



#### ■ Features :

- Universal AC input / Full range
- Built-in active PFC function, PF>0.95
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Forced air cooling by built-in DC Fan
- Built-in fan speed control
- Fixed switching frequency at 100KHz
- 3 years warranty



(except for 3.3V, 36V)

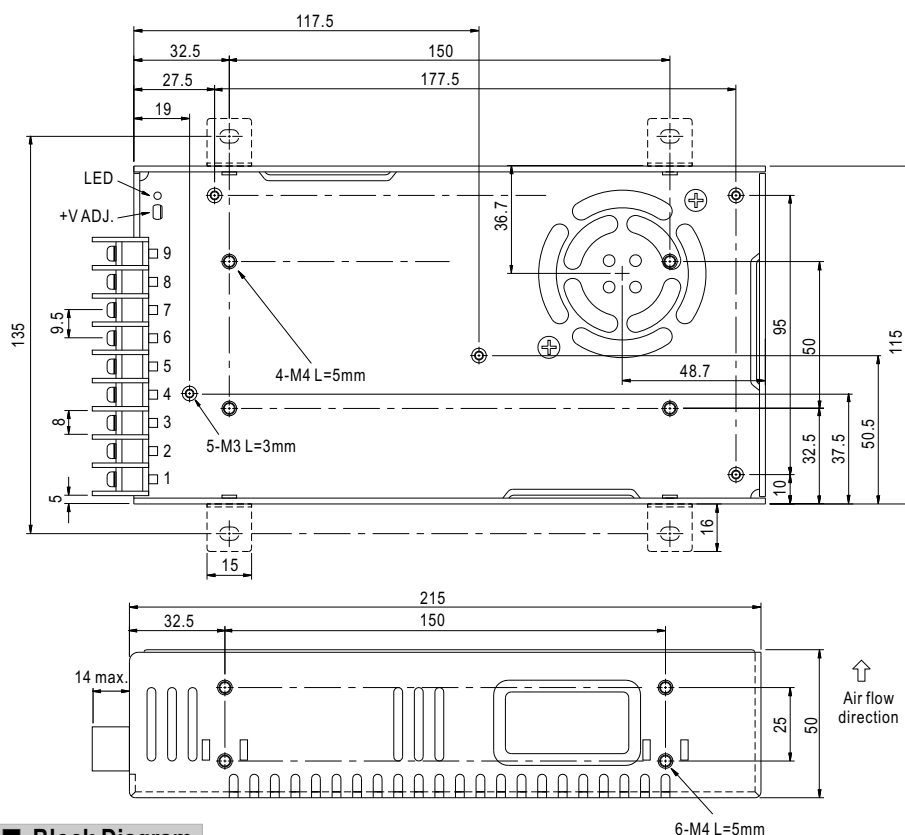


#### SPECIFICATION

| MODEL                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | SP-320-3.3                                                                                                                                                                    | SP-320-5     | SP-320-7.5  | SP-320-12    | SP-320-13.5  | SP-320-15  | SP-320-24    | SP-320-27    | SP-320-36    | SP-320-48    |  |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|--------------|--------------|------------|--------------|--------------|--------------|--------------|--|
| OUTPUT                | DC VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3.3V                                                                                                                                                                          | 5V           | 7.5V        | 12V          | 13.5V        | 15V        | 24V          | 27V          | 36V          | 48V          |  |
|                       | RATED CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 55A                                                                                                                                                                           | 55A          | 40A         | 25A          | 22A          | 20A        | 13A          | 11.7A        | 8.8A         | 6.7A         |  |
|                       | CURRENT RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0 ~ 60A                                                                                                                                                                       | 0 ~ 55A      | 0 ~ 40A     | 0 ~ 25A      | 0 ~ 22A      | 0 ~ 20A    | 0 ~ 13A      | 0 ~ 11.7A    | 0 ~ 8.8A     | 0 ~ 6.7A     |  |
|                       | RATED POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 181.5W                                                                                                                                                                        | 275W         | 300W        | 300W         | 297W         | 300W       | 312W         | 315.9W       | 316.8W       | 321.6W       |  |
|                       | RIPPLE & NOISE (max.) Note.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 150mVp-p                                                                                                                                                                      | 150mVp-p     | 150mVp-p    | 150mVp-p     | 150mVp-p     | 150mVp-p   | 150mVp-p     | 200mVp-p     | 220mVp-p     | 240mVp-p     |  |
|                       | VOLTAGE ADJ. RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 3.14 ~ 3.63V                                                                                                                                                                  | 4.5 ~ 5.5V   | 6 ~ 9V      | 10 ~ 13.2V   | 12 ~ 15V     | 13.5 ~ 18V | 20 ~ 26.4V   | 26 ~ 31.5V   | 32.4 ~ 39.6V | 41 ~ 56V     |  |
|                       | VOLTAGE TOLERANCE Note.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ±1.0%                                                                                                                                                                         | ±2.0%        | ±2.0%       | ±1.0%        | ±1.0%        | ±1.0%      | ±1.0%        | ±1.0%        | ±1.0%        | ±1.0%        |  |
|                       | LINE REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ±0.5%                                                                                                                                                                         | ±0.5%        | ±0.5%       | ±0.3%        | ±0.3%        | ±0.3%      | ±0.2%        | ±0.2%        | ±0.2%        | ±0.2%        |  |
|                       | LOAD REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ±1.5%                                                                                                                                                                         | ±1.0%        | ±1.0%       | ±0.5%        | ±0.5%        | ±0.5%      | ±0.5%        | ±0.5%        | ±0.5%        | ±0.5%        |  |
|                       | SETUP, RISE TIME                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 800ms, 50ms/230VAC      2500ms, 50ms/115VAC at full load                                                                                                                      |              |             |              |              |            |              |              |              |              |  |
| HOLD UP TIME (Typ.)   | 16ms/230VAC      16ms/115VAC at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                               |              |             |              |              |            |              |              |              |              |  |
| INPUT                 | VOLTAGE RANGE Note.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 88 ~ 264VAC      124 ~ 370VDC                                                                                                                                                 |              |             |              |              |            |              |              |              |              |  |
|                       | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 47 ~ 63Hz                                                                                                                                                                     |              |             |              |              |            |              |              |              |              |  |
|                       | POWER FACTOR (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | PF>0.95/230VAC      PF>0.98/115VAC at full load                                                                                                                               |              |             |              |              |            |              |              |              |              |  |
|                       | EFFICIENCY (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 74%                                                                                                                                                                           | 79%          | 83%         | 86%          | 86%          | 86%        | 87%          | 88%          | 87%          | 89%          |  |
|                       | AC CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 115VAC                                                                                                                                                                        | 2.5A         | 5A          |              |              |            |              |              |              |              |  |
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 230VAC                                                                                                                                                                        | 1.5A         | 2.5A        |              |              |            |              |              |              |              |  |
|                       | INRUSH CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 20A/115VAC      40A/230VAC                                                                                                                                                    |              |             |              |              |            |              |              |              |              |  |
| LEAKAGE CURRENT       | <1mA / 240VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                               |              |             |              |              |            |              |              |              |              |  |
| PROTECTION            | OVERLOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 105 ~ 135% rated output power<br>Protection type : Hiccup mode, recovers automatically after fault condition is removed                                                       |              |             |              |              |            |              |              |              |              |  |
|                       | OVER VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 3.8 ~ 4.5V                                                                                                                                                                    | 5.75 ~ 6.75V | 9.4 ~ 10.9V | 13.8 ~ 16.2V | 15.5 ~ 18.2V | 18 ~ 21V   | 27.6 ~ 32.4V | 33.7 ~ 39.2V | 45 ~ 52.5V   | 57.6 ~ 67.2V |  |
|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Protection type : Shut down o/p voltage, re-power on to recover                                                                                                               |              |             |              |              |            |              |              |              |              |  |
|                       | OVER TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 80℃ ±5℃ (70℃ ±5℃ 3.3V,5V only) (TSW1 : detect on heatsink of power transistor)<br>Protection type : Shut down o/p voltage, recovers automatically after temperature goes down |              |             |              |              |            |              |              |              |              |  |
| ENVIRONMENT           | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | -20 ~ +65℃ (Refer to output load derating curve)                                                                                                                              |              |             |              |              |            |              |              |              |              |  |
|                       | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 20 ~ 90% RH non-condensing                                                                                                                                                    |              |             |              |              |            |              |              |              |              |  |
|                       | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -40 ~ +85℃, 10 ~ 95% RH                                                                                                                                                       |              |             |              |              |            |              |              |              |              |  |
|                       | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ±0.03%/℃ (0 ~ 50℃ )                                                                                                                                                           |              |             |              |              |            |              |              |              |              |  |
|                       | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes                                                                                                                  |              |             |              |              |            |              |              |              |              |  |
| SAFETY & EMC (Note 4) | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | UL60950-1, TUV EN60950-1, CCC GB4943(except for 3.3V, 36V) 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                                                                                                                                                  |              |             |              |              |            |              |              |              |              |  |
|                       | EMS IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204, EN55024, light industry level, criteria A                                                                                   |              |             |              |              |            |              |              |              |              |  |
| OTHERS                | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 207K hrs min.    MIL-HDBK-217F (25℃)                                                                                                                                          |              |             |              |              |            |              |              |              |              |  |
|                       | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 215*115*50mm (L*W*H)                                                                                                                                                          |              |             |              |              |            |              |              |              |              |  |
|                       | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1.1Kg; 12pcs/14Kg/0.92CUFT                                                                                                                                                    |              |             |              |              |            |              |              |              |              |  |
| 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. 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> )<br>5. Derating may be needed under low input voltages. Please check the derating curve for more details. |                                                                                                                                                                               |              |             |              |              |            |              |              |              |              |  |

#### Mechanical Specification

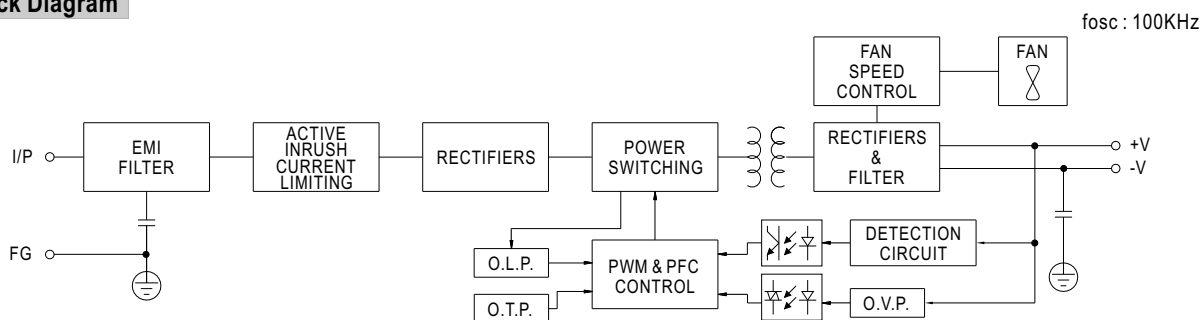
Case No. 912G Unit:mm



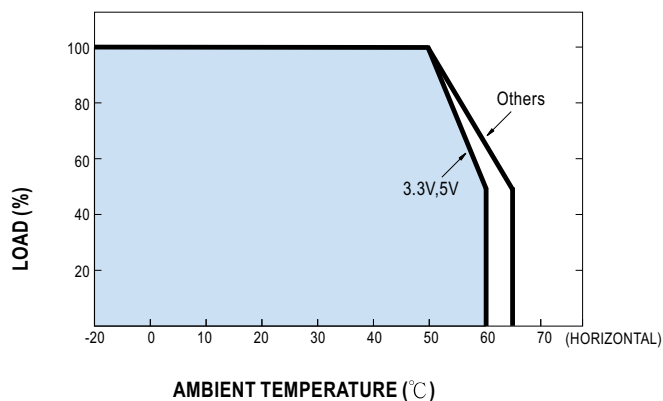
Terminal Pin No. Assignment :

| Pin No. | Assignment | Pin No. | Assignment   |
|---------|------------|---------|--------------|
| 1       | AC/L       | 4~6     | DC OUTPUT -V |
| 2       | AC/N       | 7~9     | DC OUTPUT +V |
| 3       | FG $\perp$ |         |              |

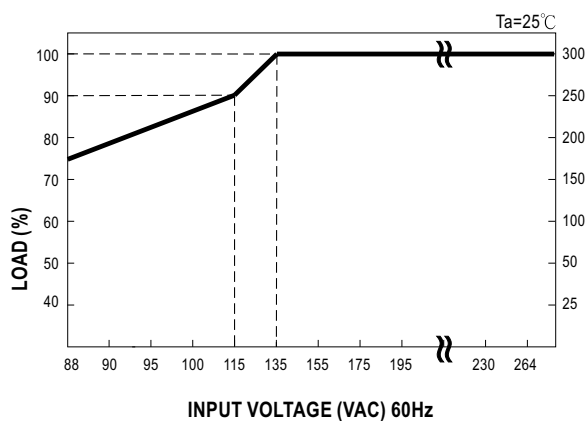
#### Block Diagram



#### Derating Curve



#### Static Characteristics



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