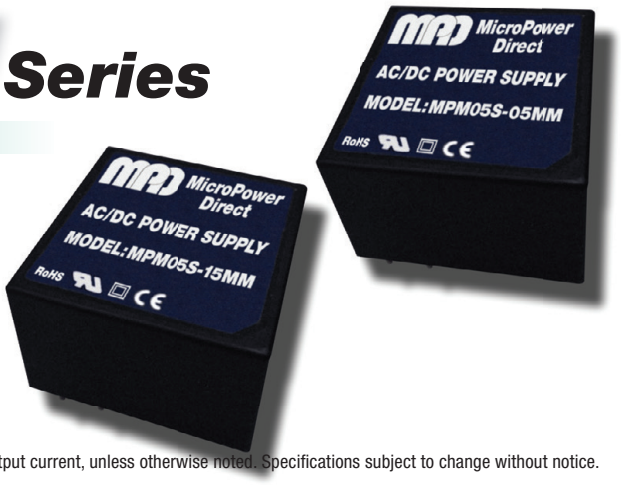
MPM-05MM Series

Miniature 1 x 1 Inch 5W, Single Output AC/DC Power Supplies



Key Features:

- 5W Output Power
- Miniature 1 x 1 Inch Case
- Universal 85-264 VAC Input
- EN 60950 Approved
- Chassis Mount Option
- Meets EN 55022 B
- Meets IEC Safety Class II
- >1.20 MHour MTBF

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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, See Note 1	115 VAC			20.0	A Pk
	230 VAC			40.0	
No Load Power Consumption	See Note 2			300	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	VIN = Min to Max			±1.0	%
Load Regulation	IOUT = 0% to 100%			±1.0	%
Ripple & Noise, See Note 3	3.3 & 5 VDC Out Models			60	mV P-P
	All Other Models			1.0	% V P-P of VOUT
Hold-Up Time	115 VAC		8.0		mS
	230 VAC		40		
Temperature Coefficient				±0.05	%/°C
Over Voltage Protection	See Note 4		125	190	%VOUT
Overshoot				5.0	%VOUT
Short Circuit Protection, See Note 5	Continuous (Autorecovery)				
Overload Protection	See Note 6	135	150		%W

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	Input to Output	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/±4 kV Contact
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% 500 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)				
Humidity	RH, Non-condensing			95	%

Physical

Case Size	See Mechanical Diagram (Page 2)	
Case Material	Non-Conductive Black Plastic (UL94-V0)	
Weight	Board Mount	0.69 Oz (19.7g)
	Chassis Mount	0.85 Oz (19.7g)

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				

Model Selection Guide

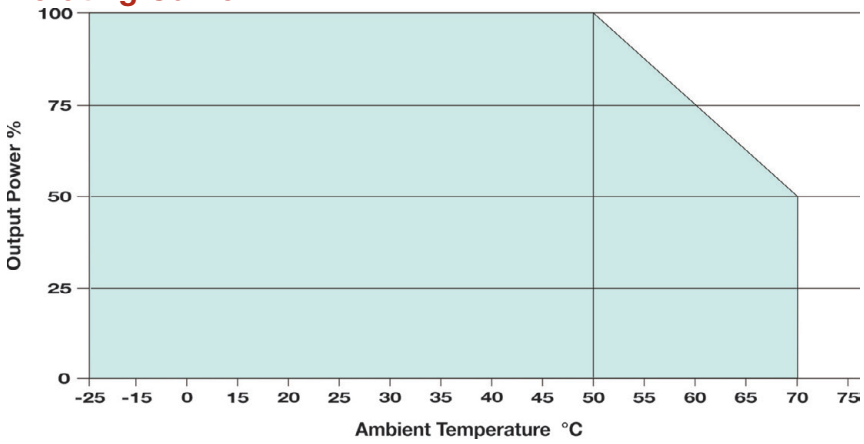
Model Number	Input Current (mA Typ)	Output				Efficiency (%, Typ)	Capacitive Load (µF Max)	Fuse Rating Slow-Blow (mA)
		Voltage (VDC)	Current (mA)					
	115 VAC		Max.	Min.	Peak			
MPM-05S-03MM (C)	117	3.3	1,515	0.0	1,970	74	2,200	1,000
MPM-05S-05MM (C)	108	5.0	1,000	0.0	1,300	80	1,000	1,000
MPM-05S-09MM (C)	106	9.0	555	0.0	721	82	300	1,000
MPM-05S-12MM (C)	106	12.0	416	0.0	540	82	160	1,000
MPM-05S-15MM (C)	104	15.0	333	0.0	433	83	100	1,000
MPM-05S-24MM (C)	104	24.0	208	0.0	270	83	43	1,000
MPM-05S-48MM (C)	102	48.0	104	0.0	135	85	10	1,000

Other outputs may be available
Contact the factory for details at:
sales@micropowerdirect.com

Notes:

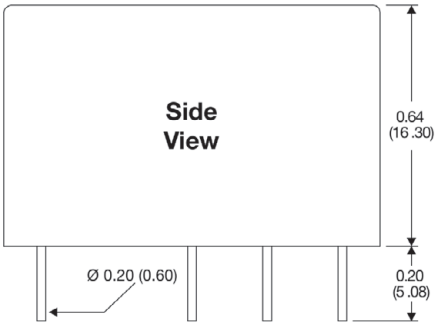
1. Inrush current is given for a cold start at 25°C.
2. No load power consumption meets the standby power consumption limits in the European ERP Directive 2009/125/EC.
3. Ripple & Noise is specified over a range of 0 - 20 MHz. It is measured with a 1 µF/50V MLCC connected from +VOUT to -VOUT.
4. Over voltage protection is provided by a zener diode clamp.
5. Output short circuit protection is provided by a "hiccup mode" circuit. The unit recovers automatically when the fault condition is removed.
6. Output overload protection is provided by a fold back current limiting circuit with auto-recovery. A long-term overload could damage the unit.
7. Operation at no-load will not damage these units. However, they may not meet all specifications.
8. Peak load is specified as lasting <30s with a maximum duty cycle of 10% The average power should not exceed the maximum power rating.
9. 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

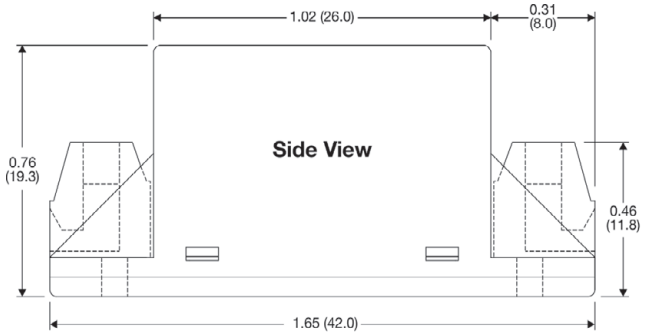


Mechanical Dimensions

Board Mount

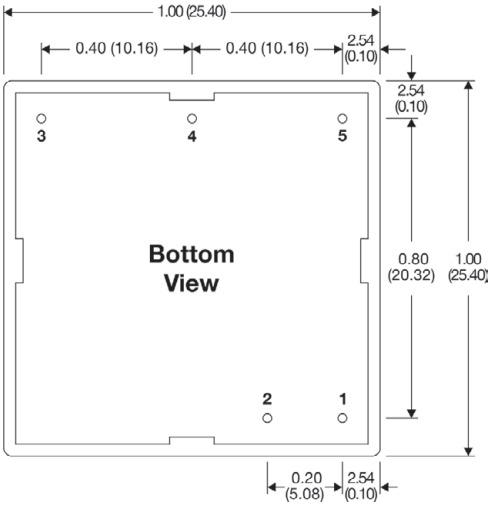


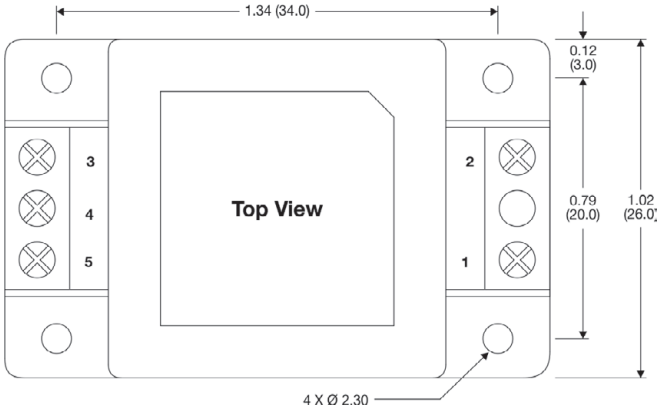
Chassis Mount



Pin Connections

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





To order a chassis mount version, add a "C" to the model number
(i.e. MPM-05S-15MMC)

Notes:

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

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