

### Features

1. Rated power: 15W Max
2. Universal input: 85~305VAC, 47~63Hz
3. Regulated single output Isolation voltage 4000VAC Typical efficiency 81 ... 87%
4. Energy saving, standby power only less than 0.1W
5. Operating temperature range: -40~+85°C
6. RoHS compliance
7. No external components required for operating
8. Over voltage, over current and short circuit protection
9. Meet to IEC/EN/UL62368-1, OVC III, EN60335-1, EN61558-1, FCC, UKCA, CISPR32, EN55032 Class B with NO externals
10. 3 year warranty



3 years  
Warranty

### Selection Guide

| Model Number   | Input Voltage [VAC]     | Output Voltage [VDC] | Output Current [mA] Rated | Output Current [mA] Max. | Efficiency [%] Typ. | Capacitive Load [uF] Max. |
|----------------|-------------------------|----------------------|---------------------------|--------------------------|---------------------|---------------------------|
| QM15-23B03R2-M | 85~305VAC<br>100~430VDC | 3.3                  | 4000                      | 4500                     | 81                  | 8000                      |
| QM15-23B05R2-M |                         | 5                    | 3000                      | 4000                     | 85                  | 8000                      |
| QM15-23B09R2-M |                         | 9                    | 1670                      | 2200                     | 85                  | 5400                      |
| QM15-23B12R2-M |                         | 12                   | 1250                      | 1670                     | 86                  | 4000                      |
| QM15-23B15R2-M |                         | 15                   | 1000                      | 1330                     | 87                  | 3000                      |
| QM15-23B24R2-M |                         | 24                   | 625                       | 830                      | 87                  | 1000                      |

\* Only typical models are listed, other models may be available, upon request.

## 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                                                                  | -                                           | -        | 0.5<br>0.3            | A           |      |
| Inrush Current<br>Cold start                                   | 115VAC<br>230VAC                                                                  | -                                           | 20<br>45 | -                     | A           |      |
| Leakage current                                                | 277VAC, 50Hz                                                                      | -                                           | -        | 0.1                   | mA RMS      |      |
| Output voltage accuracy                                        |                                                                                   | -                                           | ±3       | -                     | %           |      |
| Line regulation                                                | Full load                                                                         | -                                           | ±0.5     | -                     | %           |      |
| Load regulation<br>$I_{OUT}=0\%\sim 100\%$ of $I_{OUT, rated}$ |                                                                                   | -                                           | ±1.0     | -                     | %           |      |
| Ripple and noise<br>20MHz bandwidth, peak to peak              |                                                                                   | -                                           | 100      | 150                   | mV          |      |
| Temperature coefficient                                        |                                                                                   | -                                           | ±0.02    | -                     | %/°C        |      |
| Standby power consumption                                      |                                                                                   | -                                           | 0.1      | -                     | W           |      |
| Hold up time<br>Full load                                      | 115VAC<br>230VAC                                                                  | -                                           | 10<br>50 | -                     | mS          |      |
| Over voltage protection<br>Hiccup or clamping by zener diode   | $V_{OUT}=3.3, 5.0V$<br>$V_{OUT}=9.0V$<br>$V_{OUT}=12.0, 15.0V$<br>$V_{OUT}=24.0V$ | -                                           | -        | 7.5<br>15<br>20<br>30 | VDC         |      |
| Over current protection                                        | Automatic recovery                                                                | 110                                         | -        | -                     | % $I_{OUT}$ |      |
| Short circuit protection                                       |                                                                                   | Continuous, hiccup mode, automatic recovery |          |                       |             |      |
| Minimum load                                                   |                                                                                   | No minimum load is required                 |          |                       |             |      |
| Built in fuse                                                  |                                                                                   | 3.15A, 300V slow blow                       |          |                       |             |      |

\* Ripple and noise measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 1uF ceramic capacitor and a 10uF electrolytic capacitor in parallel.

## General Specifications

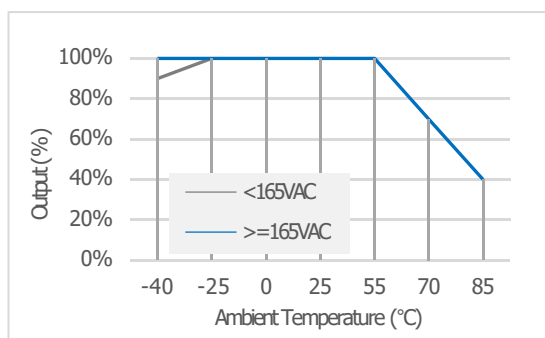
| Parameters                                  | Condition                                    | Min.                                                                                                                                                                                                                                                                                                                                          | Typ. | Max. | Unit  | Note |
|---------------------------------------------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|-------|------|
| Isolation voltage<br>Tested for 1 minute    | I/P to O/P                                   | 4000                                                                                                                                                                                                                                                                                                                                          | -    | -    | VAC   |      |
| Isolation resistance<br>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                       |                                              | -                                                                                                                                                                                                                                                                                                                                             | 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 III, EN 60335-1, EN 61558-1, UKCA                                                                                                                                                                                                                                                             |      |      |       |      |
| Safety certifications                       |                                              | IEC/EN/UL 62368-1, EN 60335-1, EN 61558-1, FCC, UKCA                                                                                                                                                                                                                                                                                          |      |      |       |      |
| EMC                                         | CE<br>ESD<br>RS<br>EFT<br>Surge<br>CS<br>DIP | CISPR32, EN55032 Class B with "NO External Circuit"<br>IEC/EN61000-4-2, Contact $\pm 6$ kV, Air $\pm 8$ kV, Criteria B<br>IEC/EN61000-4-3, 10V/m, Criteria A<br>IEC/EN61000-4-4, $\pm 2$ kV, Criteria B<br>IEC/EN61000-4-5, Line to Line $\pm 2$ kV,CriteriaB<br>IEC/EN61000-4-6, 10Vrms, Criteria A<br>IEC/EN61000-4-11, 0%, 70%, Criteria B |      |      |       |      |
| Size, and Weight                            |                                              | 52.4x27.2x24mm, 55g                                                                                                                                                                                                                                                                                                                           |      |      |       |      |
| Packing                                     |                                              | 200pcs/Carton, size: 335x345x210mm, 12.5Kg G.W.                                                                                                                                                                                                                                                                                               |      |      |       |      |

### Characteristic Curves

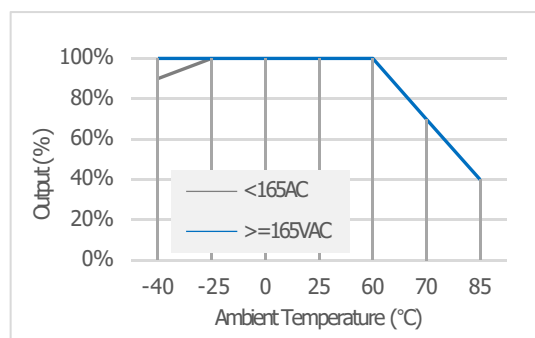
#### Derating Curve

Output vs Ambient Temperature

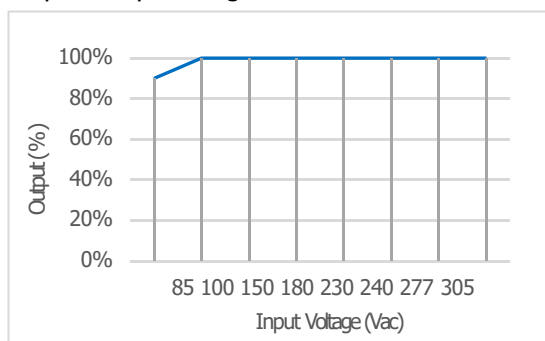
$V_{out}=3.3...9V$



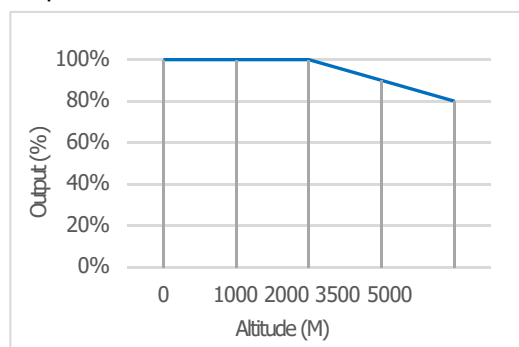
$V_{out}=12...24V$



Output vs Input Voltage

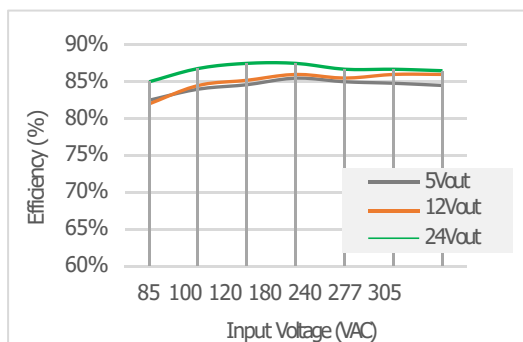


Output vs Altitude

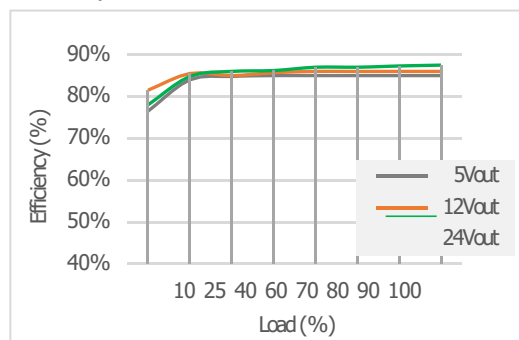


Efficiency Curves Efficiency

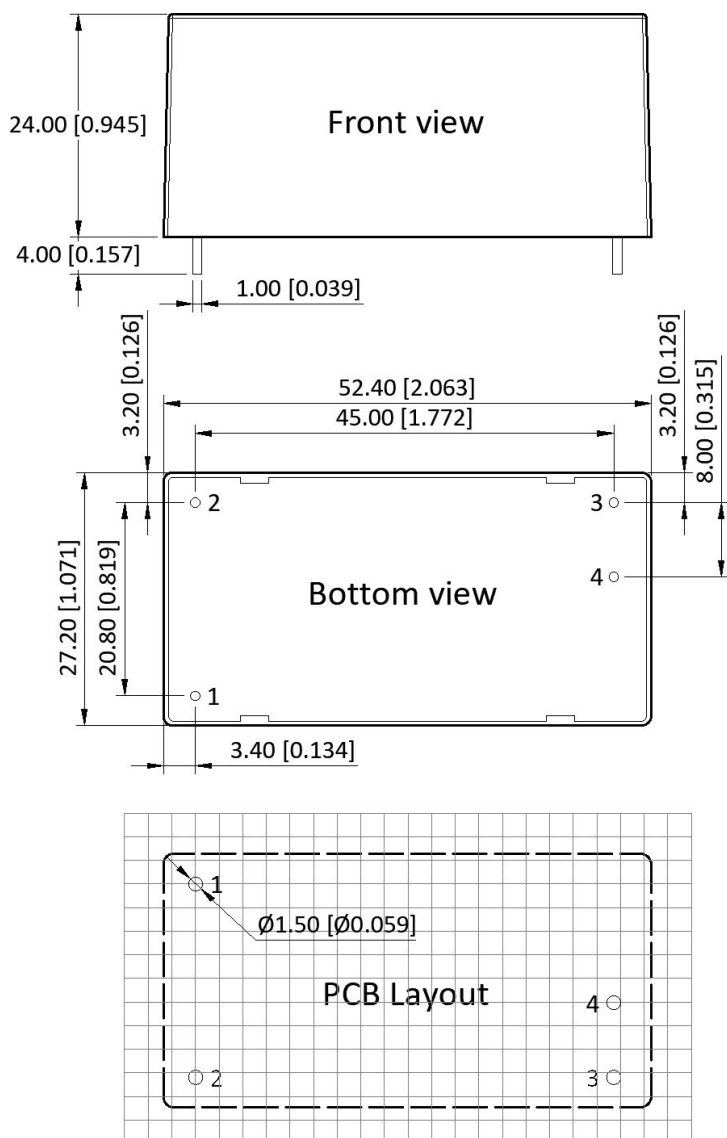
vs Input Voltage



Efficiency vs Load



### Mechanical Specifications



| Pin # | Single Out        |
|-------|-------------------|
| 1     | AC (L)            |
| 2     | AC (N)            |
| 3     | -V <sub>OUT</sub> |
| 4     | +V <sub>OUT</sub> |

Unless otherwise specified unit: mm [inch]  
 General tolerance:  $\pm 1.00$  [ $\pm 0.040$ ]  
 Pin thickness:  $\pm 0.15$  [ $\pm 0.006$ ]  
 Pin distance:  $\pm 0.50$  [ $\pm 0.020$ ]  
 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  $T_a=25^\circ\text{C}$ , humidity  $<75\%\text{RH}$ , 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.