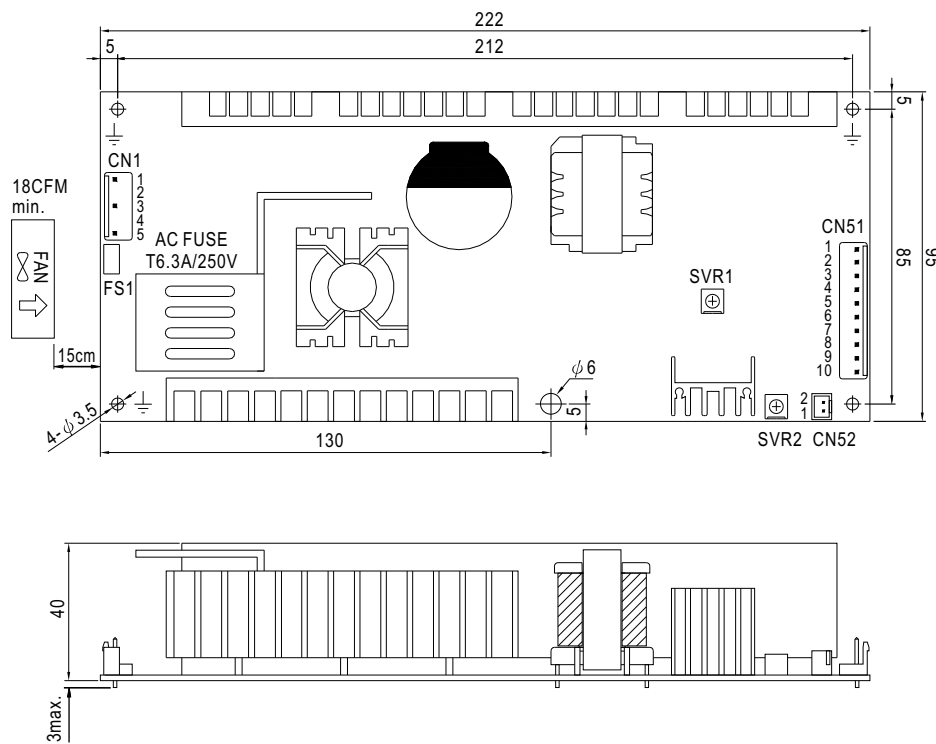


### SPECIFICATION

| MODEL                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | PID-250A                                                                                                                                                                                                                                   |              | PID-250B                 |              | PID-250C                 |              | PID-250D                |              |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------|--------------|--------------------------|--------------|-------------------------|--------------|
| OUTPUT                   | OUTPUT NUMBER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | CH1                                                                                                                                                                                                                                        | CH2          | CH1                      | CH2          | CH1                      | CH2          | CH1                     | CH2          |
|                          | DC VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 12V                                                                                                                                                                                                                                        | 5V           | 24V                      | 5V           | 36V                      | 5V           | 48V                     | 5V           |
|                          | RATED CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 15A(Peak 20A)                                                                                                                                                                                                                              | 5A           | 9.4A(Peak 16.7A)         | 5A           | 6.3A(Peak 11.1A)         | 5A           | 4.7A(Peak 8.4A)         | 5A           |
|                          | CURRENT RANGE <span>Note.6</span>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0 ~ 15A<br>(Peak 20A)                                                                                                                                                                                                                      | 0 ~ 5A       | 0 ~ 9.4A<br>(Peak 16.7A) | 0 ~ 5A       | 0 ~ 6.3A<br>(Peak 11.1A) | 0 ~ 5A       | 0 ~ 4.7A<br>(Peak 8.4A) | 0 ~ 5A       |
|                          | RATED POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 205W                                                                                                                                                                                                                                       |              | 250.6W                   |              | 251.8W                   |              | 250.6W                  |              |
|                          | RIPPLE & NOISE (max.) <span>Note.2</span>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 120mVp-p                                                                                                                                                                                                                                   | 50mVp-p      | 150mVp-p                 | 50mVp-p      | 200mVp-p                 | 50mVp-p      | 200mVp-p                | 50mVp-p      |
|                          | VOLTAGE ADJ. RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 10.8 ~ 13.2V                                                                                                                                                                                                                               | 4.75 ~ 5.25V | 21.6 ~ 26.4V             | 4.75 ~ 5.25V | 32.4 ~ 39.6V             | 4.75 ~ 5.25V | 43.2 ~ 52.8V            | 4.75 ~ 5.25V |
|                          | VOLTAGE TOLERANCE <span>Note.3</span>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ±3.0%                                                                                                                                                                                                                                      | ±2.0%        | ±2.0%                    | ±2.0%        | ±2.0%                    | ±2.0%        | ±2.0%                   | ±2.0%        |
|                          | LINE REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ±0.5%                                                                                                                                                                                                                                      | ±0.5%        | ±0.5%                    | ±0.5%        | ±0.5%                    | ±0.5%        | ±0.5%                   | ±0.5%        |
|                          | LOAD REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ±1.0%                                                                                                                                                                                                                                      | ±2.0%        | ±1.0%                    | ±2.0%        | ±1.0%                    | ±2.0%        | ±1.0%                   | ±2.0%        |
| SETUP, RISE TIME         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 2500ms, 60ms/115VAC    1200ms, 60ms/230VAC                                                                                                                                                                                                 |              |                          |              |                          |              |                         |              |
| HOLD UP TIME (Typ.)      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 30ms at full load                                                                                                                                                                                                                          |              |                          |              |                          |              |                         |              |
| INPUT                    | VOLTAGE RANGE <span>Note.5</span>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 90 ~ 264VAC    127 ~ 370VDC                                                                                                                                                                                                                |              |                          |              |                          |              |                         |              |
|                          | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 47 ~ 63Hz                                                                                                                                                                                                                                  |              |                          |              |                          |              |                         |              |
|                          | POWER FACTOR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | PF ≥ 0.92/230VAC    PF ≥ 0.97/115VAC at full load                                                                                                                                                                                          |              |                          |              |                          |              |                         |              |
|                          | EFFICIENCY(Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 83%                                                                                                                                                                                                                                        |              | 86%                      |              | 86%                      |              | 86%                     |              |
|                          | AC CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 3A/115VAC    1.5A/230VAC                                                                                                                                                                                                                   |              |                          |              |                          |              |                         |              |
|                          | INRUSH CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | COLD START 58A/230VAC                                                                                                                                                                                                                      |              |                          |              |                          |              |                         |              |
| LEAKAGE CURRENT          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <3.5mA / 240VAC                                                                                                                                                                                                                            |              |                          |              |                          |              |                         |              |
| PROTECTION               | OVERLOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | CH1: 105 ~ 170% rated output power<br>Normally work within 10 sec and then shut down, re-power on to recover<br>Over 180% rated power or short circuit, constant current limiting within 10 sec and then shut down, re-power on to recover |              |                          |              |                          |              |                         |              |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | CH2: 101 ~ 150% rated output power<br>Protection type : Hiccup mode, recovers automatically after fault condition is removed                                                                                                               |              |                          |              |                          |              |                         |              |
|                          | OVER VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 13.8 ~ 16.2V                                                                                                                                                                                                                               | 5.5 ~ 6.75V  | 27.6 ~ 32.4V             | 5.5 ~ 6.75V  | 40 ~ 48V                 | 5.5 ~ 6.75V  | 54 ~ 64.8V              | 5.5 ~ 6.75V  |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Protection type : Shut down o/p voltage, re-power on to recover for CH1 ; Hiccup mode, recovers automatically afer fault condition is removed for CH2(by zener diode clamp)                                                                |              |                          |              |                          |              |                         |              |
|                          | OVER TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 105℃ ±5℃ detect on heatsink of power transistors<br>Protection type : Shut down o/p voltage(CH1), recovers automatically after temperature goes down                                                                                       |              |                          |              |                          |              |                         |              |
| FUNCTION                 | REMOTE CONTROL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | CN52 : Open=CH1 & CH2 power on ; Short = CH1 power off, CH2 power on; when CH2 is malfunction, CH1 will be shut down                                                                                                                       |              |                          |              |                          |              |                         |              |
| ENVIRONMENT              | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -20 ~ +70℃ (Refer to output load derating curve)                                                                                                                                                                                           |              |                          |              |                          |              |                         |              |
|                          | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 20 ~ 90% RH non-condensing                                                                                                                                                                                                                 |              |                          |              |                          |              |                         |              |
|                          | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -20 ~ +85℃, 10 ~ 95% RH                                                                                                                                                                                                                    |              |                          |              |                          |              |                         |              |
|                          | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ±0.05%/℃ (0 ~ 50℃ )                                                                                                                                                                                                                        |              |                          |              |                          |              |                         |              |
|                          | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 10 ~ 500Hz, 2G 10min./1cycle, period for 60min each along X, Y, Z axes                                                                                                                                                                     |              |                          |              |                          |              |                         |              |
| SAFETY & EMC<br>(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 / 25℃ / 70% RH                                                                                                                                                                                  |              |                          |              |                          |              |                         |              |
|                          | 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, EN61000-6-2, heavy industry level, criteria A                                                                                                                                            |              |                          |              |                          |              |                         |              |
|                          | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 150.4Khrs min.    MIL-HDBK-217F (25℃)                                                                                                                                                                                                      |              |                          |              |                          |              |                         |              |
|                          | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | PCB:222*95*40mm (L*W*H) ; with optional CASE:250*105.4*53mm (L*W*H)                                                                                                                                                                        |              |                          |              |                          |              |                         |              |
|                          | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | PCB:0.74Kg; 18pcs/14.3Kg/0.88CUFT ; with optional CASE:1.6Kg; 9pcs/15.4Kg/0.61CUFT                                                                                                                                                         |              |                          |              |                          |              |                         |              |
| NOTE                     | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ 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.<br>5. Derating may be needed under low input voltage. Please check the derating curve for more details.<br>6. Peak current should reduce to 150% of rated value if the input voltage <110VAC. |                                                                                                                                                                                                                                            |              |                          |              |                          |              |                         |              |

## Mechanical Specification

Unit:mm



AC Input Connector (CN1) : JST B5P-VH or equivalent

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

DC Output Connector (CN51) : JST B10P-VH or equivalent

| Pin No. | Assignment | Mating Housing        | Terminal                       |
|---------|------------|-----------------------|--------------------------------|
| 1,2,3   | COM1       | JST VHR or equivalent | JST SVH-21T-P1.1 or equivalent |
| 4,5,6   | V1         |                       |                                |
| 7,8     | COM2       |                       |                                |
| 9,10    | V2         |                       |                                |

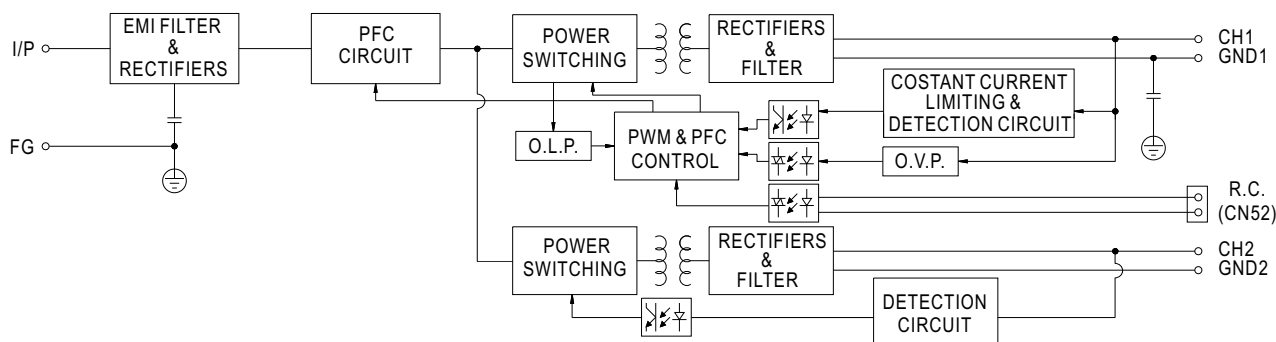
Remote ON/OFF Connector(CN52):JST B2B-XH or equivalent

| Pin No.       | Status            | Mating Housing        | Terminal                        |
|---------------|-------------------|-----------------------|---------------------------------|
| PIN1,2        | V1: OFF<br>V2: ON | JST XHP or equivalent | JST SXH-001T-P0.6 or equivalent |
| PIN1,2 (Open) | V1: ON<br>V2: ON  |                       |                                 |

|      |         |
|------|---------|
| SVR1 | For CH1 |
| SVR2 | For CH2 |

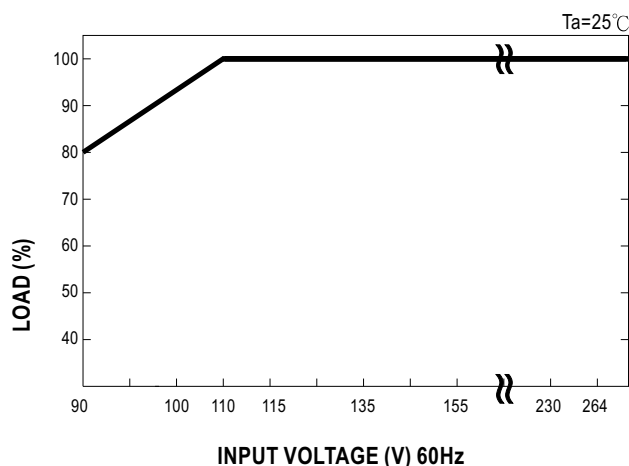
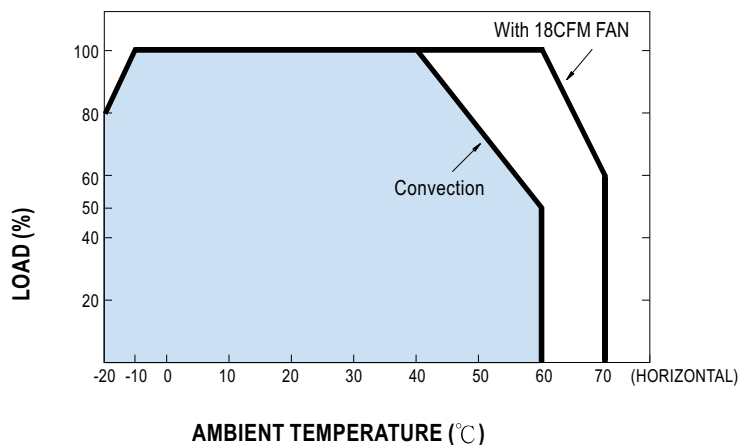
## Block Diagram

PFC fosc : 100KHz  
PWM fosc : 100KHz



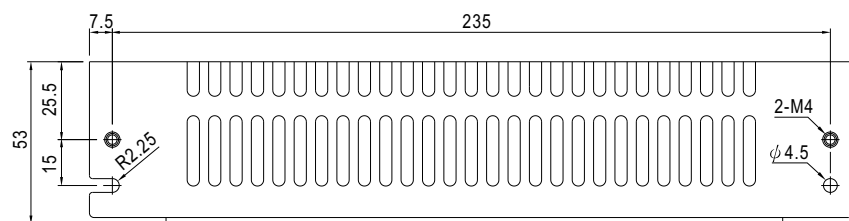
## Derating Curve

## Output Derating VS Input Voltage



## ■ Mechanical Specification

Case No.965A      Unit:mm



AC Input Connector (CN1) : JST B5P-VH or equivalent

| Pin No. | Assignment                     | Mating Housing           | Terminal                          |
|---------|--------------------------------|--------------------------|-----------------------------------|
| 1       | FG $\underline{\underline{=}}$ | JST VHR<br>or equivalent | JST SVH-21T-P1.1<br>or equivalent |
| 2,4     | No Pin                         |                          |                                   |
| 3       | AC/N                           |                          |                                   |
| 5       | AC/L                           |                          |                                   |

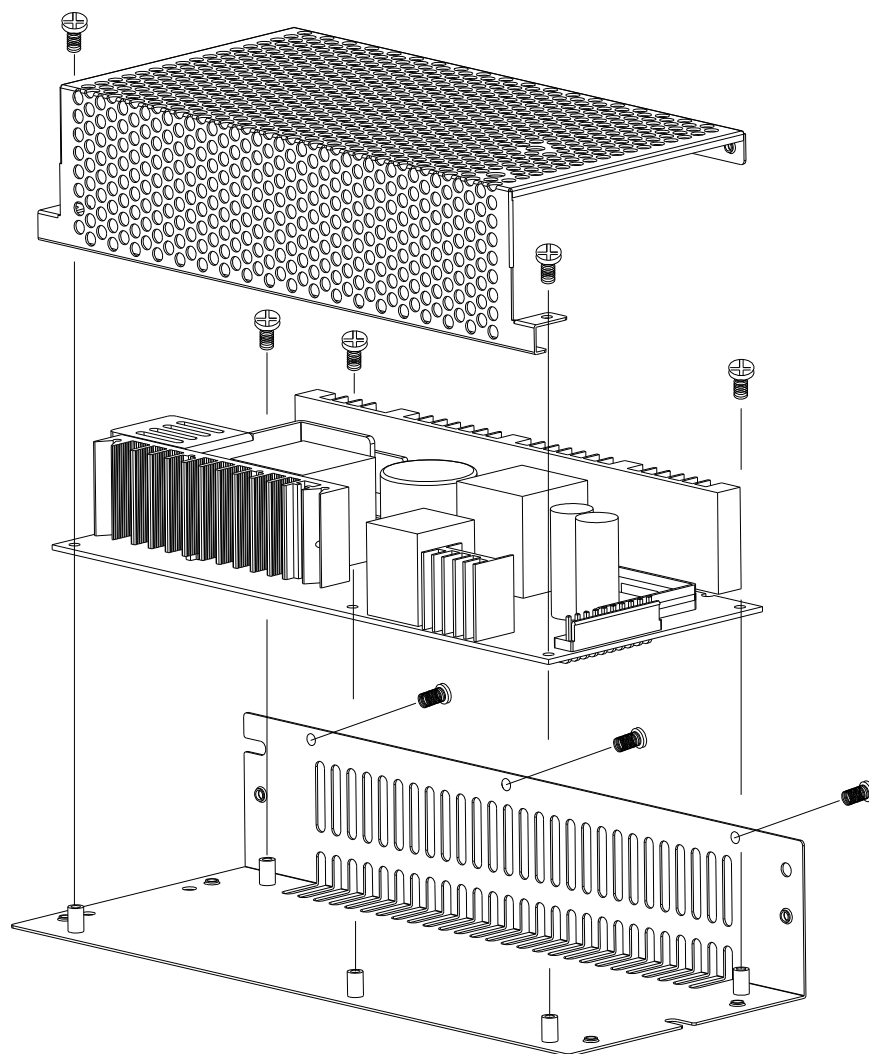
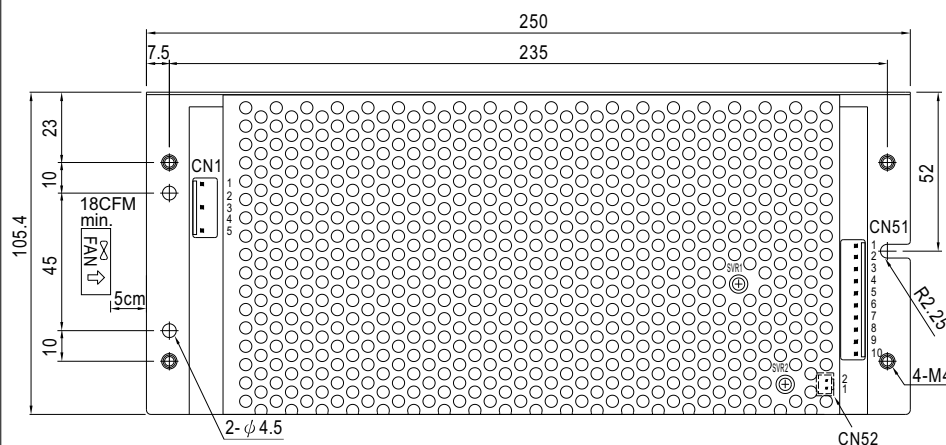
DC Output Connector (CN51) : JST B10P-VH or equivalent

| Pin No. | Assignment | Mating Housing           | Terminal                          |
|---------|------------|--------------------------|-----------------------------------|
| 1,2,3   | COM1       | JST VHR<br>or equivalent | JST SVH-21T-P1.1<br>or equivalent |
| 4,5,6   | V1         |                          |                                   |
| 7,8     | COM2       |                          |                                   |
| 9,10    | V2         |                          |                                   |

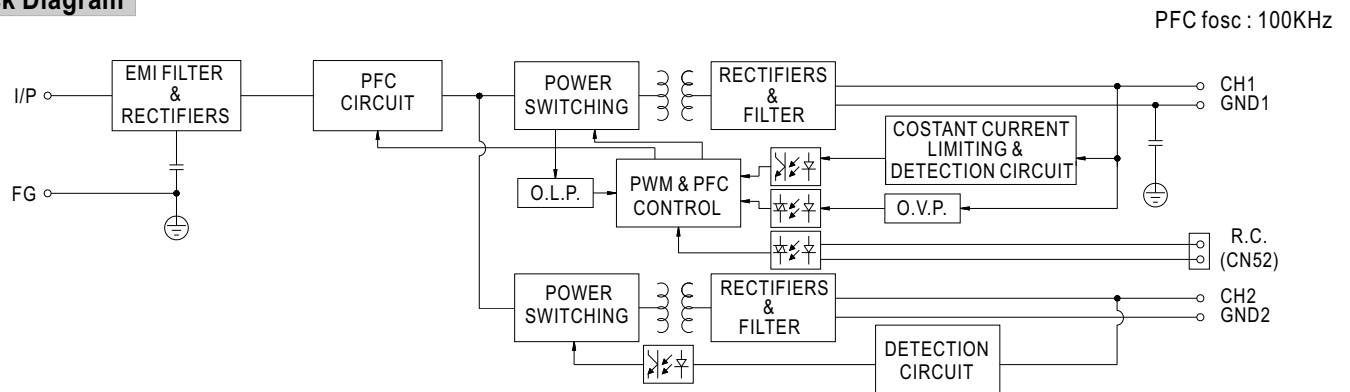
Remote ON/OFF Connector(CN52):JST B2B-XH or equivalent

| Pin No.           | Status            | Mating Housing           | Terminal                           |
|-------------------|-------------------|--------------------------|------------------------------------|
| PIN1,2<br>(Short) | V1: OFF<br>V2: ON | JST XHP<br>or equivalent | JST SXH-001T-P0.6<br>or equivalent |
| PIN1,2<br>(Open)  | V1: ON<br>V2: ON  |                          |                                    |

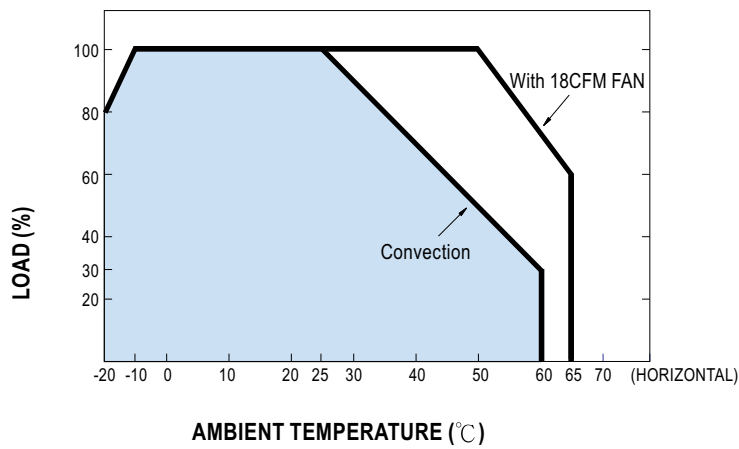
|      |         |
|------|---------|
| SVR1 | For CH1 |
| SVR2 | For CH2 |



## Block Diagram



## Derating Curve



## Output Derating VS Input Voltage

