

## Features:

1. Wide input range (90-305VAC,100-430VDC)
2. Size 87\*52\*30mm
3. No load power consumption<0.3W
4. Protection type: short circuit/ over load/ over voltage/ over temperature
5. Operating temperature range: -40°C to +85°C
6. 4000V isolation voltage, CLASS III over voltage level
7. 100% high temperature burn-in and function test
8. 3 years warranty



3 years  
Warranty

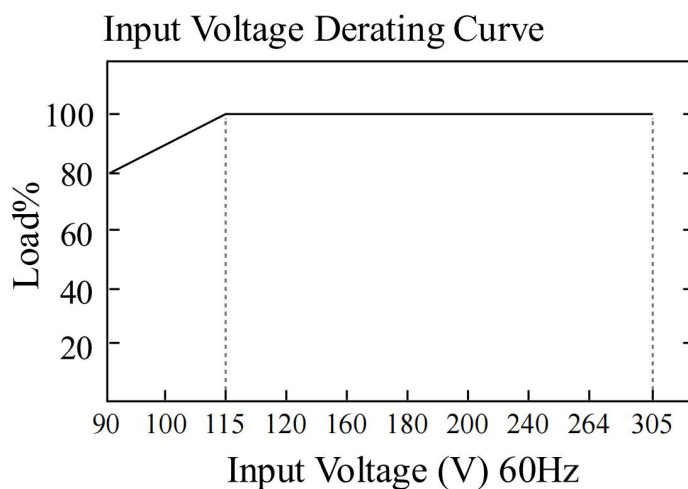
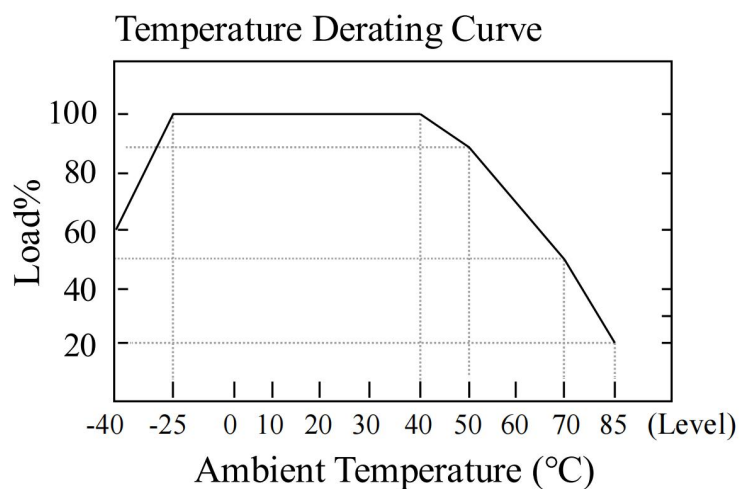
Model	Input Voltage	Rated Power (W)	Output Voltage (V)	Output Current (A)	Ripple & Noise (mVp-p)	Efficiency (%)
QM90-23B12R2	90-305VAC 100-430VDC	80	12	6.66	80	87
QM90-23B15R2		85	15	5.66	80	88
QM90-23B24R2		90	24	3.75	100	88
QM90-23B48R2		90	48	1.87	100	91

## Specifications

OUTPUT	Voltage Tolerance	±2.0%				
	Line Regulation	±1.0%				
	Load Regulation	±1.0%				
	Setup, Rise Time (Typ.)	1000ms, 50ms/230VAC 2000ms, 30ms/115VAC at full load				
	Hold Up Time (Typ.)	40ms/230VAC 10ms/115VAC at full load				
	Ripple & Noise (Max.) (Note 2.)	12/15V: 130mV		24/48V: 150mV		
INPUT	Voltage Range	90-305VAC 100-430VDC				
	Frequency Range	47-440Hz				
	Current (Typ.)	1.5A/115VAC 0.9A/230VAC				
	Inrush Current (Typ.)	60A/230VAC				
	External Fuse Recommended	T2A/250V				
	Leakage Current (Typ.)	<0.1mA/265VAC/50Hz				
PROTECTION	Over Load	≥110% load, recovers automatically after fault condition is removed				
	Short Circuit	Hiccup mode, recovers automatically after fault condition is removed				
	Over Temperature	Output off, recovers automatically after fault condition is removed				
	Over Voltage (Note 4.)	Output voltage clamp or hiccup				
		Voltage	12VDC	15VDC	24VDC	48VDC
		Range	≤16VDC	≤24VDC	≤35VDC	≤56VDC
ENVIRONMENT	Working Temp.	-40°C to +85°C (Refer to "Derating curve")				
	Working Humidity	85%RH max				
	Storage Temp., Humidity	-40°C to +85°C, 10-95%RH				
	Temp. Coefficient	0.03%/ (0-50°C)				
	Vibration	10-500Hz, 2G, 10min./1cycle, 60min.each along X, Y, Z axes				
SAFETY & EMC (NOTE 3.)	Safety Standards	EN62368-1, UL62368				
	Isolation Voltage	I/P-O/P: 4000VAC				
	Isolation Resistance	I/P-O/P: >100M Ohms/500VDC 25°C 70% RH				
	EMC Emission & Immunity	EN55011, EN55032 (CISPR32) CLASS B (Refer to "Typical Application")				
	ESD	IEC/EN 61000-4-2 level 4 Contact ±8kV/Air ±15kV (Refer to "Typical Application")				
	RF	IEC/EN 61000-4-3 (Refer to "Typical Application")				
	EFT	IEC/EN 61000-4-4 level 4 4kV (Refer to "Typical Application")				
	Surge	IEC/EN 61000-4-5 level 4 2kV				
OTHERS	MTBF	300K hrs min. MIL-HDBK-217F (25°C)				
	Dimension	87*52*29.5mm				
	Weight	210g/PCS 7.0kg/Carton				
	Package	30PCS/Carton				
	Carton Size	360*300*250mm				

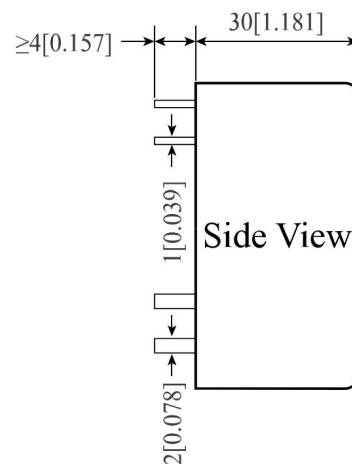
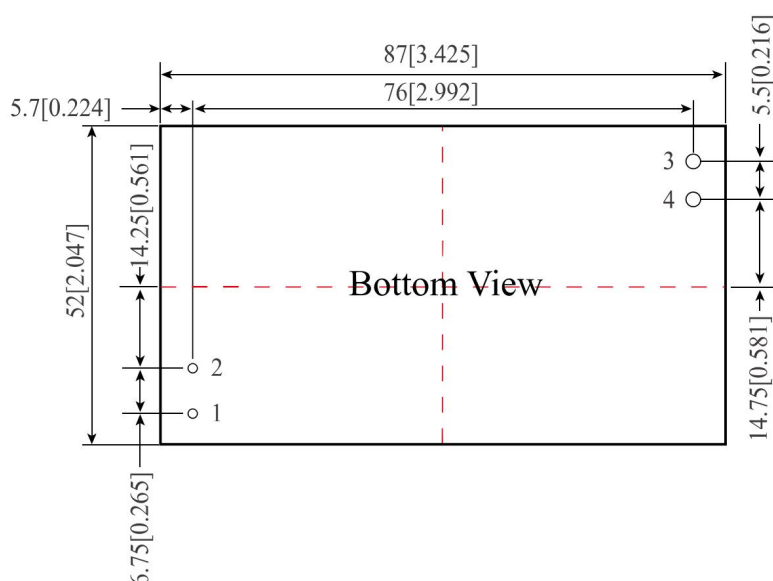
NOTE	1. All parameters not specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.
	2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor and connected according to "typical application". Element parameters shall be the same as those measured in the suggestion form.
	3. The power supply is considered as an independent unit, but the final equipment still need to re-confirm that the whole system complies with the EMC directives.
	4. This series of overvoltage protection protects the subsequent circuit in case of module abnormality through the peripheral TVS tube.

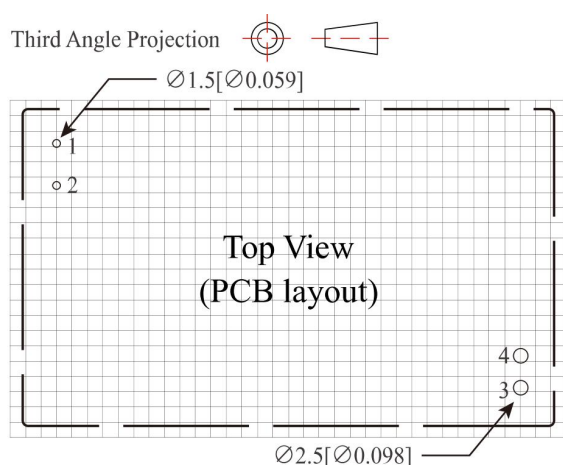
### Typical Characteristics Curve



### Mechanical Specification

Standard type package

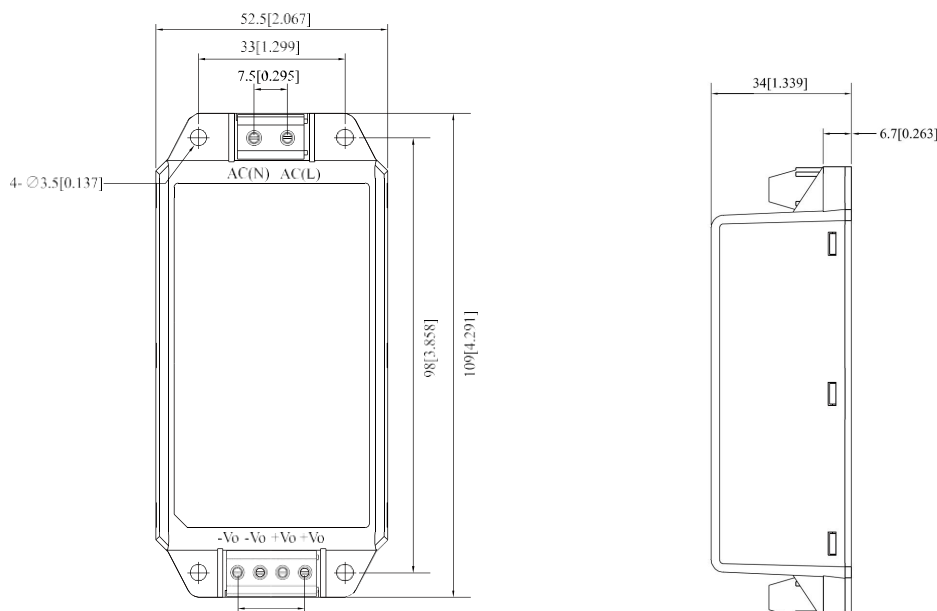




Note: Grid Spacing 2.54 \* 2.54mm

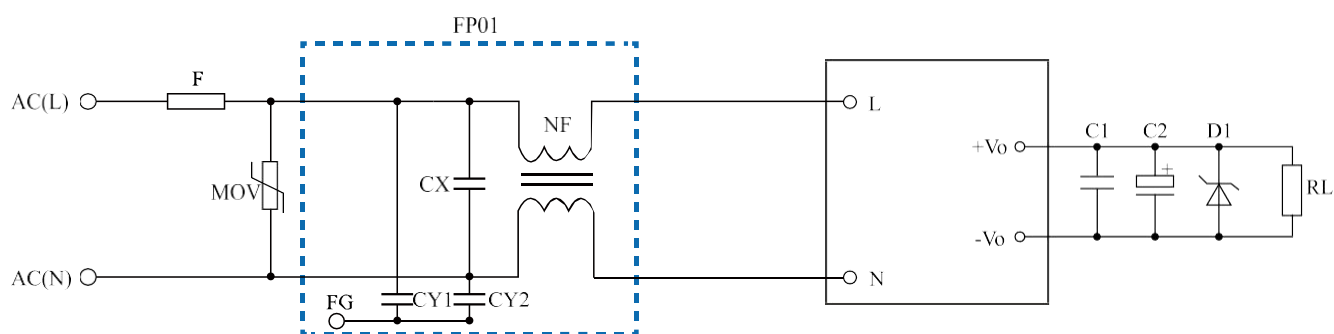
Pin	Function
1	AC(L)
2	AC(N)
3	+Vo
4	-Vo

### PCB mounting style



NOTE: Unit size: mm[inch] Terminal tolerance:  $\pm 0.1\text{mm}$  Unmarked tolerances:  $\pm 0.5\text{mm}$

### Typical Application



**NOTE:**

1. Output filter capacitor C2 is electrolytic capacitor. It is recommended to use high-frequency low-resistance electrolytic capacitor. Refer to technical specifications provided by manufacturers for capacity and current. C1 is to remove high frequency noise.
2. The dotted box in the figure shows the EMC filter connected to meet the higher EMC requirements. It can be omitted in general applications.
3. Our company has formed a filter with L1, CX and NF in the dashed box for customers to use. The model is FP01.

**List Of Components**

<b>Position Model</b>	<b>F</b>	<b>MOV</b>	<b>FP01</b>	<b>C1</b>	<b>C2</b>	<b>D1</b>
QM90-23B12R2	T2A/250V	Varistors 14D561K	Filter Type FP01	104K/50V (Ceramic capacitor)	220uF/50V	P6KE16A
QM90-23B15R2					220uF/50V	P6KE24A
QM90-23B24R2					120uF/50V	P6KE35A
QM90-23B48R2					100uF/63V	P6KE56A

**Notes:**

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°C, 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.