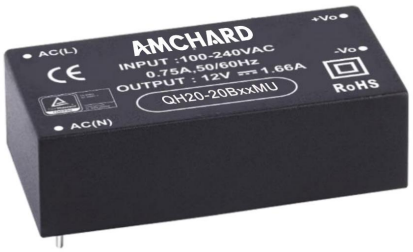
Features



1. Wide input range (85-264VAC, 100-370VDC)
2. 54.5*29.2*23.6mm compact size
3. No load power consumption<0.16W
4. Protection type: short circuit/over load/over voltage
5. Operating temperature range: -40℃ to +85℃
6. 4000V isolation voltage
7. Medical level safety certification (level 2 MOPP patient protection)
8. 100% high temperature burn-in and function test
9. 3 years warranty

RoHS CE 3 years Warranty

Selection Guide

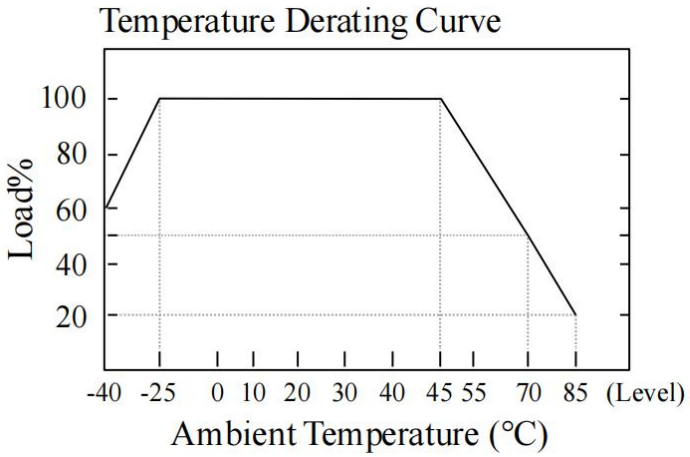
Model	Input Voltage	Rated Power (W)	Output Voltage (V)	Output Current (A)	Ripple & Noise (mVp-p)	Efficiency (%)
QH20-20B05MU	85-264VAC 100-370VDC	20	5	4	50	84
QH20-20B09MU		20	9	2.22	50	84
QH20-20B12MU		20	12	1.66	50	87
QH20-20B15MU		20	15	1.33	50	88
QH20-20B24MU		20	24	0.83	50	84

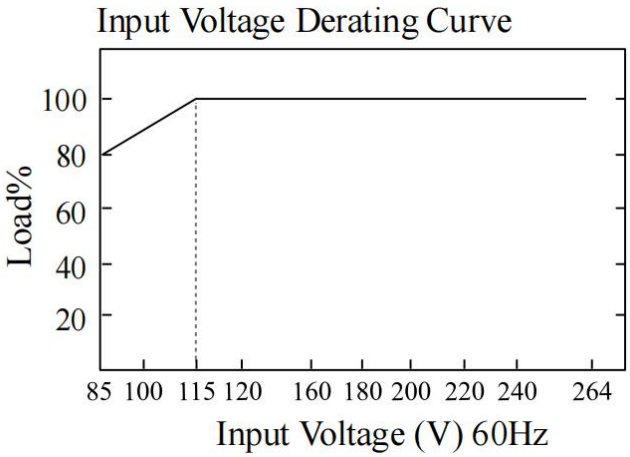
Specifications

OUTPUT	Voltage Tolerance	±2.0%					
	Line Regulation	±1.0%					
	Load Regulation	±1.0%					
	Setup, Rise Time (Typ.)	1000ms, 50ms/230VAC 2000ms, 60ms/115VAC at full load					
	Hold Up Time (Typ.)	40ms/230VAC 10ms/115VAC at full load					
	Ripple & Noise (Max.) (Note 2.)	100mV					
INPUT	Voltage Range	85-264VAC 100-370VDC					
	Nominal Voltage	100-240VAC					
	Frequency Range	47-440Hz					
	Current (Typ.)	750mA/115VAC 300mA/230VAC					
	Inrush Current (Typ.)	40A/230VAC					
	External Fuse Recommended	External 2A/250V optional (Note: Internal fuse is already included, specification: T3.15A/250VAC)					
	Leakage Current (Typ.)	Touch Current ＜ 80μA/264VAC					
PROTECTION	Over Load	≥110% load, recovers automatically after fault condition is removed					
	Short Circuit	Hiccup mode, recovers automatically after fault condition is removed					
	Over Voltage (Note 4.)	Voltage	5VDC	9VDC	12VDC	15VDC	24VDC
		Range	≤7.5VDC	≤12VDC	≤16VDC	≤20VDC	≤30VDC
ENVIRONMENT	Working Temp.	-40℃ to +85℃ (Refer to "Derating curve")					
	Working Humidity	85%RH max					
	Storage Temp., Humidity	-40℃ to +85℃, 10-95%RH					
	Temp. Coefficient	0.03%/ (0-50℃)					
	Vibration	10-500Hz, 2G, 10min./1cycle, 60min.each along X, Y, Z axes					
SAFETY & EMC (NOTE 3.)	Safety Standards	BS EN/EN60601-1					
	Isolation Voltage	I/P-O/P：4.0kVAC					
	Isolation Resistance	I/P-O/P：＞100M Ohms/500VDC 25℃ 70% RH					
	Conducted & Radiated Emissions	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℃)					
	Dimension	54.5*29.2*23.6mm (L*W*H)					
	Weight	57g/PCS					
	Package	210 PCS					
	Carton	360*300*250mm					

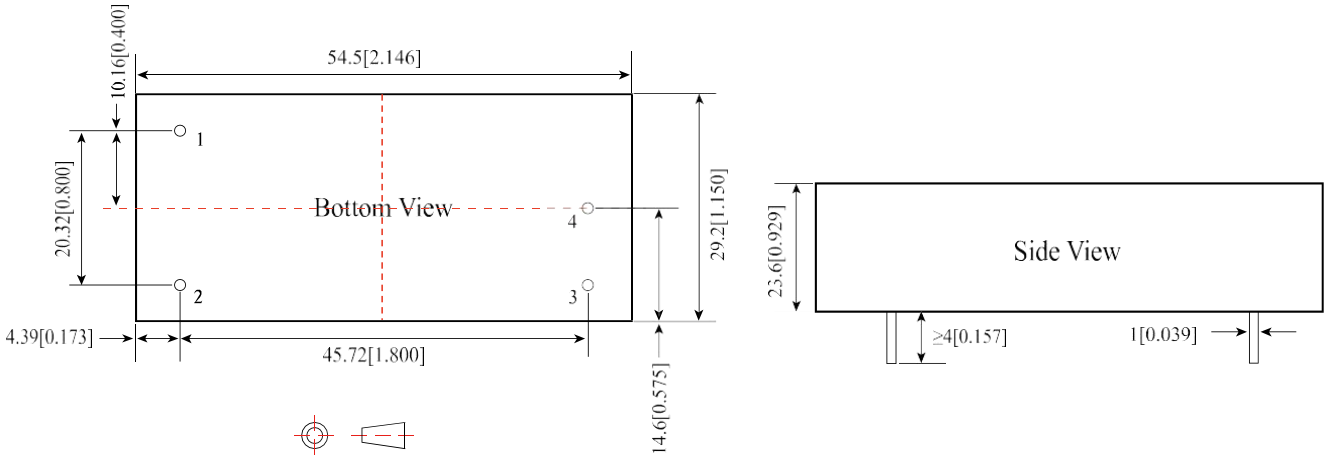
NOTE	1. All parameters not specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.
	2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor and connected according to "typical application".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

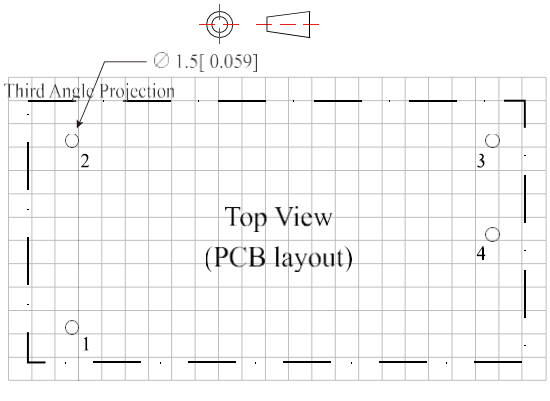
Derating Curve





Dimensions & Function



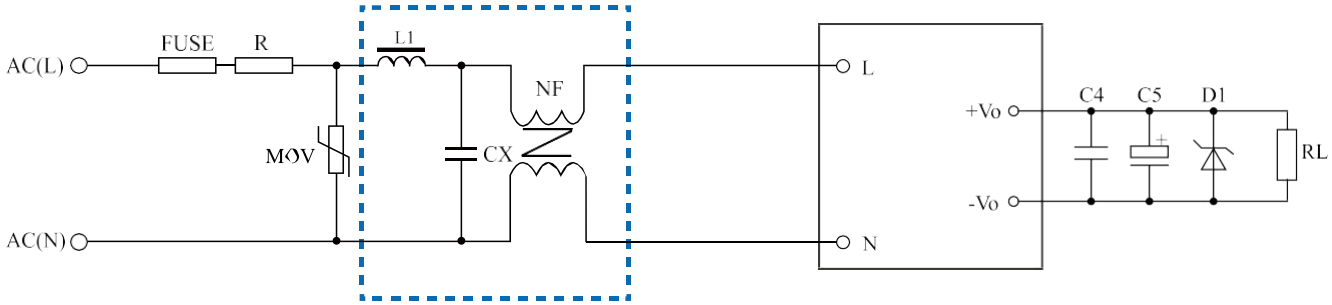


Note: Grid Spacing 2.54 * 2.54mm

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

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

Typical Application



NOTE:

1,The output filtering capacitor C5 is an electrolytic capacitor. It is recommended to use a high-frequency, low resistance electrolytic capacitor. Please refer to the technical specifications provided by each manufacturer for the capacity and current flowing through it. C4 is used to remove high-frequency noise.

2,The dashed box in the figure represents the EMC filter connected to meet higher EMC requirements, which can be omitted in general applications.

3,Our company has formed a filter consisting of L1, CX, and NF within the dashed box for customer use, with the model number FA01.

List Of Components

Position / Model	FUSE	NTC	NF	MOV	CX	L1	C4	C5	D1
QH20-20B05MU	T2A/250V	10D-9	Common mode inductance Inductance value 30mH Current 0.6A	14D471K	104K/275V	1mH/0.6A	104K/50V	470uF/16V	P6KE7.5A
QH20-20B09MU								470uF/16V	P6KE12A
QH20-20B12MU								470uF/16V	P6KE16A
QH20-20B15MU								150uF/16V	P6KE20A
QH20-20B24MU								120uF/35V	P6KE30A

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℃, 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.