



#### ■ Features :

- Universal AC input / Full range
- 3 pole AC inlet IEC320-C14
- Built-in active PFC function, PF>0.95
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Fully enclosed plastic case
- Approvals: UL / CUL / TUV / BSMI / CCC / CB / FCC / CE
- Class I power ( with earth pin)
- LED indicator for power on
- No load power consumption<0.5W
- Meet EISA 2007(Energy Independence and Security Act)
- 2 years warranty

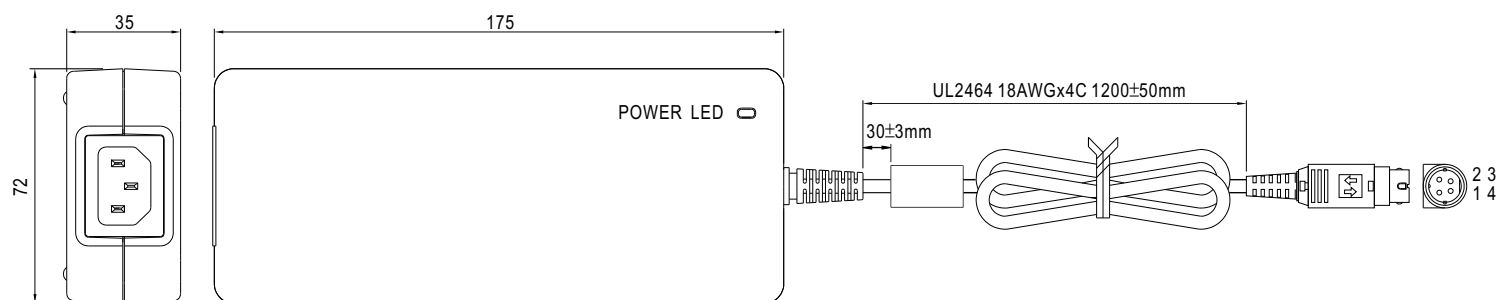


#### SPECIFICATION

| ORDER NO.              |                              | GS160A12-R7B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | GS160A15-R7B | GS160A20-R7B | GS160A24-R7B | GS160A48-R7B |
|------------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------|--------------|--------------|
| OUTPUT                 | SAFETY MODEL NO.             | GS160A12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | GS160A15     | GS160A20     | GS160A24     | GS160A48     |
|                        | DC VOLTAGE                   | 12V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 15V          | 20V          | 24V          | 48V          |
|                        | RATED CURRENT                | 11.5A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 9.6A         | 8A           | 6.67A        | 3.34A        |
|                        | CURRENT RANGE                | 0 ~ 11.5A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0 ~ 9.6A     | 0 ~ 8A       | 0 ~ 6.67A    | 0 ~ 3.34A    |
|                        | RATED POWER (max.)           | 138W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 144W         | 160W         | 160W         | 160W         |
|                        | RIPPLE & NOISE (max.) Note.2 | 80mVp-p                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 100mVp-p     | 150mVp-p     | 180mVp-p     | 240mVp-p     |
|                        | VOLTAGE TOLERANCE Note.3     | ±5.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ±5.0%        | ±4.0%        | ±3.0%        | ±3.0%        |
|                        | LINE REGULATION Note.4       | ±1.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ±1.0%        | ±1.0%        | ±1.0%        | ±1.0%        |
|                        | LOAD REGULATION              | ±5.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ±5.0%        | ±4.0%        | ±3.0%        | ±3.0%        |
|                        | SETUP, RISE TIME Note.6      | 2000ms, 20ms / 230VAC      2500ms, 20ms / 115VAC at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              |              |              |              |
|                        | HOLD UP TIME (Typ.)          | 20ms / 230VAC      20ms / 115VAC at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              |              |              |              |
| INPUT                  | VOLTAGE RANGE Note.7         | 85 ~ 264VAC    120 ~ 370VDC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |              |              |              |              |
|                        | FREQUENCY RANGE              | 47 ~ 63Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |              |              |              |              |
|                        | POWER FACTOR (Typ.)          | PF>0.95 / 230VAC      PF>0.98 / 115VAC at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |              |              |              |
|                        | EFFICIENCY (Typ.)            | 89%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 90%          | 92%          | 92.5%        | 94%          |
|                        | AC CURRENT                   | 1.85A / 115VAC      1A / 230VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              |              |              |              |
|                        | INRUSH CURRENT (max.)        | 120A / 230VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |              |              |              |              |
|                        | LEAKAGE CURRENT(max.)        | 0.75mA / 240VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              |              |              |              |
| PROTECTION             | OVERLOAD                     | 105 ~ 135% rated output power<br>Protection type : Hiccup mode, recovers automatically after fault condition is removed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |              |              |              |
|                        | OVER VOLTAGE                 | 105 ~ 135% rated output voltage<br>Protection type : Shut down o/p voltage, re-power on to recover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |              |              |              |              |
|                        | OVER TEMPERATURE             | 90℃ ±10℃ (RTH2) detect on inside ambient temperature<br>Protection type : Shut down o/p voltage, re-power on to recover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |              |              |              |
|                        |                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              |              |              |              |
| ENVIRONMENT            | WORKING TEMP.                | -30 ~ +70℃ (Refer to output load derating curve)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |              |              |              |              |
|                        | WORKING HUMIDITY             | 20% ~ 90% RH non-condensing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |              |              |              |              |
|                        | STORAGE TEMP., HUMIDITY      | -20 ~ +85℃, 10 ~ 95% RH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |              |              |              |
|                        | TEMP. COEFFICIENT            | ±0.03% / °C (0~50℃)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |              |              |              |
|                        | VIBRATION                    | 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |              |              |              |
| SAFETY & EMC (Note. 5) | SAFETY STANDARDS             | UL60950-1, TUV EN60950-1, BSMI CNS14336, CCC GB4943 approved                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |              |              |              |
|                        | WITHSTAND VOLTAGE            | I/P-O/P: 3KVAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              |              |              |              |
|                        | ISOLATION RESISTANCE         | I/P-O/P:100M Ohms / 500VDC / 25℃ / 70% RH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |              |              |              |              |
|                        | EMI CONDUCTION & RADIATION   | Compliance to EN55022(CISPR22) ,EN61204-3 class B, CNS13438 class B, GB9254-1 class B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |              |              |              |              |
|                        | HARMONIC CURRENT             | Compliance to EN61000-3-2,3, GB17625.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |              |              |              |              |
| OTHERS                 | EMS IMMUNITY                 | Compliance to EN61000-4-2,3,4,5,6,8,11, light industry level, criteria A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |              |              |              |              |
|                        | MTBF                         | 290.3Khrs min. MIL-HDBK-217F(25℃)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |              |              |              |              |
|                        | DIMENSION                    | 175*72*35mm (L*W*H)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |              |              |              |              |
|                        | PACKING                      | 0.66Kg; 20pcs/ 14.2Kg/ 0.85CUFT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              |              |              |              |
| CONNECTOR              | PLUG                         | See page 2 ; Other type available by customer requested                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |              |              |              |
|                        | CABLE                        | See page 2 ; Other type available by customer requested                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |              |              |              |              |
| NOTE                   |                              | 1. All parameters are specified at 230VAC input, rated load, 25℃ 70% RH ambient.<br>2. Ripple & noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1uf & 47uf capacitor.<br>3. Tolerance: includes set up tolerance, line regulation, load regulation.<br>4. Line regulation is measured from low line to high line at rated load.<br>5. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.<br>6. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to increase of the set up time.<br>7. Derating may be needed under low input voltage. Please check the derating curve for more details. |              |              |              |              |

## ■ Mechanical Specification

Case No.997A Unit:mm

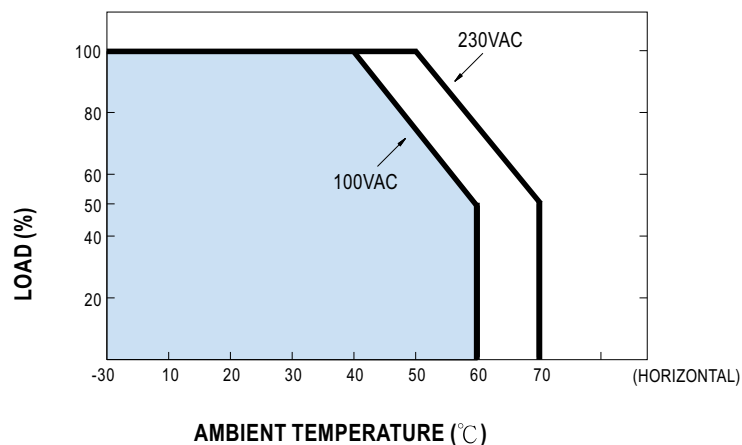


## ■ Plug Assignment

Standard plug: R7B

| R7B                                                                                 |         |        |
|-------------------------------------------------------------------------------------|---------|--------|
|                                                                                     | PIN NO. | OUTPUT |
|  | 1,4     | +V     |
|                                                                                     | 2,3     | -V     |
| AC FG<br>-V connected to AC FG                                                      |         |        |

## ■ Derating Curve



## ■ Static Characteristics

