



### KEY FEATURES

- Switching Power Module for PCB Mountable
- 4000VAC Input to Output 2MOPP Insulation
- Cooling by Free Air Convection
- High Efficiency up to 93.5%
- With P.F.C. Function >0.9
- <0.5W No Load Input Power
- Protections: Over Load / Over Voltage / Over Temperature / Short Circuit
- 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 & UL / IEC / EN 60950 AM2 Safety Approvals
- 3-Year Product Warranty



MQC100 SERIES

### ELECTRICAL SPECIFICATIONS

All specifications valid at 230VAC input voltage, full load and +25°C after warm-up time unless otherwise stated.

| Model No.                          | MQC100-12S                                                  | MQC100-24S                                                                                                          | MQC100-48S |       |
|------------------------------------|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|------------|-------|
| Max Output Wattage (W)             | 100 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                                                                                                 |            |       |
| Output                             | Voltage (V.DC.)                                             | 12V                                                                                                                 | 24V        | 48V   |
|                                    | Voltage Accuracy                                            | ±2%                                                                                                                 |            |       |
|                                    | Current (A) (max.)                                          | 8.33                                                                                                                | 4.2        | 2.1   |
|                                    | Line Regulation                                             | ±1%                                                                                                                 |            |       |
|                                    | Load Regulation (0-100%)                                    | ±1%                                                                                                                 |            |       |
|                                    | Minimum Load                                                | 0%                                                                                                                  |            |       |
|                                    | Maximum Capacitive Load                                     | 6000µF                                                                                                              | 2000µF     | 330µF |
|                                    | Ripple & Noise (max.) (Note 1)                              | 1% Vout                                                                                                             |            |       |
|                                    | Efficiency (at 230VAC) (Note 4)                             | 92.5%                                                                                                               | 93%        | 93.5% |
| Hold-up Time (at 115 VAC) (Note 2) | 10 ms min.                                                  |                                                                                                                     |            |       |
| Protection                         | Over Power Protection                                       | Auto recovery, Hiccup mode                                                                                          |            |       |
|                                    | Over Voltage Protection                                     | Auto recovery                                                                                                       |            |       |
|                                    | Over Temperature Protection                                 | Auto recovery                                                                                                       |            |       |
|                                    | Short Circuit Protection                                    | Protection level 1 (nominal) : Continuous, Auto recovery<br>Protection level 2 (instantaneous high current) : Latch |            |       |
| Isolation                          | Input-Output                                                | 4000VAC or 5656VDC                                                                                                  |            |       |
|                                    | Input-PE                                                    | 2000VAC or 2828VDC                                                                                                  |            |       |
|                                    | Output-PE                                                   | 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                                                    | 95% RH                                                                                                              |            |       |
|                                    | MTBF                                                        | >250,000 h @ 25°C (MIL-HDBK-217F, Notice 1)                                                                         |            |       |
|                                    | Atmospheric Pressure                                        | 56 kPa to 106 kPa                                                                                                   |            |       |
| Vibration                          | 10~500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axes. |                                                                                                                     |            |       |
| Physical                           | Dimension (L x W x H)                                       | 4.3 x 2.3 x 1.38 Inches ( 109.0 x 58.5 x 35.0 mm ) Tolerance ±0.5 mm                                                |            |       |
|                                    | Weight                                                      | 365 g                                                                                                               |            |       |
|                                    | Cooling Method                                              | Free convection                                                                                                     |            |       |



### ELECTRICAL SPECIFICATIONS

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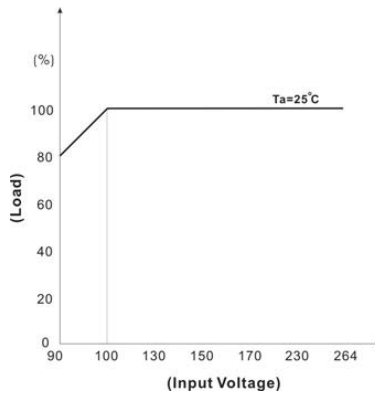
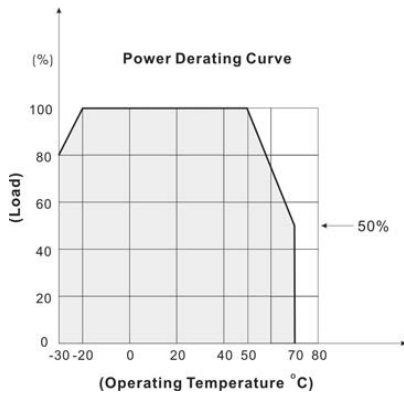
|           |                        |                                                                         |            |            |
|-----------|------------------------|-------------------------------------------------------------------------|------------|------------|
| Model No. |                        | MQC100-12S                                                              | MQC100-24S | MQC100-48S |
| Safety    | Approval               | UL / IEC / EN 60601 3.1 <sup>st</sup> Edition & UL / IEC / EN 60950 AM2 |            |            |
| EMC       | Conducted EMI (Note 5) | EN55011 Conducted & Radiated Class B                                    |            |            |
|           | Radiated EMI (Note 5)  | EN55011 Class I class B / Class II class A                              |            |            |
|           | EMS                    | EN60601-1-2 4th edition                                                 |            |            |

### 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. After 30 minutes of burn-in
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
6. Please refer to our PDF file "AC-DC Application" on our website: [www.archcorp.com.tw](http://www.archcorp.com.tw)

MQC100 SERIES

### DERATING

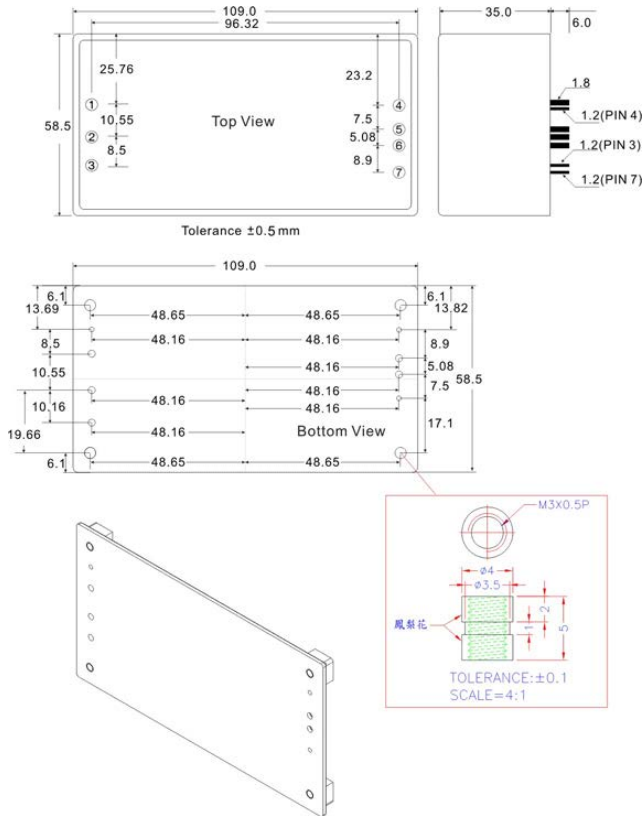


### TRIM

|            | 12S  |         | 24S    |         | 48S  |         |
|------------|------|---------|--------|---------|------|---------|
| Trim → +5% | 0%   |         | +5%    | 0%      | +5%  | 0%      |
| Trim → -V  | 34KΩ | ~ 10MΩ  | 37.4KΩ | ~ 10MΩ  | 38KΩ | ~ 10MΩ  |
| Trim → 0%  | -5%  |         | 0%     | -5%     | 0%   | -5%     |
| Trim → +V  | 10MΩ | ~ 106KΩ | 10MΩ   | ~ 270KΩ | 10MΩ | ~ 640KΩ |



### MECHANICAL DIMENSION ( Top View )

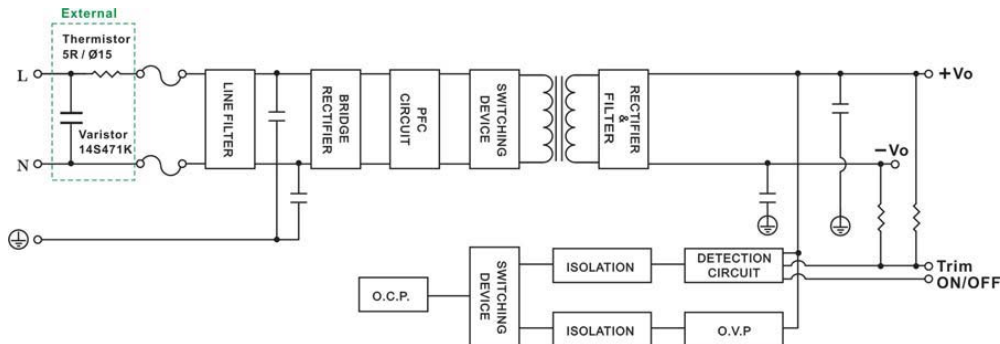


| PIN# | Φ          | Single                                 |
|------|------------|----------------------------------------|
| 1    | 1.2±0.1%mm | AC IN (N)                              |
| 2    | 1.2±0.1%mm | AC IN (L)                              |
| 3    | 1.2±0.1%mm | PE                                     |
| 4    | 1.2±0.1%mm | ON / OFF<br>(Provide +5Vdc Controlled) |
| 5    | 1.8±0.1%mm | +DC OUT                                |
| 6    | 1.8±0.1%mm | -DC OUT                                |
| 7    | 1.2±0.1%mm | Trim                                   |

**Remark:**  
Please reserve the pin 4 hole on PCB.  
If the remote on/off function is not required, please connect the pin 4 circuit layout with pin6, or keep pin 4 floating.

MQC100 SERIES

### BLOCK DIAGRAM



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Revision 1