MPM-04V Series

Compact, Board Mount 4W Ultra-Wide Input Range AC/DC Power Supplies

Key Features:

- 4W Output Power
- Universal 90-305 VAC Input
- Miniature Size
- EN 60950 Approved (UL)
- Meets IEC Safety Class II
- Single and Dual Outputs
- Meets EN 55022 B
- >350 kHour MTBF

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		90		305	VAC
		120		430	VDC
Input Frequency		47		440	Hz
Input Current	See Model Selection Guide				
Inrush Current	115 VAC		15.0		A Pk
	230 VAC		25.0		
EMI	Meets CISPR Pub. 22/FCC Class B				
EMC	Meets EN 55024				

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage	See Model Selection Guide				
Output Current	See Model Selection Guide				
Output Voltage Accuracy	See Note 2		±2.0		%
Line Regulation, See Note 3	3.3V Output, VIN = Min to Max		±0.5		%
	5V to 24V Output, VIN = Min to Max		±0.2		
Load Regulation, Single Output	3.3V output, Io = 0% to 100%		±1.5		%
Load Regulation, Single Output	5V to 24V output, Io = 0% to 100%		±0.5		%
Load Regulation, Dual Output	Vout 1, Io = 10% to 100%		±0.5		%
Load Regulation, Dual Output	Vout 2, Io = 10% to 100%		±5.0		%
Ripple/Noise (20 MHz)	Single 3.3V & 5V Outputs		150.0		mV_{P-P}
	All Other Models		100.0		
Hold-Up Time	115 VAC		15		mSec
Temperature Coefficient			±0.02		%/°C
Over Voltage Protection	Zener Diode Clamp		120		% of V_O
Short Circuit Protection, See Note 4	Continuous (Autorecovery)				
Overload Protection		105	120		% of I_O

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	Input to Output	3,000			VAC
Isolation Resistance	500 VDC	100			MΩ
EMI/RFI	Conducted				EN 55022 Level B
EMC Compliance	Electrostatic Discharge (ESD)				EN 61000-4-2 Level B
	RF Field Susceptibility				EN 61000-4-3
	Electrical Fast Transients/Bursts On Mains				EN 61000-4-4 Level 3 2 kV
	Surge				EN 61000-4-5 Level 3 1kV/2 kV
Switching Frequency			132		kHz

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-40	+25	+70	°C
Storage Temperature Range		-40		+125	°C
Cooling	Free Air Convection (See Derating Curve)				
Humidity	RH, Non-condensing			95	%

Physical

Case Size	1.44 x 1.06 x 0.67 Inches (36.5 x 27.0 x 17.1 mm)
Case Material	Non-Conductive Plastic & Fiberglass (UL94-V0)
Weight	0.91 Oz (26g)

Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	350			kHours
Safety Standards	UL 60950, EN 60950				
Safety Approvals	UL, cUL; File No. E245422				
Safety Class	IEC 61140 Class II				

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Model Selection Guide

Model Number	Input		Output 1 (See Note 1)				Output 2 (See Note 1)				Maximum Output Power (W)	Efficiency (%, Typ)
	Current (A)		Voltage (VDC)	Current (mA)		Maximum Cap. Load (µF)	Voltage (VDC)	Current (mA)		Maximum Cap. Load (µF)		
	115 VAC	230 VAC		Max.	Min.			Max.	Min.			
MPM-04SV-03	0.075	0.055	3.3	1.200	0.0	14,000					3.96	70
MPM-04SV-05	0.075	0.055	5.0	800	0.0	8,000					4.0	72
MPM-04SV-08	0.075	0.055	8.0	500	0.0	2,700					4.0	74
MPM-04SV-09	0.075	0.055	9.0	444	0.0	2,400					4.0	75
MPM-04SV-12	0.075	0.055	12.0	333	0.0	1,000					4.0	76
MPM-04SV-14	0.075	0.055	14.0	286	0.0	750					4.0	76
MPM-04SV-15	0.075	0.055	15.0	267	0.0	700					4.0	76
MPM-04SV-24	0.075	0.055	24.0	167	0.0	220					4.0	77
MPM-04DV-0503	0.085	0.065	+5.0	+600	0.0	5,600	+3.3	+150	0.0	4,700	3.5	72
MPM-04DV-0805	0.085	0.065	+8.0	+375	0.0	1,000	+5.0	+120	0.0	4,700	3.6	74
MPM-04DV-1205	0.085	0.065	+12.0	+250	0.0	330	+5.0	+120	1.2	4,700	3.6	75

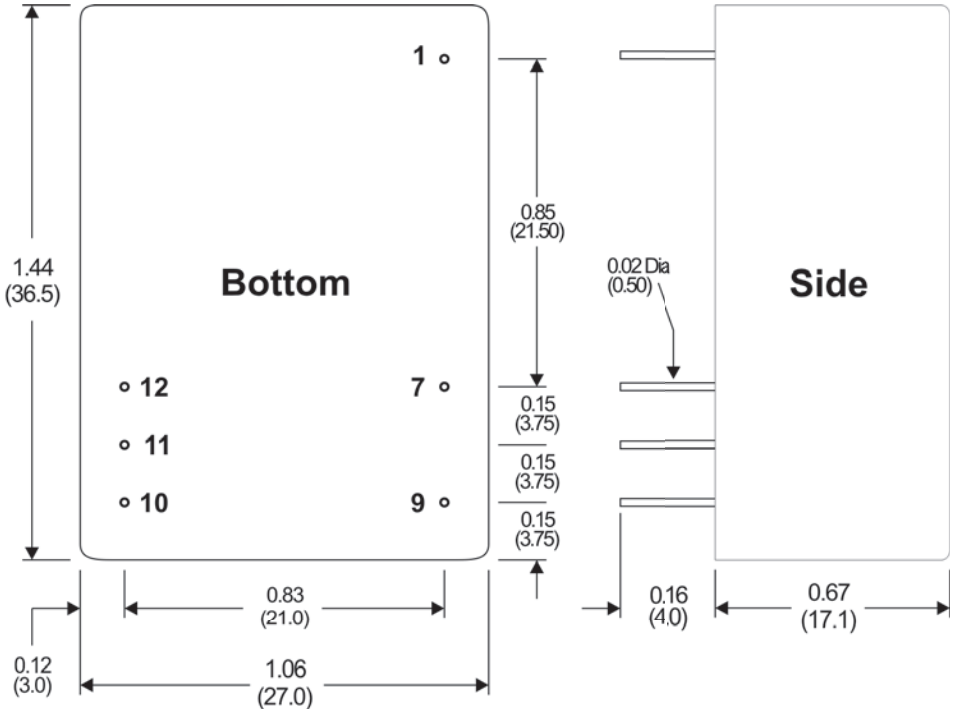
Notes:

1. For dual output models, Output 1 is +Vo and Output 2 is +Vr. A 47 µF/25V ceramic capacitor must be connected from +Vo (pin 12) of dual output models to Common (pin 11). Without this capacitor, the unit may not meet all specifications.
2. For dual output models, output voltage accuracy is specified as ±2% for +Vo and ±5% for +Vr.
3. For dual output models, line regulation is specified as ±0.2% for +Vo and ±3% for +Vr.
4. Output short circuit protection is provided by a "hiccup mode" circuit. The unit recovers automatically when the fault condition is removed.
5. Operation at under no load conditions will not damage these units. It is recommended that the minimum load values in the table above be used.
6. It is recommended that a fuse be used on the input of a power supply for protection. For the **MPM-04V** series, a 3.15A/250 VAC slow blow should be used.

MPM-04XV-YYYY

- **Outputs**: S = Single, D = Dual
- **Input**: V = 90-305 VAC
- **Output Voltage Selection** (i.e. 05 = 5 VDC, 1205 = 12 & 5 VDC, etc)

Mechanical Dimensions



Pin Connections

Pin	Single	Dual
1	NC	NC
7	AC-Neutral	
9	AC-Line	

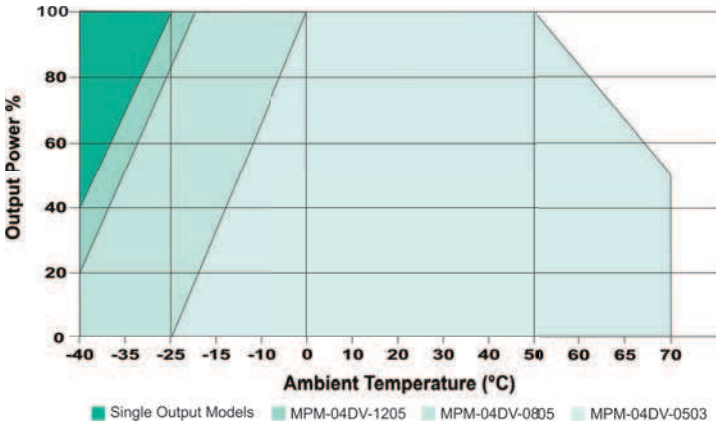
Pin	Single	Dual
10	NC	+Vr
11	-Vo	Common
12	+Vo	+Vo

NC = No Connection

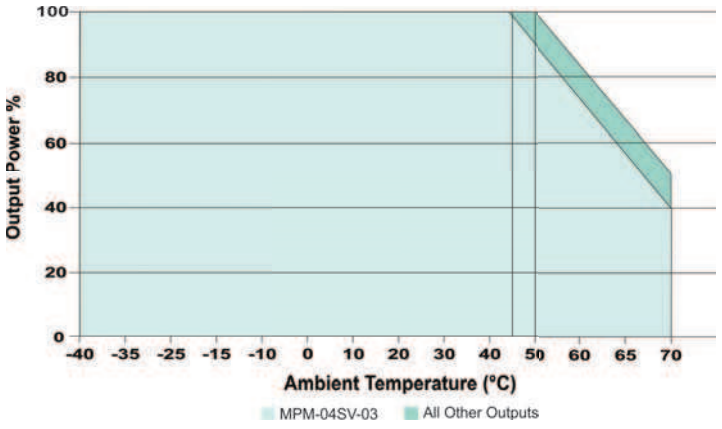
Notes:

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

Derating Curve, Vin = 90-280 VAC



Derating Curve, Vin = 280-305 VAC



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