MPM-40 Series

Board Mount, 40W Single, Dual & Triple Out AC/DC Power Supplies

Key Features:

- 40W Output Power
- Universal 90-264 VAC Input
- EN 60950 Approved (UL)
- Meets IEC Safety Class II
- Industry Standard Pin-Out
- Single, Dual & Triple Outputs
- Meets EN 55022 B
- >200 kHour MTBF

Chassis Mount Models & DIN Rail Mount Option Available!

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		264	VAC
		100		375	VDC
Input Frequency		47		440	Hz
Input Current	See Model Selection Guide				
Inrush Current	115 VAC		30.0		A Pk
	230 VAC		50.0		
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, See Note 2	V_{IN} = Min to Max		±0.5		%
Load Regulation, Single Output	I_O = 1% to 100%		±1.0		%
Load Regulation, Dual Output, See Note 3	I_O = 10% to 100%		±1.0		%
Load Regulation, Triple Output - Primary	I_O = 10% to 100%		±3.0		%
Load Regulation, Triple Output - Aux.	I_O = 10% to 100%		±7.0		%
Cross Regulation, Dual Output, See Note 4	I_O = 15% to 100%		±5.0		%
Cross Regulation, Triple Output - Primary	I_O = 15% to 100%		±3.0		%
Cross Regulation, Triple Output - Aux.	I_O = 15% to 100%		±7.0		%
Ripple & Noise (20 MHz)	3.3 VDC Output		50.0		mV_{P-P}
	All Other Outputs		1.0		$\%V_{P-P}$ of V_O
Hold-Up Time	115 VAC		15		mSec
Temperature Coefficient			±0.02		%/°C
Over Temperature Protection	Note 4		100		°C
Over Voltage Protection	Zener Diode Clamp		120		% of V_O
Short Circuit Protection, See Note 6	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
Operating Temperature Range	Case			+95	°C
Storage Temperature Range		-40		+100	°C
Cooling	Free Air Convection (See Derating Curve)				
Humidity	RH, Non-condensing			95	%

Physical

Case Size	3.50 x 2.50 x 0.98 Inches (89.0 x 63.5 x 25.0 mm)
Case Material	Non-Conductive Plastic& Fiberglass (UL94-V0)
Weight	9.85 Oz (280g)

Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	200		400	kHours
Safety Standards	EN 60950				
Safety Class	IEC 61140 Class II				

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

Model Selection Guide

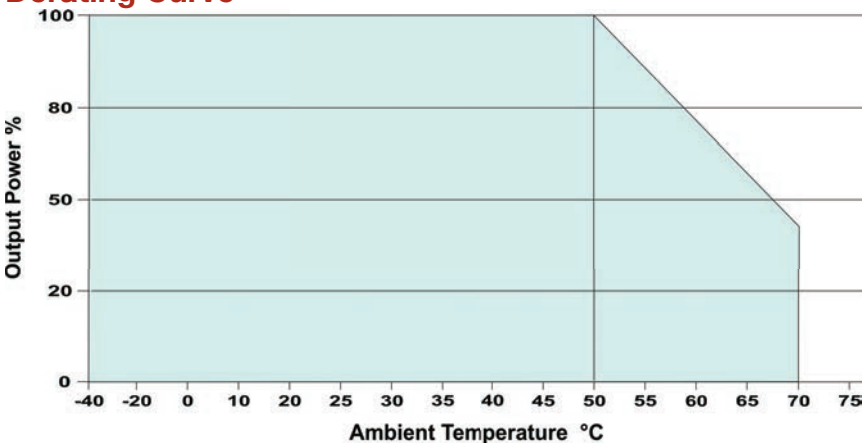
Model Number	Input		Output 1 (Vout 1)			Output 2 (Vout 2)			Output 3 (Vout 3)			Efficiency (%, Typ)
	Current (A)		Voltage (VDC)	Current		Voltage (VDC)	Current		Voltage (VDC)	Current (A)		
	115 VAC	230 VAC		Max. (A)	Min. (%)		Max. (A)	Min. (%)		Max. (A)	Min. (%)	
MPM-40S-03	0.860	0.460	3.3	8.000	1.0							76
MPM-40S-05	0.860	0.460	5.0	8.000	1.0							81
MPM-40S-09	0.860	0.460	9.0	4.444	1.0							83
MPM-40S-12	0.860	0.460	12.0	3.333	1.0							84
MPM-40S-15	0.860	0.460	15.0	2.666	1.0							83
MPM-40S-24	0.860	0.460	24.0	1.667	1.0							83
MPM-40D-05	0.860	0.460	+5.0	+4.000	10.0	-5.0	-4.000	10.0				81
MPM-40D-12	0.860	0.460	+12.0	+1.666	10.0	-12.0	-1.666	10.0				83
MPM-40D-15	0.860	0.460	+15.0	+1.333	10.0	-15.0	-1.333	10.0				83
MPM-40D-0512	0.860	0.460	5.0	5.000	25.0	12.0	1.250	25.0				82
MPM-40D-0524	0.860	0.460	5.0	5.000	25.0	24.0	0.625	25.0				82
MPM-40T-0512	0.860	0.460	+5.0	+5.000	25.0	+12.0	+0.600	25.0	-12.0	-0.600	25.0	82
MPM-40T-0515	0.860	0.460	+5.0	+5.000	25.0	+15.0	+0.500	25.0	-15.0	-0.500	25.0	81

Other output combinations are available
Contact the factory for details at:
sales@micropowerdirect.com

Notes:

1. For dual output models **MPM-40D-0512** and **MPM-40D-0524**, output voltage accuracy is ±3% for ouput 1 and ±5% for output 2. For triple output models, the output voltage accuracy is ±3% for output 1 and ±5% for output 2 & 3.
2. For the **MPM-40D-0512** and **MPM-40D-0524**, the line regulation of output 2 is specified at ±5%.
3. For models **MPM-40D-05**, **MPM-40D-12** and **MPM-40D-15**, load regulation is measured with balanced loads. For the **MPM-40D-0512** and **MPM-40D-0524**, load regulation is ±2% for output 1 and ±6% for output 2.
4. For the **MPM-40D-0512** and **MPM-40D-0524**, cross regulation is measured for a load change of 25% to 100%. It is ±1% for output 1 and ±7% for output 2.
5. The overtemperature protection circuit will shut the unit down. The unit will restart when the operating temperature drops to approximately +80°C.
6. Output short circuit protection is provided by a "hiccup mode" circuit. The unit recovers automatically when the fault condition is removed.
7. Operation at under no load conditions will not damage these units, however the output voltage may be unstable. It is recommended that the minimum load values in the table above be used.
8. The maximum capacitive load for these units ranges from 23,000 μF (**MPM-40S-03**) to 470 μF (**MPM-40S-24**). Contact technical sales for information on specific models.
9. It is recommended that a fuse be used on the input of a power supply for protection. For the **MPM-40** series, a 2A/250 VAC slow blow should be used.

Derating Curve



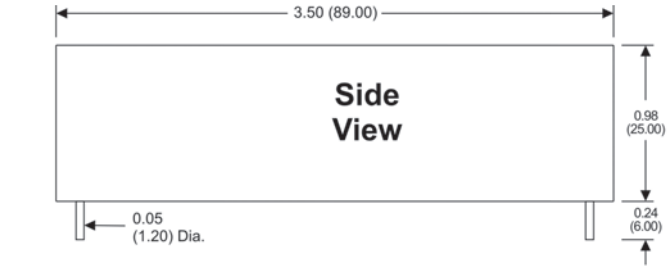
Model Number

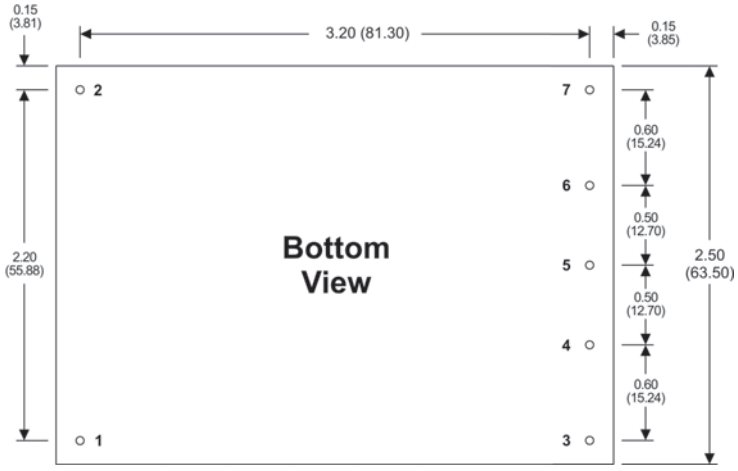
MPM-40X-YY

Outputs
S = Single
D = Dual
T = Triple

Output Voltage Selection
(i.e. 05 = 5 VDC,
24 = 24 VDC, etc)

Mechanical Dimensions





Pin Connections

Pin	Single	Dual	Dual Seperate	Triple
1	AC-Line			
2	AC-Neutral			
3	+Vo	+Vo	+Vo 2	+Vo 2
4	No Pin	No Pin	+Vo 1	+Vo 1
5	-Vo	Common	-Vo 2	Common 2/3
6	No Pin	No Pin	-Vo 1	-Vo 1
7	NC	-Vo	No Pin	-Vo 3

NC = No Connection
Dual Separate Models = **MPM-40D-0512** & **MPM-40D-0524**

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

MicroPower Direct
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292 Page Street Ste D Stoughton, MA 02072 • TEL: (781) 344-8226 • FAX: (781) 344-8481 • E-Mail: sales@micropowerdirect.com