

Features:

1. Wide input range (21.6-305VAC, 18-430VDC)
2. 55*45*21mm compact size
3. No load power consumption <0.5W
4. Protection type: short circuit/over load/over voltage
5. Operating temperature range: -40°C to +85°C
6. 4000V isolation voltage
7. 100% high temperature burn-in and function test
8. 3 years warranty



3 years
Warranty

Selection Guide

Model	Input Voltage	Rated Power (W)	Output Voltage (V)	Output Current (A)	Ripple & Noise (mVp-p)	Efficiency(%)
QM10-28B05	21.6-305VAC 18-430VDC	10.00	5	2	50	76
QM10-28B09		9.90	9	1.1	50	78
QM10-28B12		9.96	12	0.83	50	80
QM10-28B15		10.05	15	0.67	50	80
QM10-28B24		10.08	24	0.42	50	81

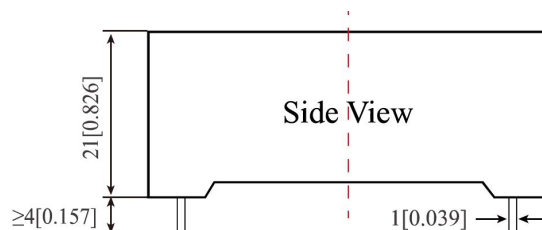
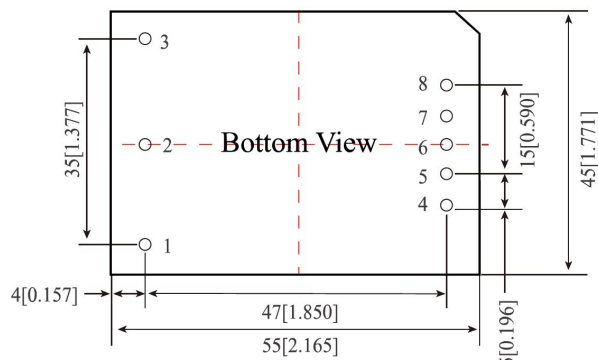
Specifications

OUTPUT	Voltage Tolerance	$\pm 2.0\%$					
	Line Regulation	$\pm 0.5\%$					
	Load Regulation	$\pm 1.0\%$					
	Setup, Rise Time (Typ.)	1200ms, 40ms/230VAC 1200ms, 130ms/115VAC at full load					
	Hold Up Time (Typ.)	40ms/230VAC 8ms/115VAC at full load					
	Ripple & Noise (Max.) (Note 2.)	100mV					
INPUT	Voltage Range	21.6-305VAC 18-430VDC					
	Frequency Range	47-63Hz					
	Current (Typ.)	350mA/115VAC 250mA/230VAC					
	Inrush Current (Typ.)	Cold boot 25A/115VAC 40A/230VAC					
	External Fuse Recommended	2A/300V					
	Leakage Current (Typ.)	<0.1mA/277VAC/50Hz					
PROTECTION	Over Load	$\geq 110\%$ load, recovers automatically after fault condition is removed					
	Short Circuit	Hiccup mode, recovers automatically after fault condition is removed					
	Over Voltage (Note 4.)	Output voltage hiccup					
		Voltage	5VDC	9VDC	12VDC	15VDC	24VDC
		Range	$\leq 7.5\text{VDC}$	$\leq 15\text{VDC}$	$\leq 20\text{VDC}$	$\leq 20\text{VDC}$	$\leq 35\text{VDC}$
ENVIRONMENT	Working Temp.	-40°C to $+85^{\circ}\text{C}$ (Refer to "Derating curve")					
	Working Humidity	85%RH max					
	Storage Temp., Humidity	-40°C to $+85^{\circ}\text{C}$, 10-95%RH					
	Temp. Coefficient	0.03%/ ($0-50^{\circ}\text{C}$)					
	Vibration	10-500Hz, 2G, 10min./1cycle, 60min.each along X, Y, Z axes					
SAFETY & EMC (NOTE 3.)	Safety Standards	IEC/UL62368-1, EN60335-1, EN61558-1					
	Isolation Voltage	I/P-O/P: 4000VAC					
	Isolation Resistance	I/P-O/P: $>100\text{M Ohms}/500\text{VDC } 25^{\circ}\text{C } 70\% \text{ RH}$					
	EMC Emission & Immunity	EN55011, EN55032 (CISPR32) (Refer to "Typical Application")					
	ESD	IEC/EN 61000-4-2 level 4 Contact $\pm 8\text{kV}/\text{Air } \pm 15\text{kV}$ (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 3 line to line 1kV					

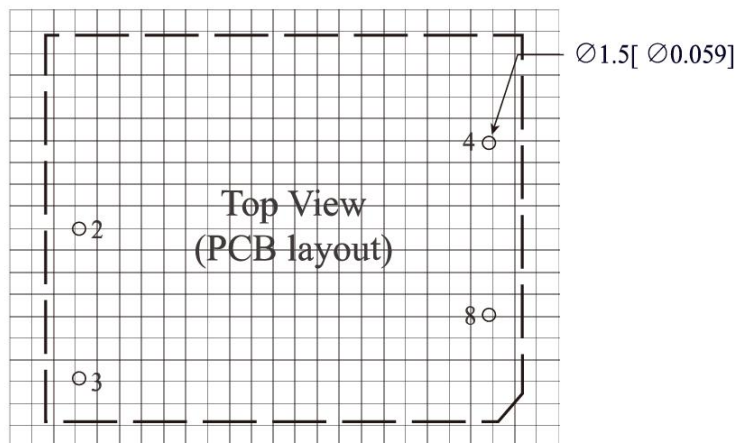
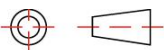
OTHERS	MTBF	300K hrs min. MIL-HDBK-217F (25°C)
	Dimension	55*45*21mm (L*W*H)
	Package	65g/PCS 112PCS/Carton 8.67kg/Carton
	Carton	360*300*250mm
NOTE	1. All parameters not specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.	
	2. Ripple & noise are measured at 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.	

Dimensions & Function

Standard type package



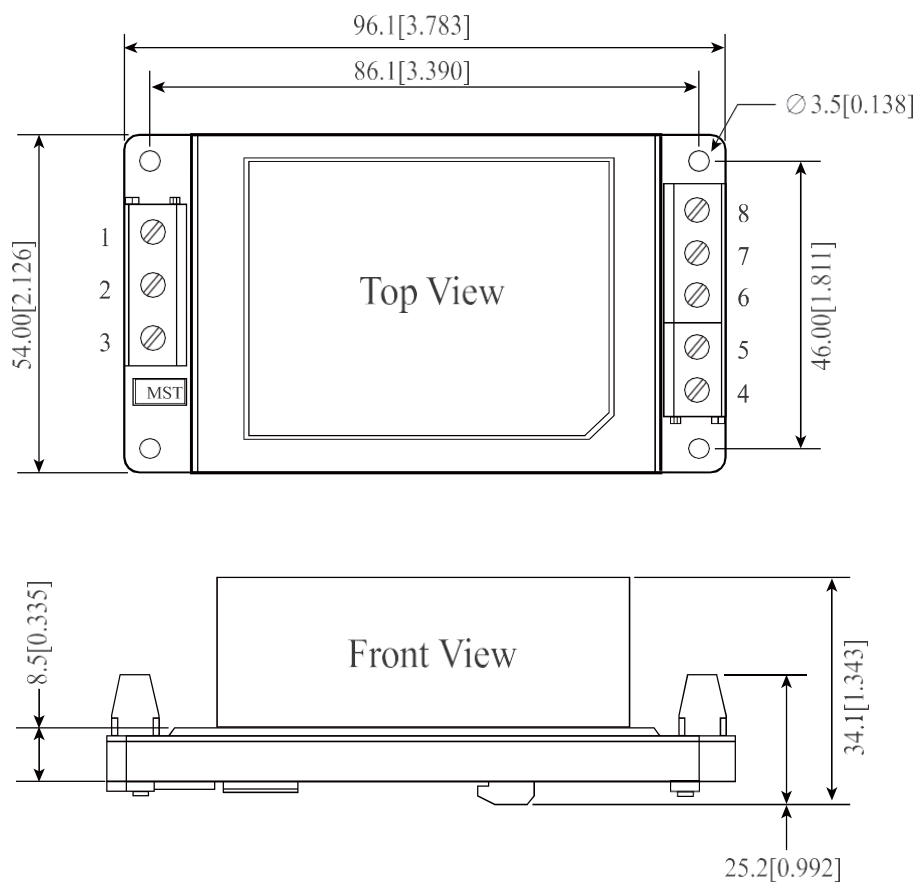
Third Angle Projection



Note: Grid Spacing 2.54 * 2.54mm

Pin	Function
1	No Pin
2	AC(N)
3	AC(L)
4	-Vo
5	No Pin
6	No Pin
7	No Pin
8	+Vo

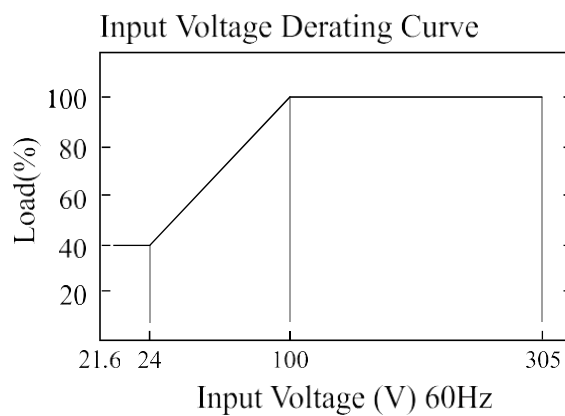
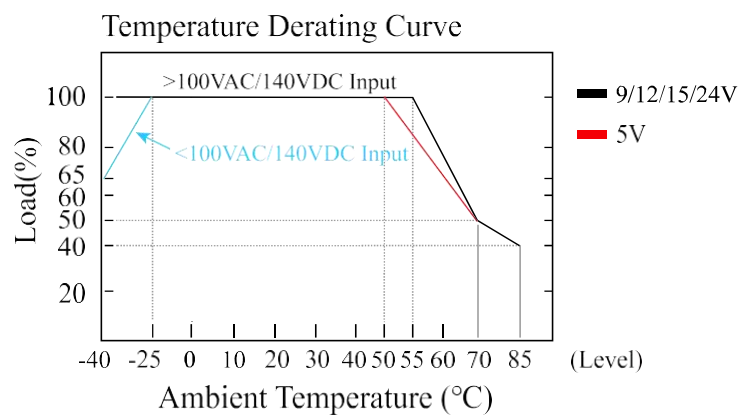
PCB mounting style/Rail-type package style



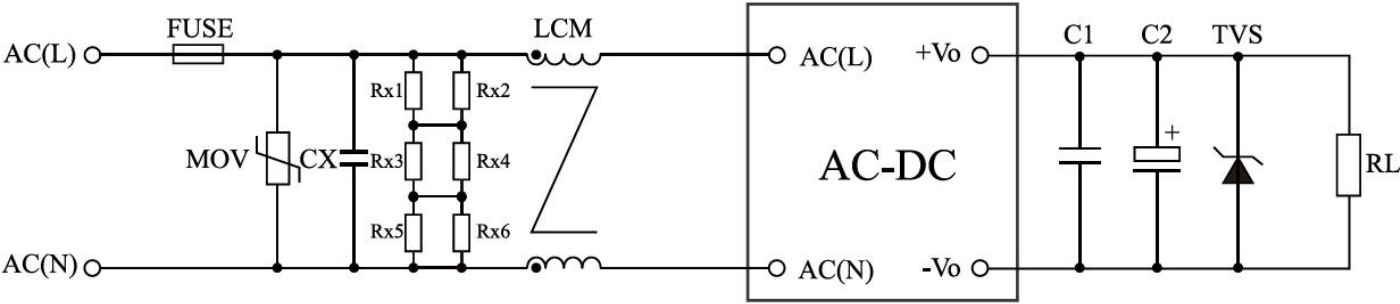
Pin	Function
1	NC
2	AC(N)
3	AC(L)
5	+Vo
6	NC
7	NC
8	NC
9	-Vo

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

Derating Curve



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. TVS tube is recommended to protect the downstream circuit when the module is abnormal.
- 3. Rx1/Rx2/Rx3/Rx4/Rx5/Rx6 are CX discharge resistors, with a recommended resistance of 1M Ω /150VDC.

List Of Components

Position Model	FUSE	MOV	CX	LCM	C1	C2	TVS
QM10-28B05	2A/300V	Varistors 14D561K	0.33uF/310VAC	25uH/2A	1uF/50V	220uF/16V	P6KE7.5A
QM10-2809						100uF/25V	P6KE15A
QM10-28B12						100uF/25V	P6KE20A
QM10-28B15						100uF/25V	P6KE20A
QM10-28B24						100uF/35V	P6KE30A