

**Typical Features**

- ◆ Wide input voltage range: 85-900VAC
- ◆ No load power consumption ≤ 1W
- ◆ Transfer Efficiency 89%(TYP.)
- ◆ Switching Frequency: 65KHz
- ◆ Protections: short circuit, over current, over voltage
- ◆ Isolation voltage: 4000Vac
- ◆ Conform to CE, RoHS test standard
- ◆ Designed for coal mining power equipment



**Application Field**

**DA40-1000SXXG2D4 Series**----- a special high voltage power supply designed for customers who provide electrical equipment for coal mining industry, to meet the requirements of safety in providing power supply, easy mounting and technology innovation ect. It features universal input voltage range, low ripple, low temperature rise, low power consumption, high efficiency, high reliability, safer isolation. These series have widely application for monitoring and security sectors of coal mining industry.

**Typical Product List**

| Certificate | Part No.         | Output Specifications |          |          |           |           | Max. Capacitive Load | Ripple & Noise 20MHz (Max) | Efficiency@ Full Load, 220Vac (Typical) |
|-------------|------------------|-----------------------|----------|----------|-----------|-----------|----------------------|----------------------------|---|
|             |                  | Power                 | Voltage1 | Current1 | Voltage 2 | Current 2 |                      |                            |   |
|             |                  | (W)                   | Vo1(V)   | Io1(m A) | Vo2(V)    | Io2(m A)  |                      |                            |   |
| -           | DA40-1000S24G2D4 | 40                    | 24       | 1667     | -         | -         | 6000                 | 100                        | 86                                      |
|             | DA40-1000S28G2D4 | 40                    | 28       | 1428     | -         | -         | 5000                 | 100                        | 88                                      |
|             | DA40-1000S35G2D4 | 40                    | 35       | 1150     | -         | -         | 5000                 | 100                        | 89                                      |
|             | DA40-1000S37G2D4 | 40                    | 37       | 1081     | -         | -         | 4000                 | 100                        | 89                                      |

Note 1: "\*" are models being developing.

Note 2: The typical value of output efficiency is based on module is full loaded and burned-in after half an hour.

Note 3: The fluctuation range of full load efficiency(% ,TYP) in table is ±2%, full load efficiency= output power/module's input power.

Note 4: Ripple and noise is tested by twisted pair method, for details please check "Ripple & Noise Test" at back of datasheet.

**Input Specifications**

| Item                  | Operating Condition | Min | Typ. | Max | Unit |
|-----------------------|---------------------|-----|------|-----|------|
| Input Voltage Range   | AC input            | 85  | 330  | 900 | VAC  |
|                       | DC input            | -   | -    | -   | VDC  |
| Input Frequency range | -                   | 47  | 50   | 63  | Hz   |
| Input Current         | 100VAC              | /   | /    | 0.9 | A    |



|                                 |        |                       |   |     |  |
|---------------------------------|--------|-----------------------|---|-----|--|
|                                 | 330VAC | /                     | / | 0.4 |  |
| Surge Current                   | 330VAC | /                     | / | 180 |  |
|                                 | 900VAC | /                     | / |     |  |
| Leakage Current                 | -      | 0.5mA TYP/230VAC/50Hz |   |     |  |
| Recommended External Input Fuse | -      | 2A/1000VAC, necessary |   |     |  |
| Hot Plug                        | -      | Unavailable           |   |     |  |
| Remote Control Terminal         | -      | Unavailable           |   |     |  |

**Output Specifications**

| Item                      | Operating Condition                  | Min  | Typ.   | Max  | Unit   |
|---------------------------|--------------------------------------|--|--------|------|--------|
| Voltage Accuracy          | Input voltage 220V, any load         | -  | ±1.0   | ±2.0 | %      |
| Line Regulation           | Nominal load                         | -  |        | ±1.0 | %      |
| Load Regulation           | Nominal input voltage, 10%~100% load |  |        | ±1.0 | %      |
| No Load Power Consumption | Input 85VAC                          | -  | -      | 1.0  | W      |
|                           | Input 900VAC                         | -  | -      |      |        |
| Minimum Load              | Single Output                        | 0  | -      | -    | %      |
|                           | Dual output common ground            | -  | -      | -    | %      |
|                           | Dual output but Isolated             | -  | -      | -    |        |
| Start up Delay Time       | Nominal input voltage (full load)    | -  | 1000   | -    | mS     |
| Power-off Holding Time    | Input 300VAC (full load)             | -  | 150    | -    | mS     |
|                           | Input 660VAC (full load)             | -  | 350    | -    |        |
| Dynamic Response          | 25%~50%~25%<br>50%~75%~50%           | Overshoot range(%): ≤±5.0                        |        |      | %      |
|                           |                                      | Recovery time(mS): ≤5.0                          |        |      | mS     |
| Output Overshoot          | Full input voltage range             | ≤10%Vo   |        |      | %      |
| Short circuit Protection  |                                      | Self-recovery after the short circuit is removed |        |      | Hiccup |
| Temperature Drift         | -                                    | -  | ±0.03% | -    | %/°C   |
| Over Current Protection   | Nominal input voltage                | ≥110% Io, self-recovery                          |        |      | Hiccup |
| Over Voltage Protection   | Output 35VDC                         | ≤45  |        |      | VDC    |



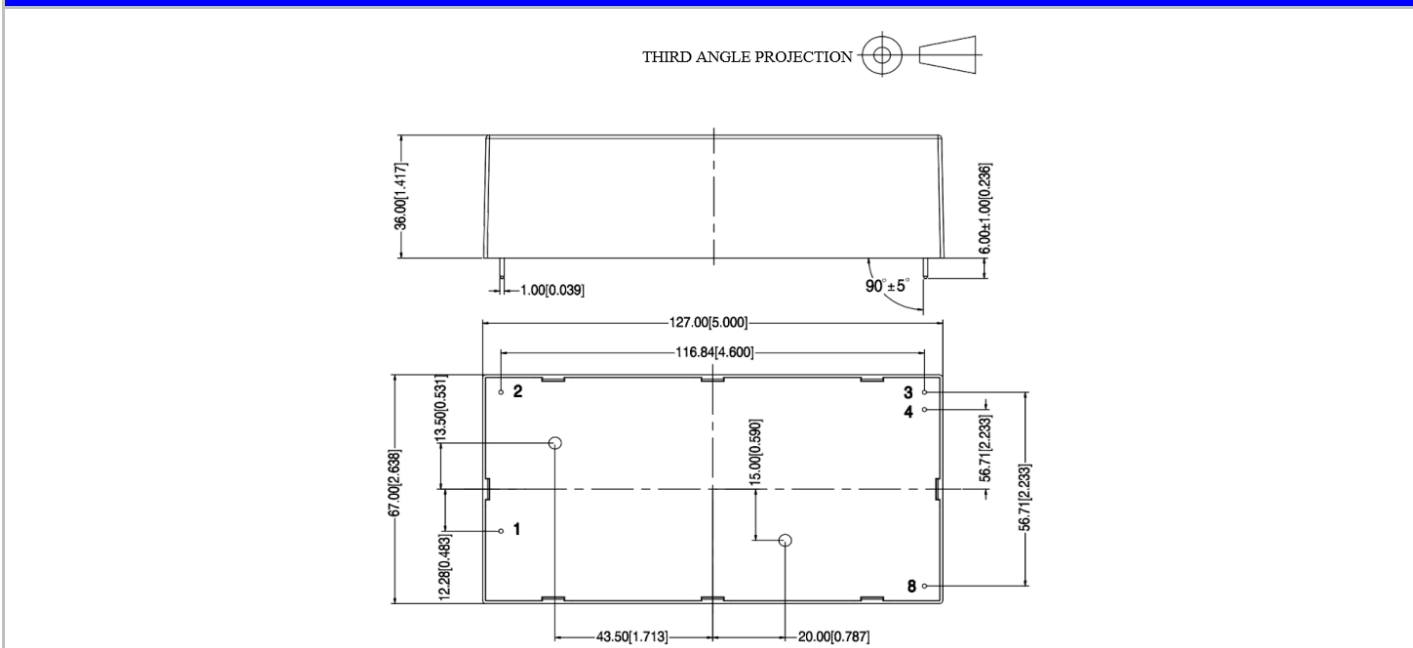
**General Specifications**

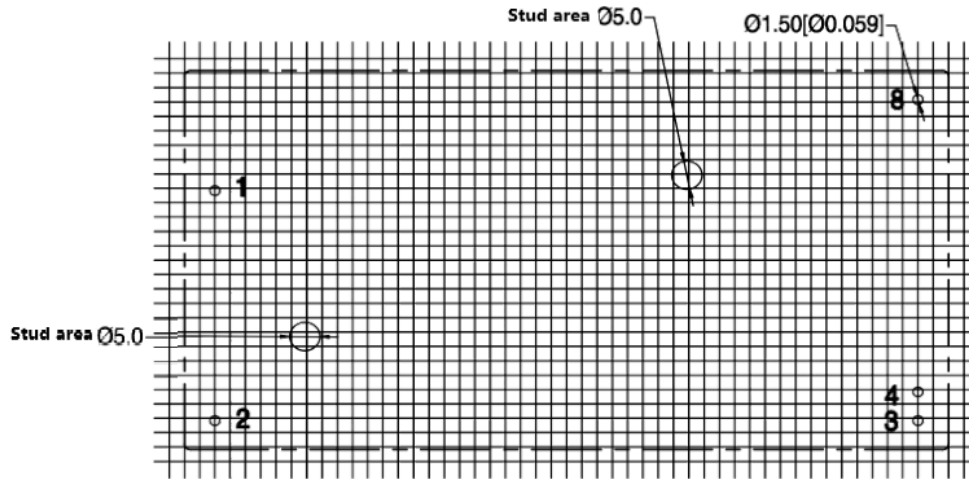
| Item                  | Operating Condition          | Min                            | Typ. | Max | Unit |
|-----------------------|------------------------------|--------------------------------|------|-----|------|
| Switching Frequency   | -                            | -                              | 65   | -   | KHz  |
| Operating Temperature | -                            | -25                            | -    | +70 | °C   |
| Storage Temperature   | -                            | -40                            | -    | +85 |      |
| Soldering Temperature | Wave soldering               | 260±4°C, time 5-10S            |      |     |      |
|                       | Manual soldering             | 360±8°C, time 4-7S             |      |     |      |
| Relative Humidity     | -                            | 10                             | -    | 90  | %RH  |
| Isolation Voltage     | Input-Output,<br>≤3.0Ma/1Min | 4000                           | -    | -   | VAC  |
| Insulation Resistance | Input-Output@<br>DC500V      | 50                             | -    | -   | MΩ   |
| Vibration             | -                            | 10-55Hz,10G,30Min,alongX,Y,Z   |      |     |      |
| Safety Class          |                              | CLASS I                        |      |     |      |
| MTBF                  | -                            | MIL-HDBK-217F @25°C > 300,000H |      |     |      |

**EMC Characteristics**

| Total Item | Sub Item | Test Standard   | Class                       |
|------------|----------|-----------------|-----------------------------|
| EMS        | ESD      | IEC/EN61000-4-2 | Contact±6KV Perf.Criteria B |
|            | RS       | IEC/EN61000-4-3 | 10V/m Perf.Criteria A       |
|            | Surge    | IEC/EN61000-4-5 | ±2KV Perf.Criteria B        |
|            | EFT      | IEC/EN61000-4-4 | ±4KV Perf.Criteria B        |
|            | CS       | IEC/EN61000-4-6 | 10Vr.m.s Perf.Criteria A    |

**Dimension**





Note: grid 2.54\*2.54mm  
 Unit: mm[inch]  
 Pin section tolerance: ±0.10mm [±0.004inch]  
 General tolerance: ±1.00mm [±0.039inch]  
 The product must be fixed with M3 screws in a harsh environment  
 Size of fix hole please refer to the external dimension drawing

|              |                        |                            |
|--------------|------------------------|----------------------------|
| Packing Code | L x W x H              |                            |
| -            | 127.0 x 67.0 x 36.0 mm | 5.000 x 2.638 x 1.417 inch |

**Pin Specification**

| Pin       | 1     | 2     | 3   | 4   | 8  |
|-----------|-------|-------|-----|-----|----|
| Single(S) | AC(L) | AC(N) | +Vo | -Vo | NC |

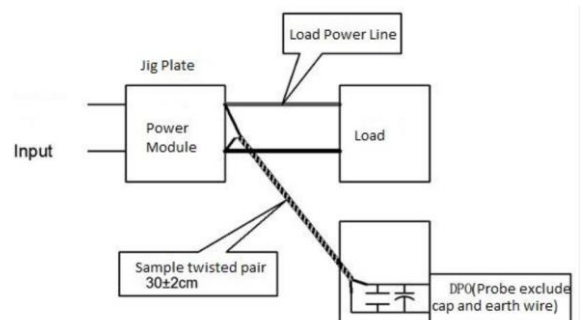
Note: If the definition of pin is not in accordance with the model selection manual, please refer to the label on actual item

**Ripple& Noise Test: (Twisted Pair Method 20MHZ bandwidth)**

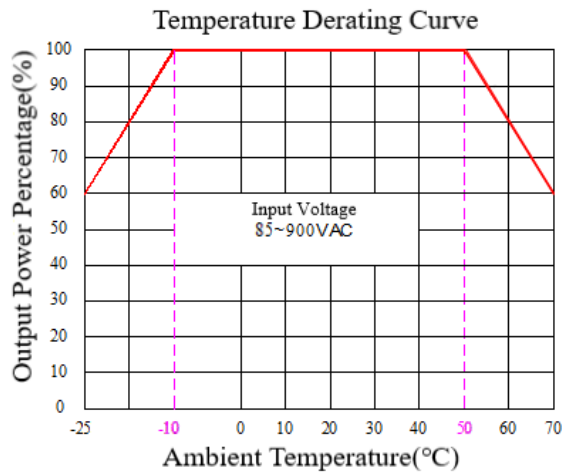
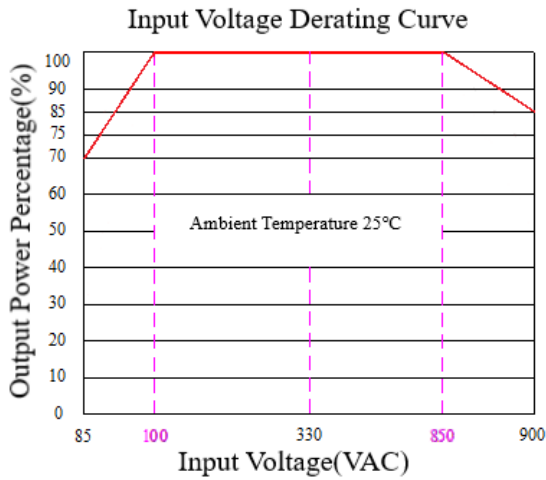
**Test Method:**

(1) 12# twisted pair to connect, Oscilloscope bandwidth set as 20MHz, 100M bandwidth probe, terminated with 0.1uF polypropylene capacitor and 10uF high frequency low resistance electrolytic capacitor in parallel, oscilloscope set as Sample pattern.

(2) Input terminal connect to power supply, output terminal connect to electronic load through jig plate, Use 30cm±2 cm sampling line, Power line selected from corresponding diameter wire with insulation according to the flow of output current.



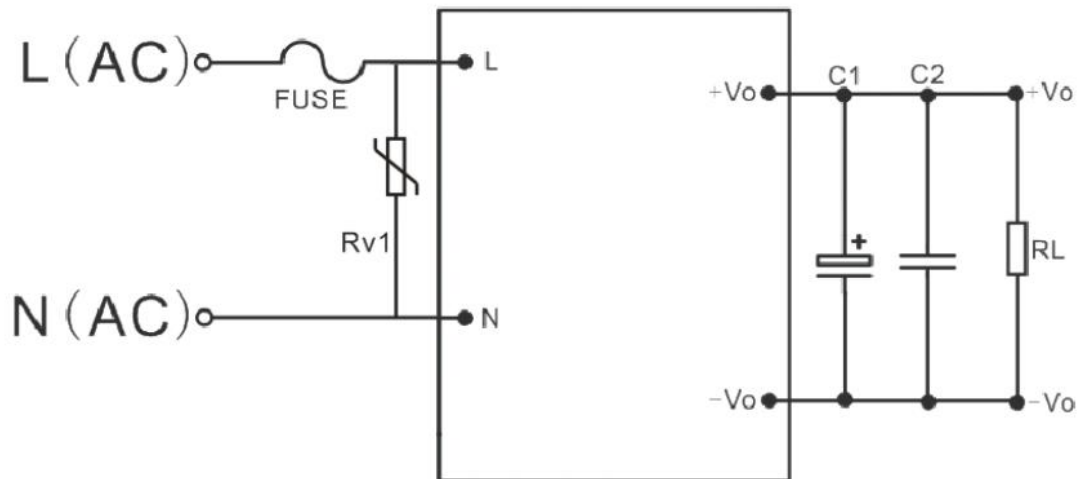
**Product Characteristic Curve**



Note 1: Input Voltage should be derated based on Input voltage derating curve when it is 85~150VAC/850~900VAC.

Note 2: Our product is suitable to use under natural air cooling environment, if use it under closed condition, please contact with us.

**Typical Application Circuit and EMC Recommended Circuit**



| Components | Name                                    | Recommended Value     |
|------------|---|-----------------------|
| FUSE       | FUSE                                    | 2A/1000Vac, necessary |
| RV1        | Voltage dependent resistor              | 14D561K               |
| C1         | High frequency low resistance capacitor | 10uF/50V              |
| C2         | Ceramic capacitor                       | 1uF/50V               |



## Note 1:

1. The product should be used within the specification range, or it will cause permanent damage to it;
2. The input terminal should connect to fuse;
3. If the product is worked under the minimum requested load, the product performance cannot be guaranteed to comply with all parameters in the datasheet;
4. If the product is not operated within the required load range, the product performance cannot be guaranteed to comply with all parameters in the datasheet;
5. Unless otherwise specified, parameters in this datasheet were measured under the conditions of **Ta=25°C**, **humidity<75%** with nominal input voltage and rated output load(pure resistance load);
6. All index testing methods in this datasheet are based on our Company's corporate standards;
7. The performance indexes of the product models listed in this manual are as above, but some indexes of non-standard model products will exceed the above-mentioned requirements, please directly contact our technician for specific information;
8. We can provide product customization service,
9. Specifications are subject to change without prior notice, please follow up with our website for newest manual.