

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

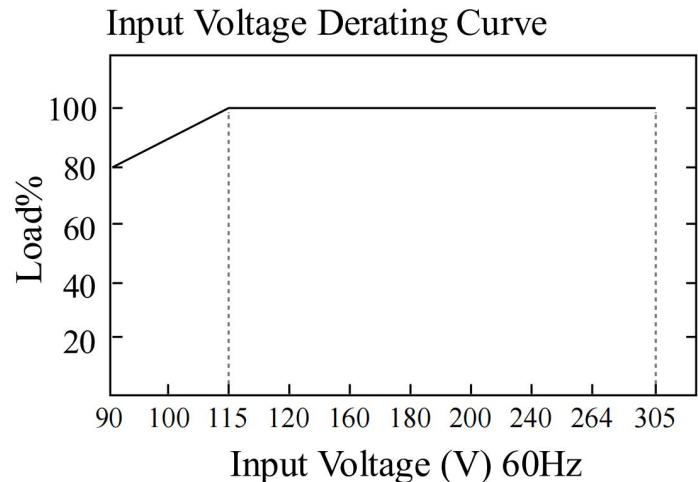
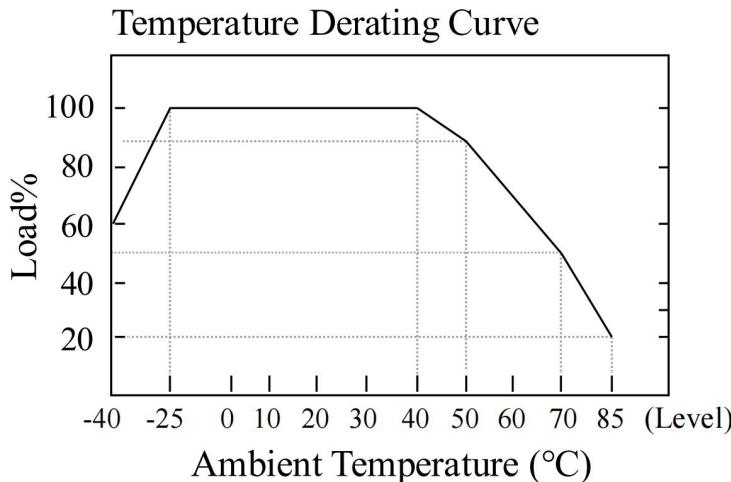
Model	Input Voltage	Rated Power (W)	Output Voltage (V)	Output Current (A)	Ripple & Noise (mVp-p)	Efficiency (%)
QM90-23B12R2	90-305VAC 100-430VDC	80	12	6.66	80	87
QM90-23B15R2		85	15	5.66	80	88
QM90-23B24R2		90	24	3.75	100	88
QM90-23B48R2		90	48	1.87	100	91

Specifications

OUTPUT										
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							
PROTECTION		Leakage Current (Typ.)	<0.1mA/265VAC/50Hz							
		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							

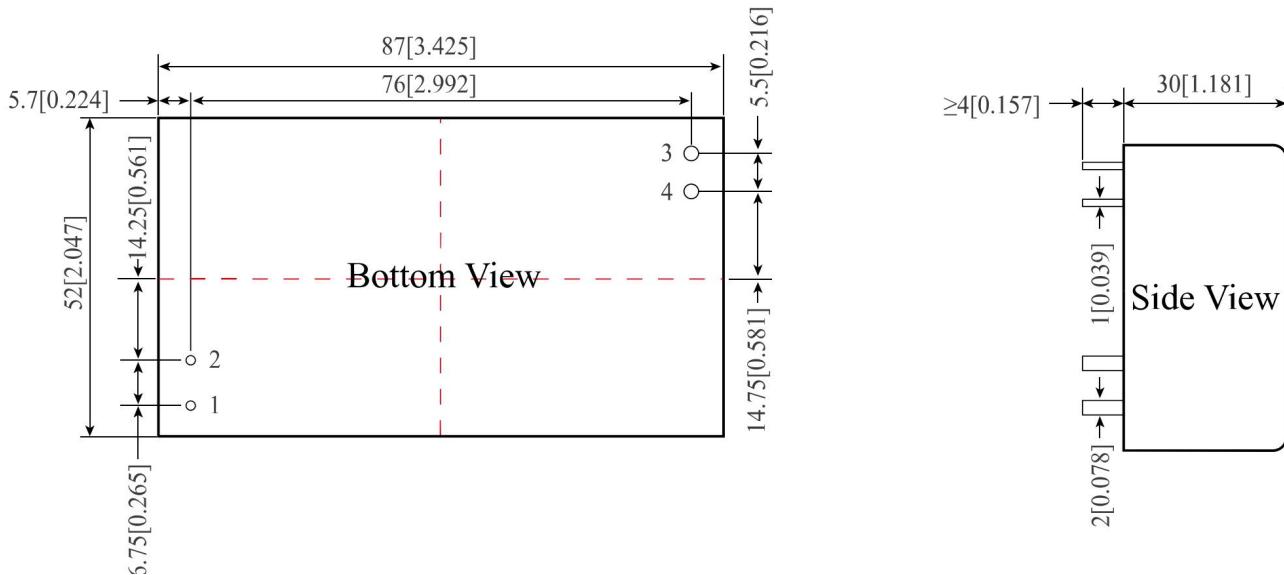
NOTE	1. All parameters not specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.
	2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor and connected according to "typical application". 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.

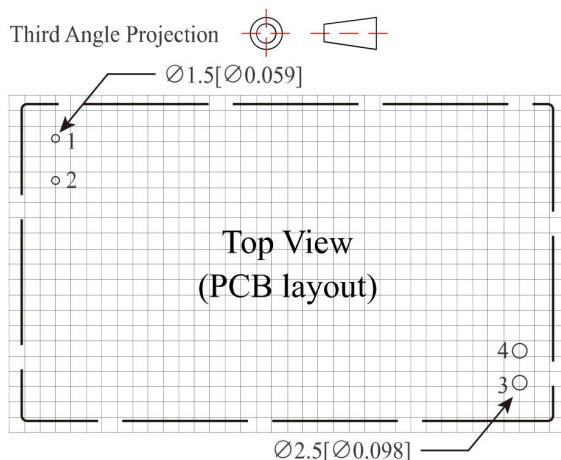
Typical Characteristics Curve



Mechanical Specification

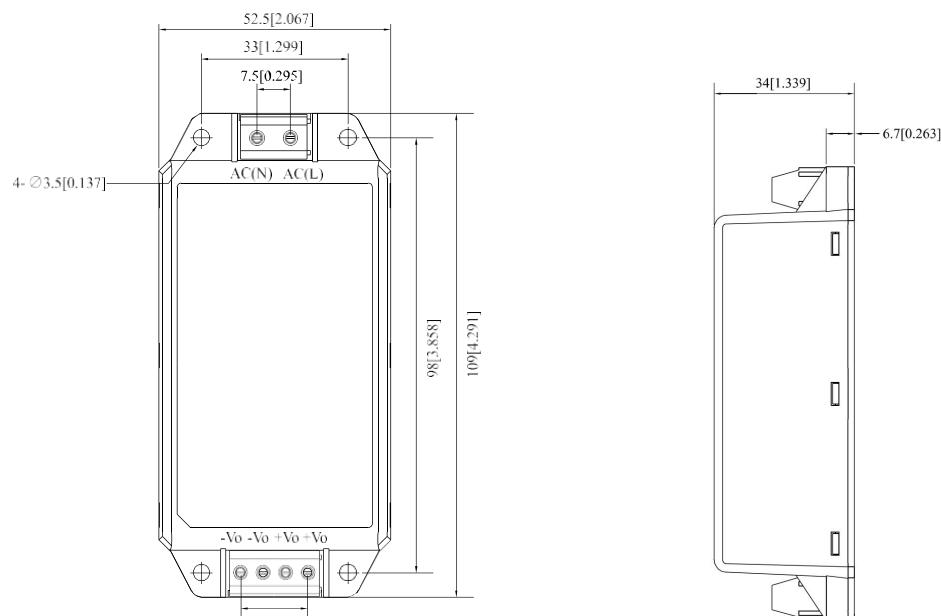
Standard type package





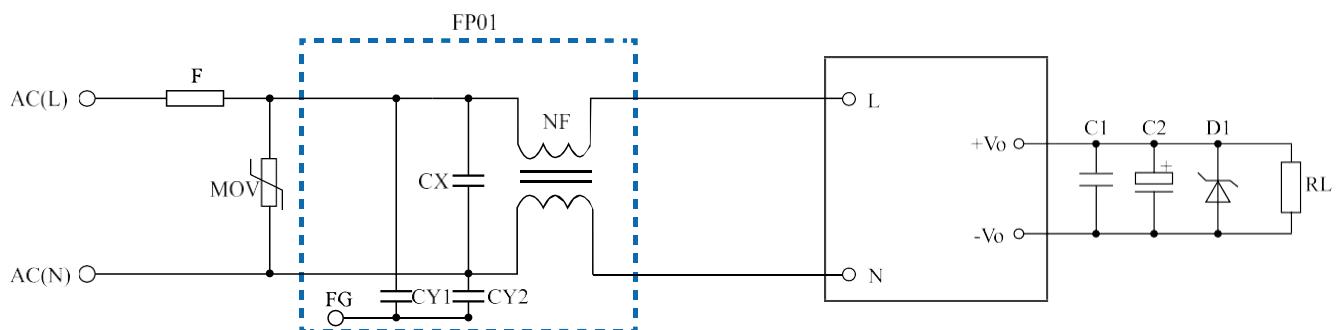
Pin	Function
1	AC(L)
2	AC(N)
3	+Vo
4	-Vo

PCB mounting style



NOTE: Unit size: mm[inch] Terminal tolerance: ± 0.1 mm Unmarked tolerances: ± 0.5 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

Model Position	F	MOV	FP01	C1	C2	D1
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 $T_a=25^{\circ}\text{C}$, 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.