# Features

1. Universal input: 85~305VAC, 47~63Hz
2. Regulated single output Isolation voltage 4000VAC Typical efficiency 74 … 81%
3. Energy saving, standby power only less than 0.1W
4. Operating temperature range:-40~+85°C
5. No external components required for operating
6. Over voltage, over current and short circuit protection
7. Meet to IEC/EN/UL62368-1, OVC Ⅲ, EN60335-1, EN61558-1, FCC, UKCA, CISPR32, EN55032 , Class B with NO externals
8. 3 year warranty

RoHS CE 3 years Warranty

# Selection Guide

| Model Number | Input Voltag [VAC] | Output Voltage [VDC] | Output Current [mA] Max. | Ripple & Noise [mVp-p] Max. | Efficiency [%] Typ. | Capacitive Load [uF] Max. |
|---|---|---|---|---|---|---|
| QM05-23B03R2-M | 85~305VAC 100~430VDC | 3.3 | 1250 | 200 | 74 | 4000 |
| QM05-23B05R2-M | | 5 | 1000 | 200 | 78 | 3000 |
| QM05-23B09R2-M | | 9 | 555 | 200 | 79 | 1200 |
| QM05-23B12R2-M | | 12 | 416 | 200 | 80 | 1200 |
| QM05-23B15R2-M | | 15 | 333 | 200 | 80 | 680 |
| QM05-23B24R2-M | | 24 | 208 | 200 | 81 | 220 |

# Input & Output Specification

| Parameters | Condition | Min. | Typ. | Max. | Unit | Note |
|---|---|---|---|---|---|---|
| Input voltage range | AC in<br>DC in | 85<br>100 | - | 305<br>430 | VAC<br>VDC | |
| Input frequency | | 47 | - | 63 | Hz | |
| Nominal input voltage | | 100 | - | 277 | VAC | |
| Input current | 115VAC<br>230VAC | - | - | 0.13<br>0.07 | A | |
| Inrush current Cold start | 115VAC<br>230VAC | - | 35<br>70 | - | A | |
| Leakage current | 230VAC, 50Hz | - | 0.25 | 0.6 | mA RMS | |
| Output voltage accuracy | | - | ±3 | - | % | |
| Line regulation Full load | | - | ±0.5 | - | % | |
| Load regulation<br>$I_{OUT}$=0%~100% of $I_{OUT, rated}$ | | - | ±1.0 | - | % | |
| Ripple and noise<br>20MHz bandwidth, peak to peak | | - | 150 | 200 | mV | |
| Temperature coefficiency | | - | ±0.03 | - | %/°C | |
| Standby power consumption | | - | 0.10 | - | W | |
| Hold up time Full load | 115VAC<br>230VAC | - | 10<br>50 | - | mS | |
| Over load protection | | 115 | - | 190 | %$I_{OUT, rated}$ | |
| Over voltage protection | $V_{OUT}$=3.3, 5V<br>$V_{OUT}$=9, 12V<br>$V_{OUT}$=15V<br>$V_{OUT}$=24V | - | - | 8.5<br>20<br>24<br>34 | VDC | |
| Short circuit protection | | Hiccup mode, automatic recovery | | | | |
| Internal fuse | | 2A, 300V, slow blow | | | | |
| Minimum load | | No minimum load is required | | | | |

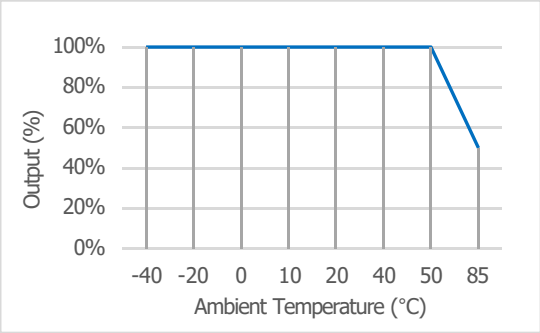
* Ripple and noise measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor.

# General Specifications

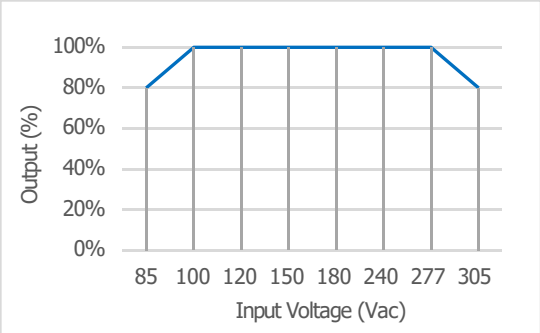
| Parameters | Condition | Min. | Typ. | Max. | Unit | Note |
|---|---|---|---|---|---|---|
| Isolation voltage Tested for 1 minute | I/P to O/P | 4000 | - | - | VAC | |
| Isolation resistance 500VDC, 25°C, 70%RH | I/P to O/P | 100 | - | - | M Ohm | |
| Switching frequency | | - | 65 | - | KHz | |
| Operating temperature range | See "Derating Curve" | -40 | - | 85 | °C | |
| Storage temperature | | -40 | - | 105 | °C | |
| Storage humidity | | 10 | - | 95 | %RH | |
| Maximum case temperature | | - | - | 95 | °C | |
| Soldering temperature | 5 seconds | - | 260 | - | °C | |
| Case material | | Black plastic UL94-V0 | | | | |
| Cooling method | | Free air convection | | | | |
| Class II power | | Yes, no FG | | | | |
| Vibration | | 10Hz to 55Hz, 5G, 30 minutes along X, Y and Z axis | | | | |
| MTBF | MIL-HDBK-217F | > 1,000,000 Hours, 25°C | | | | |
| Design based on standards | | RoHS & REACH directives, IEC/EN/UL 62368-1, OVC II, EN 60335-1, EN 61558-1, UKCA | | | | |
| Safety certifications | | IEC/EN/UL 62368-1, EN 60335-1, EN 61558-1, UKCA | | | | |
| EMC | CE<br>ESD<br>RS<br>EFT<br>Surge<br>CS | CISPR32, EN55032 Class B with "NO External Circuit"<br>IEC/EN61000-4-2, Contact ±8kV, Air ±15kV, Criteria B<br>IEC/EN61000-4-3, 10V/m, Criteria A<br>IEC/EN61000-4-4, ±2kV, Criteria B<br>IEC/EN61000-4-5, Line to Line ±2kV, Criteria B<br>IEC/EN61000-4-6, 10Vrms, Criteria A | | | | |
| Size, and Weight | | 45.7x25.4x21.5mm, 37g | | | | |
| Packing | | 350pcs/carton, size: 460x350x285mm, 14Kg G.W. | | | | |

# Characteristic Curves

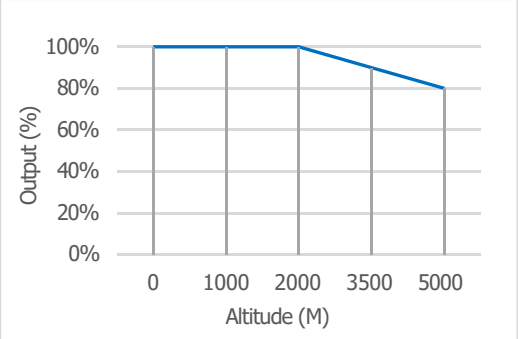
Output vs Ambient Temperature




Output vs Input Voltage



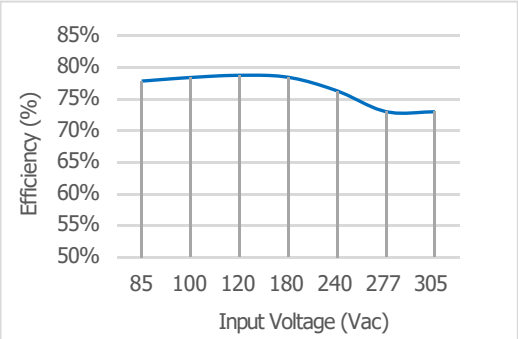

Output vs Altitude




## Efficency Curve

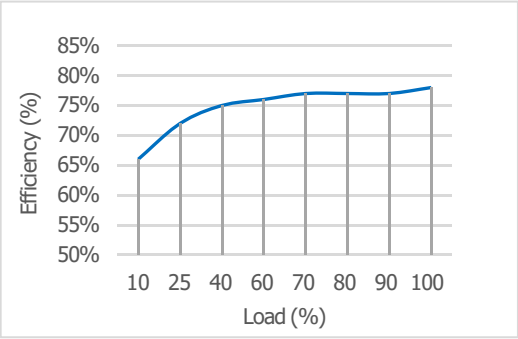
Efficiency vs Input Voltage

QM05-23B05R2, Full load

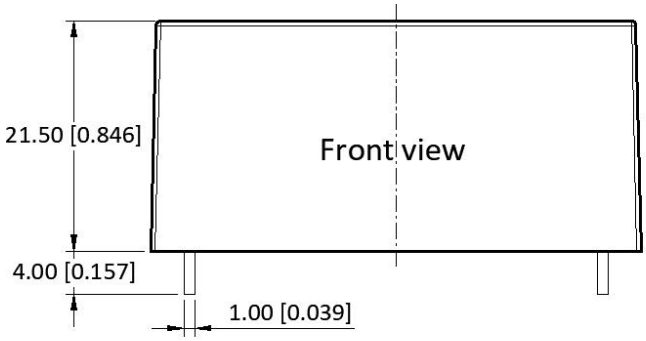


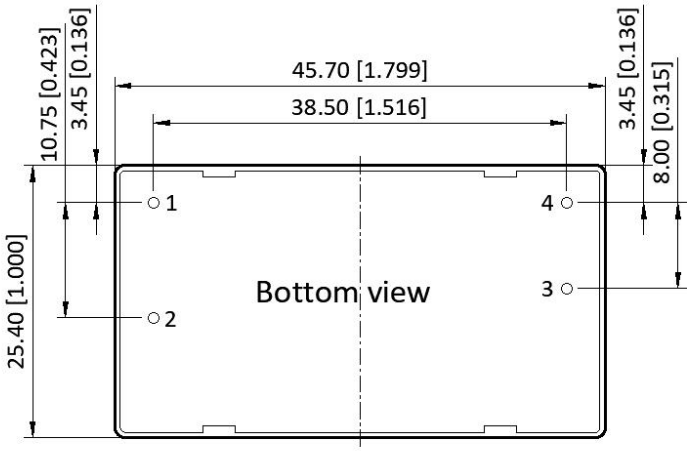

Efficiency vs Load

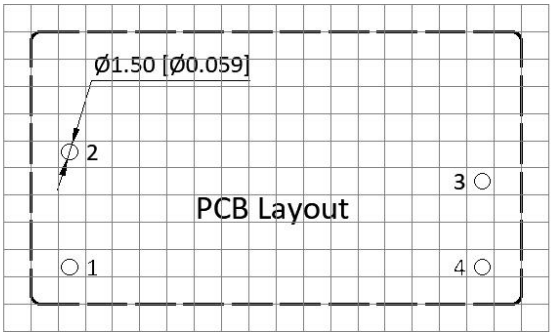
QM05-23B05R2, 230VAC



# Mechanical Specifications




Pin Definition

| Pin # | Single Out |
|---|---|
| 1 | AC (L) |
| 2 | AC (N) |
| 3 | +$V_{OUT}$ |
| 4 | -$V_{OUT}$ |

* Unless otherwise specified unit: mm [inch]
* General tolerance: ±1.00 [±0.040]
* Pin thickness: ±0.15 [±0.006]
* Pin distance: ±0.50 [±0.020]
* Footprint grid 2.54 x 2.54 mm

# Notes & Instructions

1. If the product works under the minimum required load, it cannot guarantee that the performance of the product complies with all the performance indicators in this manual;
2. The maximum capacitive load is tested under the input voltage range and full load condition;
3. Unless otherwise stated, all indexes in this manual are measured at Ta=25℃, humidity <75%RH, nominal input voltage and rated output load;
4. All index testing methods in this manual are based on the enterprise standards of the company;
5. Our company can provide product customization, specific needs can directly contact our technical staff;
6. AMCHARD reserves the right to make changes to the product at any time without notice.