



## ■ Features

- 5"×3" compact size
- Medical safety approved (2 x MOPP) according to ANSI/AAMI ES60601-1 and IEC/EN60601-1
- 75W convection, 100W force air
- EMI Class B for Class I configuration
- No load power consumption < 0.75W
- Remote sense function
- Protections: Short circuit / Overload / Over voltage
- Lifetime > 80K hours
- 3 years warranty

## ■ Applications

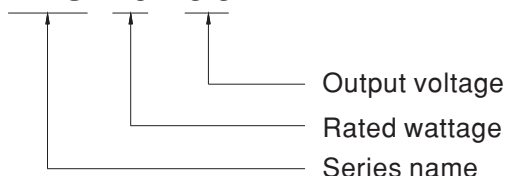
- Oral irrigator
- Hemodialysis machine
- Medical computer monitors
- Sleep apnea devices

## ■ Description

RPS-75 is a 75W highly reliable green PCB type medical power supply with a high power density on the 5" by 3" footprint. It accepts 90~264VAC input and offers various output voltages between 3.3V and 48V. The working efficiency is up to 86% and the extremely low no load power consumption is down below 0.75W. RPS-75 is able to be used for Class I (with FG) system design. The extremely low leakage current is less than 150  $\mu$ A. In addition, it conforms to international medical regulations (2\*MOPP) and EMC EN55011, perfectly fitting all kinds of BF rated "patient contact" medical system equipment.

## ■ Model Encoding

**RPS - 75 - 3.3**

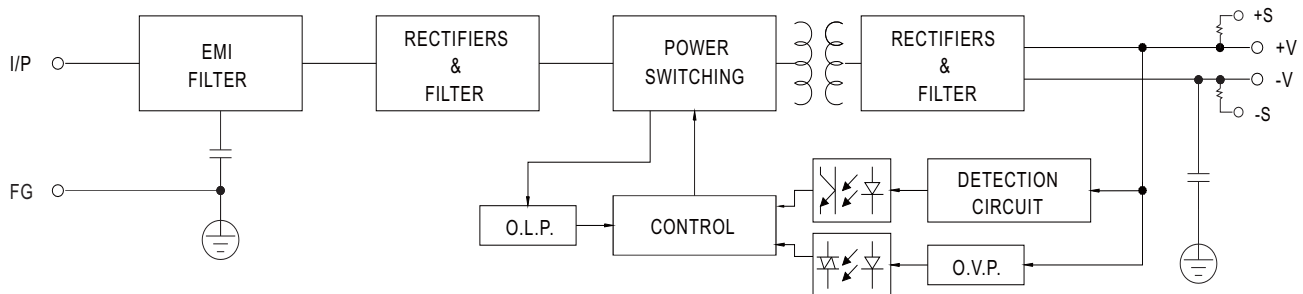


# SPECIFICATION

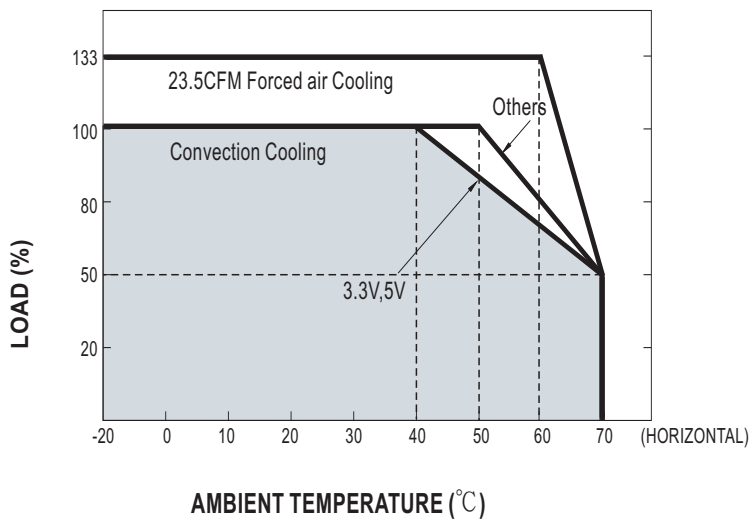
| MODEL                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | RPS-75-3.3                                                                                                                        | RPS-75-5                                | RPS-75-12    | RPS-75-15    | RPS-75-24                                                              | RPS-75-36                                | RPS-75-48    |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|--------------|--------------|------------------------------------------------------------------------|------------------------------------------|--------------|
| OUTPUT                       | DC VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 3.3V                                                                                                                              | 5V                                      | 12V          | 15V          | 24V                                                                    | 36V                                      | 48V          |
|                              | RATED CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 15A                                                                                                                               | 14A                                     | 6.3A         | 5A           | 3.2A                                                                   | 2.1A                                     | 1.6A         |
|                              | CURRENT RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0 ~ 20A                                                                                                                           | 0 ~ 18.7A                               | 0 ~ 8.3A     | 0 ~ 6.7A     | 0 ~ 4.2A                                                               | 0 ~ 2.8A                                 | 0 ~ 2.1A     |
|                              | RATED POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 49.5W                                                                                                                             | 70W                                     | 75.6W        | 75W          | 76.8W                                                                  | 75.6W                                    | 76.8W        |
|                              | PEAK LOAD (23.5CFM)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 66W                                                                                                                               | 93.5W                                   | 99.6W        | 100.5W       | 100.8W                                                                 | 100.8W                                   | 100.8W       |
|                              | RIPPLE & NOISE (max.) Note.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 60mVp-p                                                                                                                           | 60mVp-p                                 | 60mVp-p      | 60mVp-p      | 100mVp-p                                                               | 100mVp-p                                 | 100mVp-p     |
|                              | VOLTAGE ADJ. RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 2.9 ~ 3.6V                                                                                                                        | 4.75 ~ 5.5V                             | 11.4 ~ 13.2V | 13.5 ~ 16.5V | 22.8 ~ 27.6V                                                           | 34.2 ~ 39.6V                             | 45.6 ~ 52.8V |
|                              | VOLTAGE TOLERANCE Note.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ± 2.0%                                                                                                                            | ± 2.0%                                  | ± 1.0%       | ± 1.0%       | ± 1.0%                                                                 | ± 1.0%                                   | ± 1.0%       |
|                              | LINE REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ± 0.5%                                                                                                                            | ± 0.5%                                  | ± 0.5%       | ± 0.5%       | ± 0.5%                                                                 | ± 0.5%                                   | ± 0.5%       |
|                              | LOAD REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ± 1.5%                                                                                                                            | ± 1.5%                                  | ± 1.0%       | ± 1.0%       | ± 1.0%                                                                 | ± 1.0%                                   | ± 1.0%       |
|                              | SETUP, RISE TIME                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 500ms, 30ms/230VAC      500ms, 30ms/115VAC at full load                                                                           |                                         |              |              |                                                                        |                                          |              |
| HOLD UP TIME (Typ.)          | 90ms/230VAC      20ms/115VAC at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                   |                                         |              |              |                                                                        |                                          |              |
| INPUT                        | VOLTAGE RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 90 ~ 264VAC      127 ~370VDC                                                                                                      |                                         |              |              |                                                                        |                                          |              |
|                              | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 47 ~ 63Hz                                                                                                                         |                                         |              |              |                                                                        |                                          |              |
|                              | EFFICIENCY(Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 73%                                                                                                                               | 78%                                     | 82%          | 83%          | 85%                                                                    | 86%                                      | 86%          |
|                              | AC CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1.5A/115VAC      1A/230VAC                                                                                                        |                                         |              |              |                                                                        |                                          |              |
|                              | INRUSH CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | COLD START 25A/115VAC      50A/230VAC                                                                                             |                                         |              |              |                                                                        |                                          |              |
| LEAKAGE CURRENT(max.) Note.4 | Earth leakage current < 150 μA/264VAC , Touch current < 100μA/264VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                   |                                         |              |              |                                                                        |                                          |              |
| PROTECTION                   | OVERLOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 140 ~ 180% rated output power<br>Protection type : Hiccup mode, recovers automatically after fault condition is removed.          |                                         |              |              |                                                                        |                                          |              |
|                              | OVER VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 3.8 ~ 4.5V                                                                                                                        | 5.7 ~ 6.8V                              | 13.8 ~ 16.2V | 17.2 ~ 20.3V | 27.6 ~ 32.4V                                                           | 41.4 ~ 48.6V                             | 55.2 ~ 64.8V |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Protection type : Shut down o/p voltage, re-power to recover                                                                      |                                         |              |              |                                                                        |                                          |              |
| ENVIRONMENT                  | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -20 ~ +70°C (Refer to "Derating Curve")                                                                                           |                                         |              |              |                                                                        |                                          |              |
|                              | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 20 ~ 90% RH non-condensing                                                                                                        |                                         |              |              |                                                                        |                                          |              |
|                              | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | -40 ~ +85°C , 10 ~ 95% RH non-condensing                                                                                          |                                         |              |              |                                                                        |                                          |              |
|                              | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ± 0.03%/°C (0 ~ 50°C)                                                                                                             |                                         |              |              |                                                                        |                                          |              |
|                              | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes                                                           |                                         |              |              |                                                                        |                                          |              |
|                              | OPERATING ALTITUDE Note.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 4000 meters                                                                                                                       |                                         |              |              |                                                                        |                                          |              |
| SAFETY & EMC<br>(Note 7)     | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | IEC60601-1, TUV EN60601-1, UL ANSI / AAMI ES60601-1, CAN/CSA-C22.2 No. 60601-1:14 - Edition 3 approved; Design refer to EN60335-1 |                                         |              |              |                                                                        |                                          |              |
|                              | ISOLATION LEVEL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Primary-Secondary:2xMOPP, Primary-Earth:1xMOPP                                                                                    |                                         |              |              |                                                                        |                                          |              |
|                              | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | I/P-O/P:4KVAC    I/P-FG:2KVAC    O/P-FG:1.5KVAC                                                                                   |                                         |              |              |                                                                        |                                          |              |
|                              | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 70% RH                                                                        |                                         |              |              |                                                                        |                                          |              |
|                              | EMC EMISSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Parameter                                                                                                                         | Standard                                |              |              |                                                                        | Test Level / Note                        |              |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Conducted emission                                                                                                                | EN55011 (CISPR11)                       |              |              |                                                                        | Class B                                  |              |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Radiated emission                                                                                                                 | EN55011 (CISPR11)                       |              |              |                                                                        | Class B                                  |              |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Harmonic current                                                                                                                  | EN61000-3-2                             |              |              |                                                                        | Class A                                  |              |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Voltage flicker                                                                                                                   | EN61000-3-3                             |              |              |                                                                        | -----                                    |              |
|                              | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | EN60601-1-2                                                                                                                       |                                         |              |              |                                                                        |                                          |              |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Parameter                                                                                                                         | Standard                                |              |              |                                                                        | Test Level / Note                        |              |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ESD                                                                                                                               | EN61000-4-2                             |              |              |                                                                        | Level 4, 15KV air ; Level 4, 8KV contact |              |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | RF field susceptibility                                                                                                           | EN61000-4-3                             |              |              |                                                                        | Level 3, 10V/m                           |              |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | EFT bursts                                                                                                                        | EN61000-4-4                             |              |              |                                                                        | Level 3, 2KV                             |              |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Surge susceptibility                                                                                                              | EN61000-4-5                             |              |              |                                                                        | Level 4, 4KV/Line-FG; 2KV/Line-Line      |              |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Conducted susceptibility                                                                                                          | EN61000-4-6                             |              |              |                                                                        | Level 3, 10V                             |              |
|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Magnetic field immunity                                                                                                           | EN61000-4-8                             |              |              |                                                                        | Level 4, 30A/m                           |              |
| Voltage dip, interruption    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | EN61000-4-11                                                                                                                      |                                         |              |              | 100% dip 1 periods, 30% dip 25 periods, 100% interruptions 250 periods |                                          |              |
| OTHERS                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | MTBF                                                                                                                              | 446.8K hrs min.    MIL-HDBK-217F (25°C) |              |              |                                                                        |                                          |              |
|                              | DIMENSION (L*W*H)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 127*76.2*31mm or 5" * 3" *1.22" inch                                                                                              |                                         |              |              |                                                                        |                                          |              |
|                              | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.26Kg; 63pcs/16.3Kg/1.35CUFT                                                                                                     |                                         |              |              |                                                                        |                                          |              |
| 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 0.1μf & 47μf parallel capacitor.<br>3. Tolerance : includes set up tolerance, line regulation and load regulation.<br>4. Touch current was measured from primary input to DC output.<br>5. The ambient temperature derating of 5°C/1000m is needed for operating altitude greater than 2000m (6500ft).<br>6. Heat Sink HS1,HS2,HS3 can not be shorted.<br>7. The power supply is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 360mm*360mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies."<br>(as available on <a href="http://www.meanwell.com">http://www.meanwell.com</a> ) |                                                                                                                                   |                                         |              |              |                                                                        |                                          |              |

### ■ Block Diagram

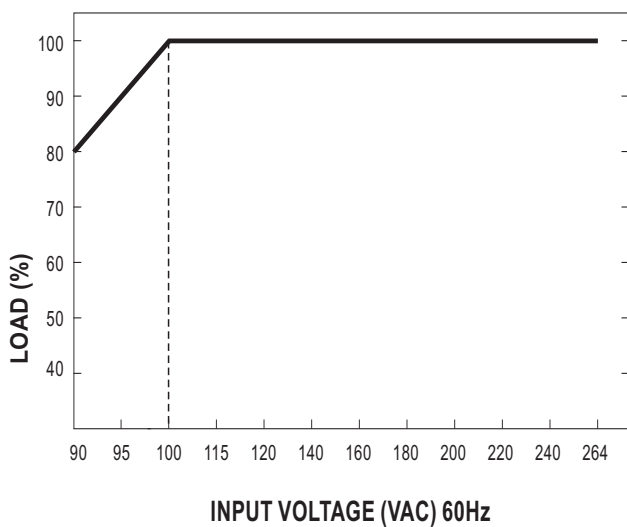
fosc : 65KHz



### ■ Derating Curve

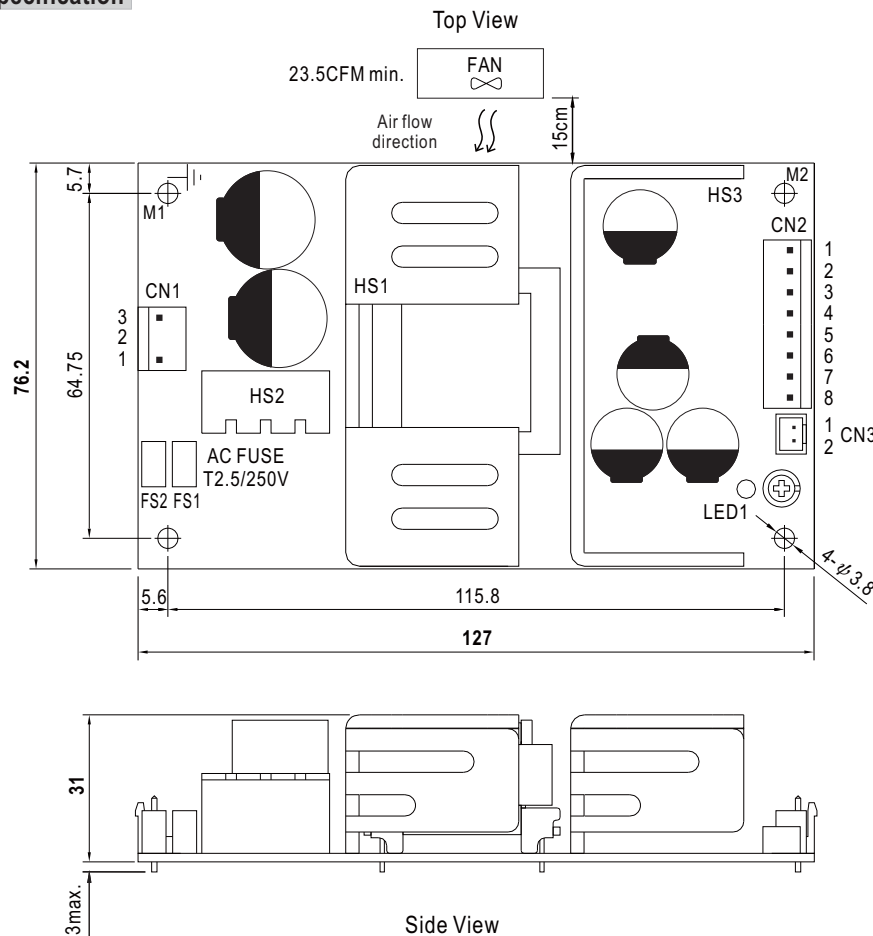


### ■ Output Derating VS Input Voltage



## Mechanical Specification

Unit:mm



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

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

Remote Sense(CN3) : JST B2B-XH or equivalent

| Pin No. | Assignment | Mating Housing           | Terminal                           |
|---------|------------|--------------------------|------------------------------------|
| 1       | RS+        | JST XHP<br>or equivalent | JST SXH-001T-P0.6<br>or equivalent |
| 2       | RS-        |                          |                                    |

DC Output Connector (CN2) : JST B8P-VH or equivalent

| Pin No. | Assignment | Mating Housing           | Terminal                          |
|---------|------------|--------------------------|-----------------------------------|
| 1,2,3,4 | +V         | JST VHR<br>or equivalent | JST SVH-21T-P1.1<br>or equivalent |
| 5,6,7,8 | -V         |                          |                                   |

⏏ : Grounding Required



- 1.HS1,HS2,HS3 cannot be shorted.
- 2.M1 is safety ground. For better EMC performance,Please secure an electrical connection between M1,M2 and chassis grounding.

## Installation Manual

Please refer to : <http://www.meanwell.com/manual.html>