

**KEY FEATURES**

- Enclosed Medical Switching Power Supply
- Cooling by Free Air Convection
- 85 Watts and 120 Watt with 10CFM Forced Air
- 4000VAC Input to Output 2MOPP Insulation
- High Efficiency up to 91%
- With P.F.C. Function >0.9
- <0.3W No Load Input Power
- EMI for Both Class I (with PE) and Class II (without PE) Configuration
- Suitable for BF Application with Appropriate System Consideration
- UL / IEC / EN 60601 3.1 Edition Safety Approvals
- 3-Year Product Warranty


**ELECTRICAL SPECIFICATIONS**

All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

| Model No.                                    | MQF120E-12S   | MQF120E-24S                                     | MQF120E-48S |       |
|--|---|---|-------------|-------|
| Max Output Wattage (with 10CFM FAN) (W)      | 120 W   |   |             |       |
| Max Output Wattage (Free air Convection) (W) | 85 W  |   |             |       |
| Input  | Voltage (Note 3)  | 90-264 VAC                                      |             |       |
|  | Frequency (Hz)  | 47-63 Hz  |             |       |
|  | Current (Full load)   | < 2.0 A max. (115 VAC) / < 1.0 A max. (230 VAC) |             |       |
|  | Inrush Current (<2ms)                                       | < 45 A max. (115 VAC) / < 90 A max. (230 VAC)   |             |       |
|  | Leakage Current   | < 0.1mA / 264 VAC (Touch Current)               |             |       |
|  | Power Factor  | PF>0.9 at Full Load                             |             |       |
|  | No Load   | < 0.3W (115 / 230 VAC)                          |             |       |
| Output                                       | Voltage (V.DC.)   | 12V   | 24V         | 48V   |
|  | Voltage Adj Range (V.DC.)                                   | ±4% Output Voltage                              |             |       |
|  | Voltage Accuracy  | ±2%   |             |       |
|  | Current (with 10CFM FAN) (A) max                            | 10  | 5           | 2.5   |
|  | Current (Free air Convection) (A) max                       | 7.083   | 3.542       | 1.771 |
|  | Line Regulation   | ±1%   |             |       |
|  | Load Regulation (10-100%)                                   | ±1%   |             |       |
|  | Minimum Load  | 0%  |             |       |
|  | Maximum Capacitive Load                                     | 3000µF  | 1500µF      | 500µF |
|  | Ripple & Noise (max.) (Note 1)                              | 160mV   | 1% Vout     |       |
|  | Efficiency (at 230VAC)                                      | 90%   | 90%         | 91%   |
| Hold-up Time (at 115 VAC) (Note 2)           | 10 ms min.  |   |             |       |
| Protection                                   | Over Power Protection                                       | Auto recovery, Hiccup mode                      |             |       |
|  | Over Voltage Protection                                     | Latch off                                       |             |       |
|  | Overt Temperature Protection                                | Latch off                                       |             |       |
|  | Short Circuit Protection                                    | Auto recovery, Hiccup mode                      |             |       |
| Isolation                                    | Input-Output  | 4000VAC or 5656VDC                              |             |       |
|  | Input-FG  | 2000VAC or 2828VDC                              |             |       |
|  | Output-FG   | 1500VAC or 2121VDC                              |             |       |
| Environment                                  | Operating Temperature                                       | -30°C...+70°C (with derating)                   |             |       |
|  | Storage Temperature   | -30°C...+85°C                                   |             |       |
|  | Temperature Coefficient                                     | ±0.05%/°C                                       |             |       |
|  | Altitude During Operation                                   | 5000m   |             |       |
|  | Humidity  | 20~90% RH                                       |             |       |
|  | Atmospheric Pressure  | 54 kPa to 106 kPa                               |             |       |
|  | MTBF  | >250,000 h @ 25°C (MIL-HDBK-217F, Notice 1)     |             |       |
| Vibration                                    | 10~500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes. |   |             |       |

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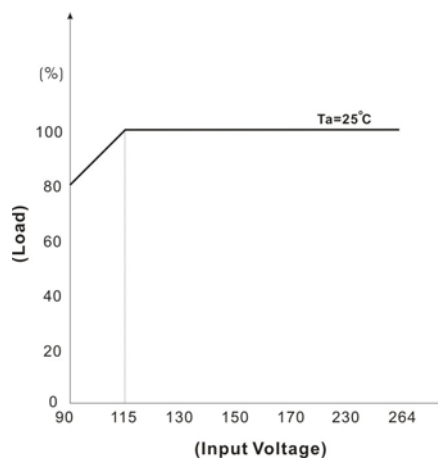
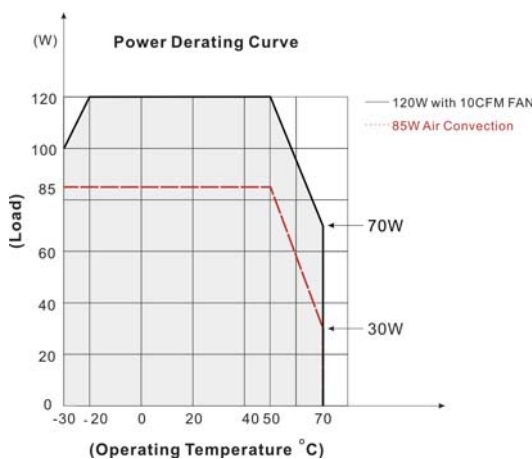
| Model No. |                        | MQF120E-12S   | MQF120E-24S | MQF120E-48S |
|-----------|------------------------|---|-------------|-------------|
| Physical  | Dimension (L x W x H)  | 3.15 x 2.35 x 1.7Inches ( 80.0 x 59.7 x 43.2) Tolerance ±0.5 mm |             |             |
|           | Weight                 | In Progress   |             |             |
|           | Cooling Method         | Free convection   |             |             |
| Safety    | Approval               | UL / IEC / EN 60601 3.1 <sup>rd</sup> Edition                   |             |             |
| EMC       | Conducted EMI (Note 5) | EN55011 Conducted & Radiated Class B (In Progress)              |             |             |
|           | Radiated EMI (Note 5)  | EN55011 Class I class B / Class II class A (In Progress)        |             |             |
|           | EMS                    | EN60601-1-2 4th edition (In Progress)                           |             |             |

## NOTE

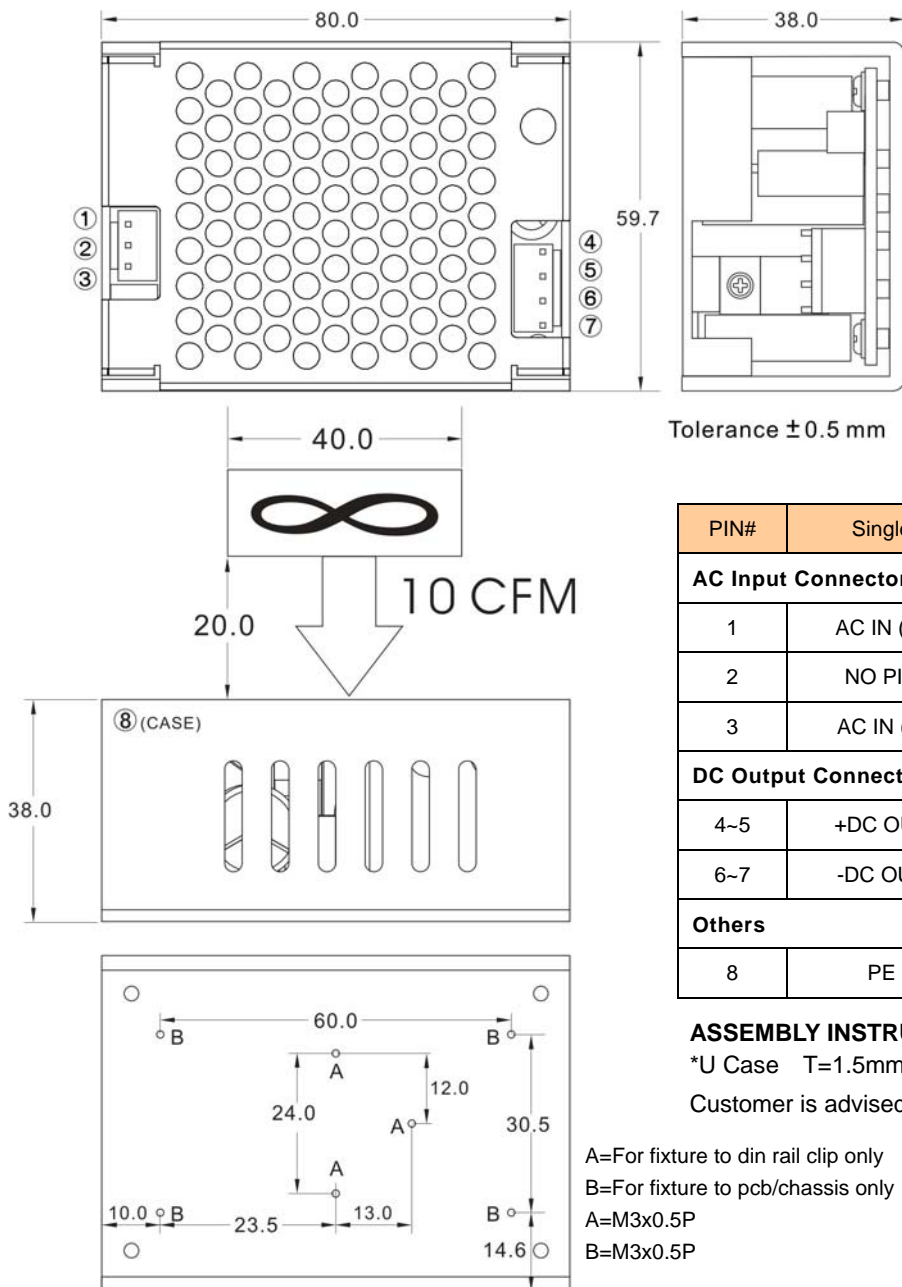
1. Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.
2. Hold-up Time measured at 90% Vout.
3. Please check the derating curve for more details.
4. Strongly recommend to conduct this test with AC Voltage. If customer wishes to test with DC Voltage, please disconnect all Y-Capacitors within Arch power supply.
5. Please secure the power supply unit to your metal case by using the four screw holes in the corners for either Class I or Class II equipment

## DERATING

If the input voltage is below 99VAC, we can only use it under the environment of higher than -10 celsius degree



**MECHANICAL DIMENSION ( Top View )**



| PIN#   | Single    | Mating Housing               | Terminal                         |
|--|-----------|------------------------------|----------------------------------|
| <b>AC Input Connector Pin : Alex 9397-3</b>  |           |                              |                                  |
| 1  | AC IN (N) | Alex 9396-3<br>or equivalent | Alex 96T Series<br>or equivalent |
| 2  | NO PIN    |                              |                                  |
| 3  | AC IN (L) |                              |                                  |
| <b>DC Output Connector Pin : Alex 9397-4</b> |           |                              |                                  |
| 4~5  | +DC OUT   | Alex 9396-4<br>or equivalent | Alex 96T Series<br>or equivalent |
| 6~7  | -DC OUT   |                              |                                  |
| <b>Others</b>                                |           |                              |                                  |
| 8  | PE        |                              |                                  |

**ASSEMBLY INSTRUCTIONS**

\*U Case T=1.5mm

Customer is advised to screw into the threads no more than 2.5mm

- A=For fixture to din rail clip only
- B=For fixture to pcb/chassis only
- A=M3x0.5P
- B=M3x0.5P

**BLOCK DIAGRAM**

