

# MPM-03MM Series

## Miniature 1 x 1 Inch 3W, Single Output AC/DC Power Supplies



### Key Features:

- 3W Output Power
- Miniature 1 x 1 Inch Case
- Universal 85-264 VAC Input
- EN 60950 Approved
- Six Standard Models
- Meets EN 55022 B
- Meets IEC Safety Class II
- >1.20 MHour MTBF



### MicroPower Direct

292 Page Street  
Suite D  
Stoughton, MA 02072  
USA

T: (781) 344-8226  
F: (781) 344-8481  
E: sales@micropowerelectronics.com  
W: www.micropowerelectronics.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, See Note 1	115 VAC			15.0	A Pk	
	230 VAC			25.0		
No Load Power Consumption	See Note 2			150	mW	

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	V <sub>IN</sub> = Min to Max			±1.0	%	
Load Regulation	I <sub>OUT</sub> = 0% to 100%			±1.0	%	
Ripple & Noise (20 MHz)				70	mV P-P	
Hold-Up Time	115 VAC		8.0		mS	
Temperature Coefficient				±0.05	%/°C	
Over Voltage Protection	See Note 3		125	190	%V <sub>OUT</sub>	
Overshoot				5.0	%V <sub>OUT</sub>	
Short Circuit Protection, See Note 4	Continuous (Auto-Recovery)					
Overload Protection	See Note 5	135	150		%W	

General						
Parameter	Conditions	Min.	Typ.	Max.	Units	
Isolation Voltage	Input to Output, 60S	3,000			VAC	
Isolation Resistance	500 VDC	100			MΩ	
Switching Frequency			65		kHz	

EMI Characteristics			
Parameter	Standard	Criteria	Level
Radiated Emissions	EN 55014, EN 55024		Class B
Conducted Emissions	EN 55022		Class B
ESD	EN 61000-4-2	A	±8 kV Air
RS	EN 61000-4-3	A	10V/m
EFT	EN 61000-4-4	A	±2 kV
Surge	EN 61000-4-5	A	±1 kV
CS	EN 61000-4-6	A	10 Vrms
PFM	EN 61000-4-8	A	30A/m
Voltage Dips	EN 61000-4-11	A	30% 10 mS
Interruptions	EN 61000-4-11	B	95% 5,000 mS

Environmental						
Parameter	Conditions	Min.	Typ.	Max.	Units	
Operating Temperature Range	Ambient	-25	+25	+70	°C	
Storage Temperature Range		-40		+85	°C	
Cooling	Free Air Convection (See Derating Curve on Page 2)					
Humidity	RH, Non-condensing			95	%	

Physical						
Parameter	Conditions	Min.	Typ.	Max.	Units	
Case Size	See Mechanical Diagram (Page 2)					
Case Material	Non-Conductive Black Plastic (UL94-V0)					
Weight					0.59 Oz (17.4g)	

Reliability Specifications						
Parameter	Conditions	Min.	Typ.	Max.	Units	
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	1.20			MHours	
Safety Standards	EN 60950					
Safety Class	IEC 60536 Class II					

[www.micropowerelectronics.com](http://www.micropowerelectronics.com)

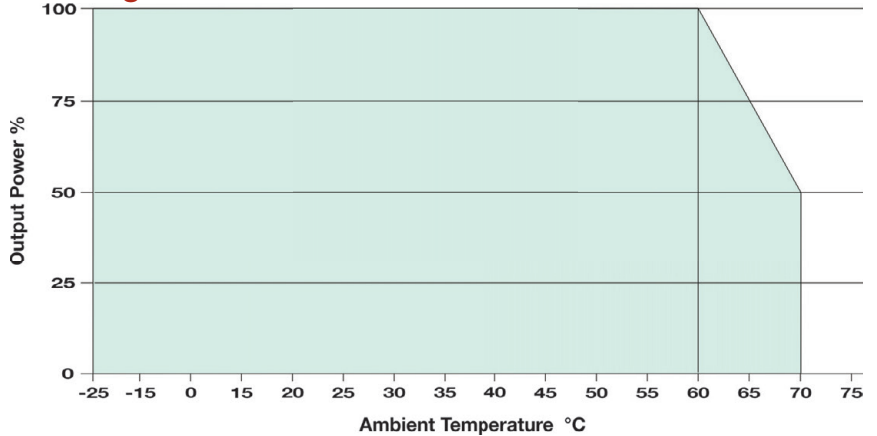
Model Number	Input Current (mA Typ)	Output				Efficiency (% Typ)	Capacitive Load ( $\mu$ F Max)	Fuse Rating Slow-Blow (mA)
		Voltage (VDC)	Current (mA)					
			Max.	Min.	Peak			
MPM-03S-03MM	62	3.3	900	0.0	1,170	70	1,200	1,000
MPM-03S-05MM	61	5.0	600	0.0	780	72	820	1,000
MPM-03S-09MM	57	9.0	333	0.0	430	77	470	1,000
MPM-03S-12MM	56	12.0	250	0.0	320	78	330	1,000
MPM-03S-15MM	56	15.0	200	0.0	260	78	270	1,000
MPM-03S-24MM	56	24.0	125	0.0	160	78	180	1,000

Other outputs may be available  
Contact the factory for details at:  
[sales@micropowerdirect.com](mailto:sales@micropowerdirect.com)

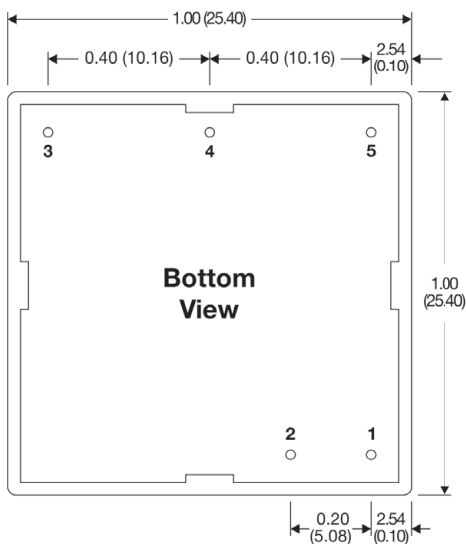
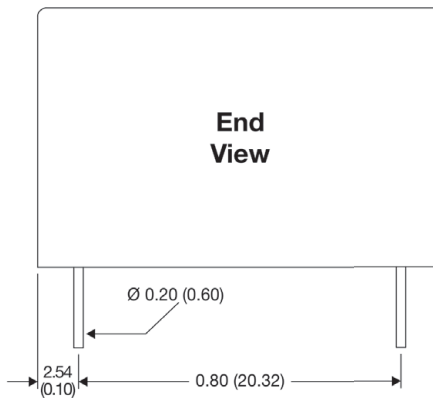
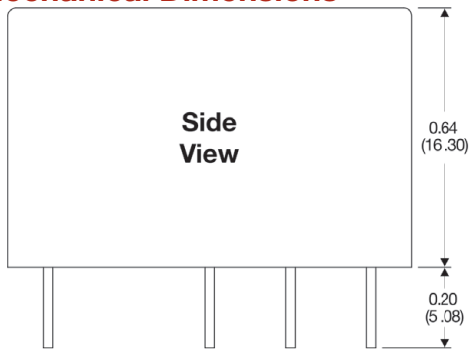
**Notes:**

- Inrush current is given for a cold start at 25°C.
- No load power consumption meets the standby power consumption limits in the European ERP Directive 2009/125/EC.
- Over voltage protection is provided by a zener diode clamp.
- Output short circuit protection is provided by a "hiccup mode" circuit. The unit recovers automatically when the fault condition is removed.
- Output overload protection is provided by a fold back current limiting circuit with auto-recovery. A long-term overload could damage the unit.
- Operation at no-load will not damage these units. However, they may not meet all specifications.
- Peak load is specified as lasting <30s with a maximum duty cycle of 10%. The average power should not exceed the maximum power rating.
- It is recommended that an external slow blow fuse also be used on the input for protection. See the table above for the correct rating.

**Derating Curve**



**Mechanical Dimensions**



**Pin Connections**

Pin	Function
1	AC-Neutral
2	AC-Line
3	No Connection
4	-VOUT
5	+VOUT

**Notes:**

- All dimensions are typical in inches (mm)
- Tolerance x.xx =  $\pm 0.02$  ( $\pm 0.25$ )