

MPM-10PB Series

Very Low Cost, 10W Compact "Power Brick" AC/DC Power Supplies



Key Features:

- 10W Output Power
- Compact 1.1 x 2.1 Inch Case
- Universal 85-264 VAC Input
- EN 60950 Approved
- Meets IEC Safety Class II
- Industry Standard Pin-Out
- Meets EN55022 Class B
- >200 kHour MTBF
- **Low, Low Cost**



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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		440	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				

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage	See Model Selection Guide				
Output Current	See Model Selection Guide				
Output Voltage Accuracy	See Note 1		±2.0		%
Line Regulation	V _{IN} = Min to Max		±0.5		%
Load Regulation	See Note 2		±1.0		%
Ripple & Noise (20 MHz)			50		mV P-P
Hold-Up Time	230 VAC, 60 Hz		50		mSec
Temperature Coefficient			±0.02		%/°C
Short Circuit Protection	Continuous (Autorecovery)				
Overload Protection		110			%W

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	Input to Output, Flash Tested For 60S	4,000			VAC
Isolation Resistance	500 VDC	100			MΩ
EMI/RFI	Conducted	EN 55022 Level B			
EMC Compliance	Electrostatic Discharge (ESD)	IEC/EN 61000-4-2 Level 4 8kV/15 kV			
	RF Field Susceptibility	IEC/EN61000-4-3			
	Electrical Fast Transients/Bursts On Mains	IEC/EN 61000-4-4 Level 4 4 kV			
Switching Frequency	Surge	IEC/EN 61000-4-5 Level 4 2kV/2 kV			
			60		kHz

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-25	+25	+70	°C
Operating Temperature Range	Case			+95	°C
Storage Temperature Range		-40		+105	°C
Cooling	Free Air Convection (See Derating Curve)				
Humidity	RH, Non-condensing			95	%

Physical

Case Size	2.10 x 1.12 x 0.75 Inches (53.5 x 28.5 x 19.00 mm)				
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	200			kHours
Safety Standards	IEN 60950, IEC 60950				
Safety Approvals	IEN 60950, IEC 60950				
Safety Class	IEC 61140 Class II				

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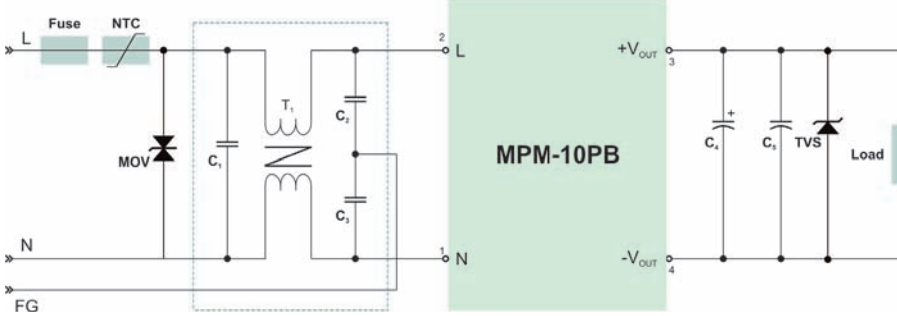
Model Number	Input		Output		Efficiency (% Typ)
	Current (A)		Voltage (VDC)	Current (A Max.)	
	115 VAC	230 VAC			
MPM-10S-03PB	0.230	0.150	3.3	2.000	70
MPM-10S-05PB	0.230	0.150	5.0	2.000	74
MPM-10S-09PB	0.230	0.150	9.0	1.100	76
MPM-10S-12PB	0.230	0.150	12.0	0.900	76
MPM-10S-15PB	0.230	0.150	15.0	0.700	78
MPM-10S-24PB	0.230	0.150	24.0	0.450	80

Notes:

- For the 3.3V output model, Output Accuracy is $\pm 3.0\%$
- Load regulation is measured for an output change of 10% to 100% at nominal input line.
- It is recommended that a fuse be used on the input of a power supply for protection. For the **MPM-10PB** series, a 2A/250 VAC slow blow should be used.

Typical Connection

The diagram below illustrates a typical application connection of the **MPM-10PB** series. Notes on this circuit (starting with the input circuit) are:



- It is recommended that an external fuse and NTC be used. The recommended fuse is a 2A/250V slow blow and for the NTC, a 5D-9.
- An external MOV is required on the input to protect the unit in the event of a surge. A 471KD05 or equivalent is recommended.
- For EMI sensitive applications, the input filtering circuit (inside the dotted boxes) may be added. The filter consists of a common mode choke and x/y caps:

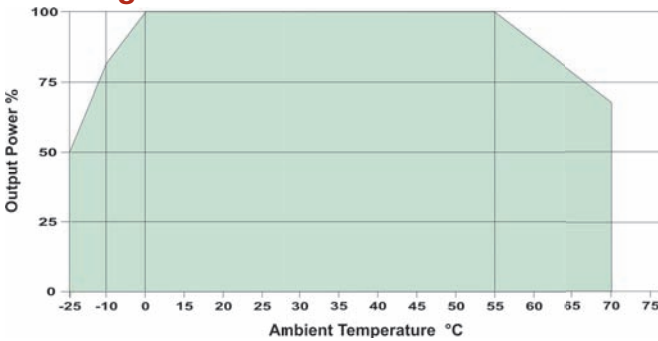
C ₁	C ₂ /C ₃	T ₁
0.1 μ F/275V	220 pF/400V	10 - 30 mH

- Recommended output filtering capacitors are:

	C ₄	C ₅	TVS
MPM-10S-03PB	220 μ F/10V	0.1 μ F/50V	P6KE6.8A
MPM-10S-05PB	220 μ F/10V	0.1 μ F/50V	P6KE6.8A
MPM-10S-09PB	120 μ F/25V	0.1 μ F/50V	P6KE12A
MPM-10S-12PB	120 μ F/25V	0.1 μ F/50V	P6KE20A
MPM-10S-15PB	120 μ F/25V	0.1 μ F/50V	P6KE20A
MPM-10S-24PB	68 μ F/35V	0.1 μ F/50V	P6KE30A

The output filtering capacitor (C₄) is a high frequency, low resistance electrolytic capacitor. Capacitor (C₅) is ceramic. Voltage derating of capacitors should be 80% or above.

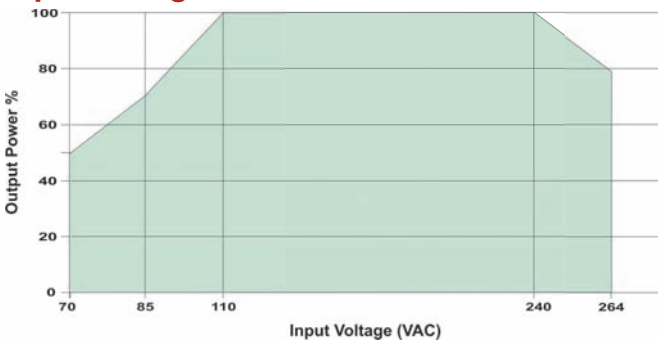
Derating Curve



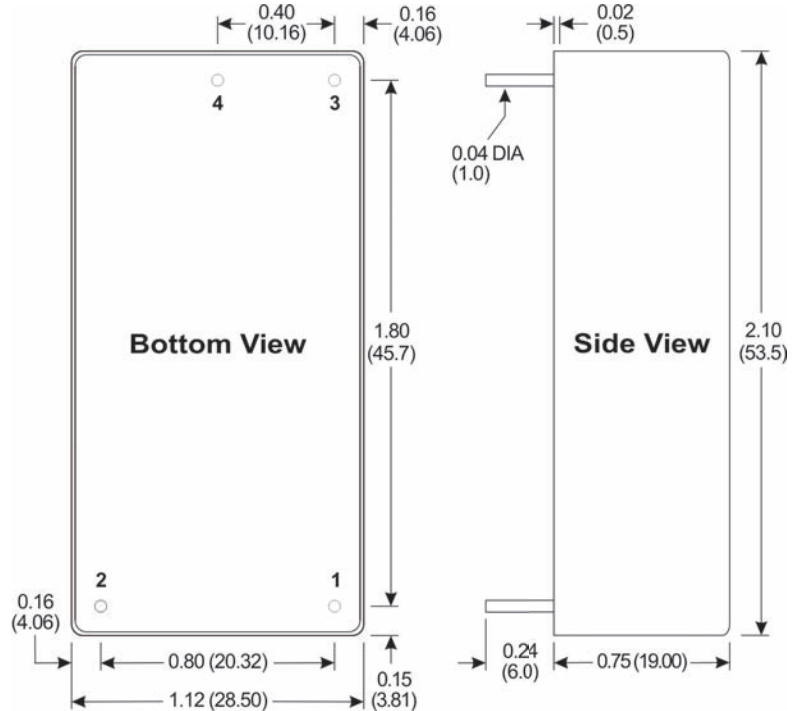
Pin Connections

Pin	Function	Pin	Function
1	AC-Neutral	3	+Vo
2	AC-Line	4	-Vo

Input Voltage Vs Load



Mechanical Dimensions



- Notes:
- All dimensions are typical in inches (mm)
 - Tolerance x.xx = ± 0.01 (± 0.25)



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