

MPM-05S Series

Universal Input, 5W Miniature PC Mount AC/DC Power Supplies



Key Features:

- 5W Output Power
- Universal 85-264 VAC Input
- EN 60950 Approved (UL)
- Six Single Output Models
- Meets EN 55022 B
- >300 kHour MTBF
- Compact PC Mount Case

The MPM-05S series is also available with a chassis mount or DIN mount adapter. Please contact the factory for more information



RoHS



MicroPower Direct

292 Page Street
Suite D
Stoughton, MA 02072
USA

T: (781) 344-8226

F: (781) 344-8481

E: sales@micropowerdirect.com

W: www.micropowerdirect.com



Electrical Specifications

Specifications typical @ +25°C, 230 VAC input voltage & rated output current, unless otherwise noted. Specifications subject to change without notice.

Input

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Range		85		264	VAC
		120		370	VDC
Input Frequency		47		63	Hz
Input Current	See Model Selection Guide				
Inrush Current	115 VAC		10.0		A Pk
	230 VAC		20.0		
EMI	Meets CISPR Pub. 22/FCC Class B				
Safety Ground Leakage Current	230 VAC		0.3		mA

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage	See Model Selection Guide				
Output Current	See Model Selection Guide				
Output Voltage Accuracy			±2.0		%
Line Regulation			±0.5		%
Load Regulation	See Note 2		±1.0		%
Ripple & Noise (20 MHz)			50	150	mV Pk - Pk
Hold-Up Time	115 VAC		15		mSec
	230 VAC		80		
Temperature Coefficient			±0.02		%/°C
Short Circuit Protection	Continuous (Autorecovery)				
Overload Protection	Autorecovery		110		%W

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	Input to Output	3,000			VAC
Switching Frequency				140	kHz

EMI Characteristics

Parameter	Conditions	Min.	Typ.	Max.	Units
Radiated Emissions	See Note 3	EN 55022		Class B	
Conducted Emissions	See Note 3	EN 55022		Class B	
ESD		EN 61000-4-2		Criteria B; ±8 kV Air/±6 kV Contact	
RS		EN 61000-4-3		Criteria A; 10V/m	
EFT	See Note 4	EN 61000-4-4		Criteria B; ±2 kV	
Surge	See Note 4	EN 61000-4-5		Criteria B; ±1 kV/ ±2 kV	

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-25	+25	+70	°C
Storage Temperature Range		-25		+105	°C
Cooling	Free Air Convection (See Derating Curve)				
Humidity	RH, Non-condensing			95	%

Physical

Case Size	See Mechanical Diagram On Page 2				
Case Material	Non-Conductive Black Plastic (UL94-V0)				
Weight	1.76 Oz (50g)				

Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	300			kHours
Safety Standards	UL 60950, EN 60950				

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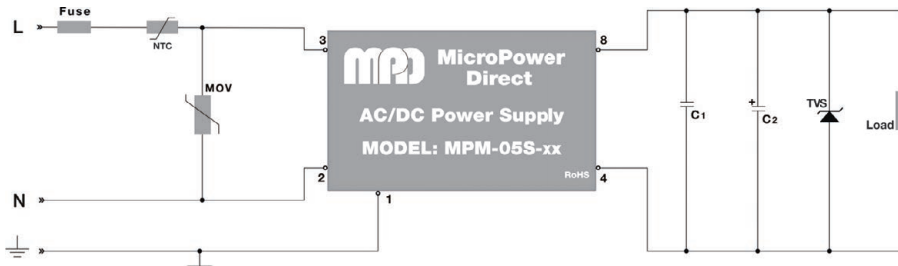
Model Number	Input		Output		Over Volt. Protection (VDC)	Efficiency (% Typ)
	Current (A)		Voltage (VDC)	Current (A Max.)		
	115 VAC	230 VAC				
MPM-05S-03	0.120	0.070	3.3	1.250	7.5	70
MPM-05S-05	0.120	0.070	5.0	1.000	7.5	75
MPM-05S-09	0.120	0.070	9.0	0.550	12.0	77
MPM-05S-12	0.120	0.070	12.0	0.420	20.0	79
MPM-05S-15	0.120	0.070	15.0	0.330	20.0	80
MPM-05S-24	0.120	0.070	24.0	0.230	30.0	82

Notes:

1. Operation at no load will not damage the units, however, they may not meet all specifications.
2. Load regulation is measured for an output change of 10% to 100% at nominal input line.
3. All units are rated for EN 55022 (CE/RE) class B without external components.
4. All units are rated for EN 61000-4-4 (± 2 kV) and EN 61000-4-5 (± 1 kV/ ± 2 kV) without external components. They will meet EN 61000-4-4 (± 4 kV), and EN 61000-4-5 (± 2 kV/ ± 4 kV) with additional input filtering as shown below.
5. It is recommended that a fuse be used on the input of a power supply for protection. For the **MPM-05S-xx** series, a 1.0A/250 VAC slow blow should be used.

Typical Connection

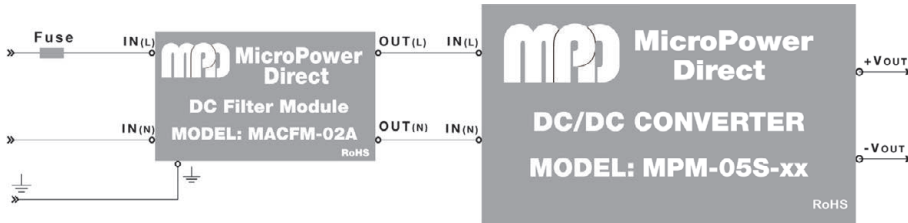
The diagram below illustrates a typical application connection of the **MPM-05S** series. Notes on this circuit (starting with the input circuit) are:



1. It is recommended that an external fuse and NTC be used. The recommended fuse is a 1.0A/250V slow blow and for the NTC, a 5D-9.
2. An external MOV is required on the input to protect the unit in the event of a surge. A S14K350 or equivalent is recommended.
3. Recommended output filtering capacitors are:

	C1	C2	TVS
MPM-05S-03	1.0 μ F/50V	330 μ F/10V	SMBJ7.0A
MPM-05S-05	1.0 μ F/50V	330 μ F/10V	SMBJ7.0A
MPM-05S-09	1.0 μ F/50V	120 μ F/10V	SMBJ12A
MPM-05S-12	1.0 μ F/50V	120 μ F/25V	SMBJ20A
MPM-05S-15	1.0 μ F/50V	68 μ F/25V	SMBJ20A
MPM-05S-24	1.0 μ F/50V	68 μ F/35V	SMBJ30A

Typical Connection: With MACFM-02A Input Module (See note 4)



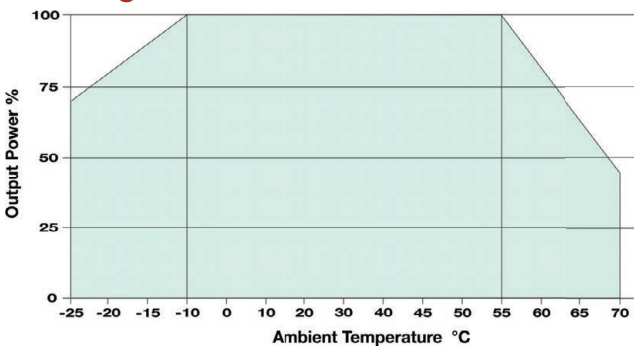
The output filtering capacitor (C2) is a high frequency, low resistance electrolytic capacitor. Capacitor (C1) is ceramic. Voltage derating of capacitors should be 80% or above.

4. Input noise and surge suppression modules are available for a number of **MPD** AC/DC power supplies. An **MPM-05S-xx** connection with the **MACFM-02A** is illustrated in the diagram at left. For pricing or full technical information on these modules, please contact the factory.

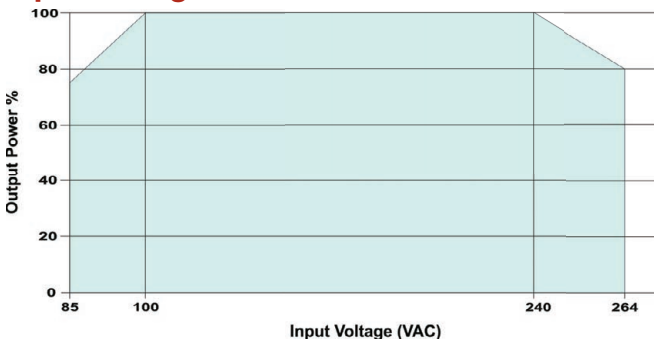
Pin Connections

Pin	Function	Pin	Function
1	AC-Ground	3	AC-Line
2	AC-Neutral	4	-Vout
		8	+Vout

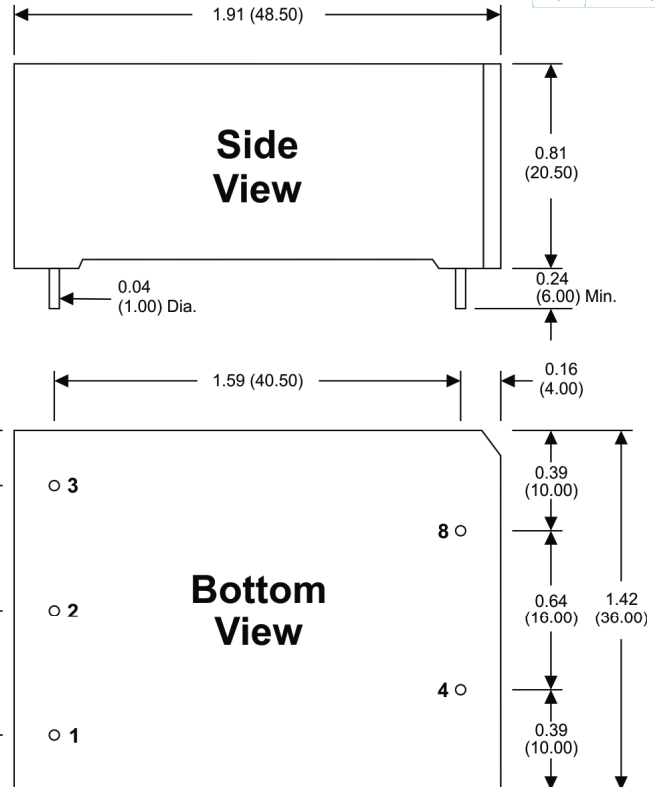
Derating Curve



Input Voltage Vs Load



Mechanical Dimensions



Notes:

- All dimensions are typical in inches (mm)
- Tolerance x.xx = ± 0.02 (± 0.50)