

Features

- RoHS lead-solder-exemption compliant
- Power Factor Correction (PFC) Meets EN61000-3-2
- Low-profile height fits 1U constraints
- High 3.3V and 5V current capabilities available
- CE marked to Low Voltage Directive
- Autoranging AC input, 85-264 VAC
- Overvoltage protection on the main output

Description

The MPB80 combines high density power and other standard features usually found in premium power systems. The low-profile package neatly fits 1U height constraints in an industry-standard 3" X 5" footprint. This Power Factor Corrected (PFC), multiple-output product line features overvoltage and overcurrent protection. In addition to UL, CSA, and TÜV, regulatory agency compliances include the CE Marking and harmonic compliance to EN61000-3-2.

Single Output Model Selection – Up to 72W Convection Cooled, Up to 100W Forced-Air Cooled (300 LFM)

MODEL	OUTPUT VOLTAGE	ADJUSTMENT RANGE	CONVECTION COOLED OUTPUT CURRENT	FORCED AIR OUTPUT CURRENT	LINE REGULATION	LOAD REGULATION	RIPPLE & NOISE %p-p (NOTE 1)	INITIAL SETTING ACCURACY
MPB80-1012	12V	11V to 13V	6A	8.4A	0.5%	1%	1%	11.94V to 12.06V
MPB80-1024	24V	22V to 26V	3A	4.2A	0.5%	1%	1%	23.88V to 24.12V
MPB80-1048	48V	46V to 50V	1.5A	2.1A	0.5%	1%	1%	47.76V to 48.24V

NOTES: 1) Maximum peak-to-peak noise, bandwidth limited to 20 MHz.

Dual and Triple Output Model Selection – Up to 63W Convection Cooled, Up to 80W Forced-Air Cooled (300 LFM)

MODEL	OUTPUT VOLTAGE	ADJUSTMENT RANGE	CONVECTION COOLED CURRENT	FORCED AIR CURRENT	LINE REGULATION	TOTAL REGULATION	RIPPLE & NOISE mV (NOTE 1)	INITIAL SETTING ACCURACY
MPB80-2000	+5V	4.7V to 5.8V	11A/15A PK	15A	0.8%	-4%, +2%	1%	4.9V to 5.1V
	+12V	Fixed	0.5A/1A PK	1A	0.5%	±5%	1%	11.5V to 12.5V
MPB80-3000	+5V	4.7V to 5.8V	7A/8.5A PK	8.5A	0.5%	-4%, +6%	1%	4.9V to 5.1V
	+12V	Fixed	2.5A/3A PK	3A	1.5%	-7%, +13%	1%	11.5V to 12.5V
	-12V	Fixed	0.3A/0.7A PK	0.7A	0.5%	±4%	1%	-11.5V to -12.5V
MPB80-3300 (Note 2)	+3.3V	3.1V to 3.9V	7A/8.5A PK	8.5A	0.7%	±2%	1%	3.27V to 3.33V
	+5V	4.7V to 5.8V	3A/5A PK	5A	0.5%	±2%	1%	4.95V to 5.05V
	+12V	Fixed	0.4A/0.65A PK	0.65A	1.5%	-15%, +17%	1%	10.2V to 14.0V

NOTES: 1) Maximum peak-to-peak noise, bandwidth limited to 20 MHz.
2) MPB80-3300 has overvoltage protection on +3.3V and +5V outputs.

Model numbers highlighted in yellow or shaded are not recommended for new designs.

Input Specifications

PARAMETER	CONDITIONS/DESCRIPTION	MIN	NOM	MAX	UNITS
Input Voltage - AC	Autoranging AC input automatically adjusts, no manual strapping required.	85		264	VAC
Input Frequency	AC input.	47		63	Hz
Brown Out Protection	Lowest AC input voltage that regulation is maintained with full rated loads.	85			VAC
Hold-Up Time	After last AC line peak.	Full load @ 120 VAC	16		ms
		Full load @ 220 VAC	20		
Input Current	Single Output Models, 120 VAC			1.5	ARMS
	Single Output Models, 230 VAC			0.75	
	Dual and Triple Output Models, 120 VAC			1.1	
	Dual and Triple Output Models, 230 VAC			0.55	
Input Protection	Non-user serviceable internally located AC input line fuse.				
Inrush Surge Current	Internally limited by thermistor. Vin = 230 VAC (one cycle).			32	APK
Operating Frequency	Switching frequency of main transformer.	60		68	kHz

Output Specifications

PARAMETER	CONDITIONS/DESCRIPTION	MIN	NOM	MAX	UNITS
Efficiency	Full rated load, 230 VAC. Varies with distribution of loads among outputs.		73		%
Minimum Loads	Single Output Models	0.0			Amps
	MPB80-2000	1.5			
	All other Multiple Output Models	0.7			
Ripple and Noise	Full load, 20 MHz bandwidth	See Model Selection Chart			
Output Power	Convection cooled, continuous output power.	MPB80-10XX		72	Watts
		MPB80-2000		61	
		MPB80-3000		63	
		MPB80-3300		43	
	Forced air cooled, 300 LFM, or convection cooled, peak output power 10% duty cycle, 30 seconds maximum.	MPB80-10XX		100	Watts
MPB80-2000		80			
MPB80-3000		80			
MPB80-3300		61			
Overshoot / Undershoot	Output voltage overshoot/undershoot at turn-on.			2	%
Regulation	Varies by output. Total regulation includes: line changes from 85-132 VAC or 170-264 VAC, changes in load starting at 20% load and changing to 100% load.	See Model Selection Chart			
Transient Response	Recovery time, to within 1% of initial set point due to a 50-100% load change, 5% max. deviation.		500		µs
Turn-On Delay	Time required for initial output voltage stabilization.		2		Sec
Turn-On Rise Time	Time required for output voltage to rise from 10% to 90%.		20		ms

Interface Signals and Internal Protection

PARAMETER	CONDITIONS/DESCRIPTION	MIN	NOM	MAX	UNITS
Overvoltage Protection		+3.3V	3.9	4.7	V
		+5V, V1 & V2	5.8	6.8	
		12V	17.3	20.2	
		24V	32.2	37.8	
		48V	55.2	64.8	
Overload Protection	Fully protected against output overload and short circuit. Automatic recovery upon removal of overload condition.				

Safety, Regulatory, and EMI Specifications

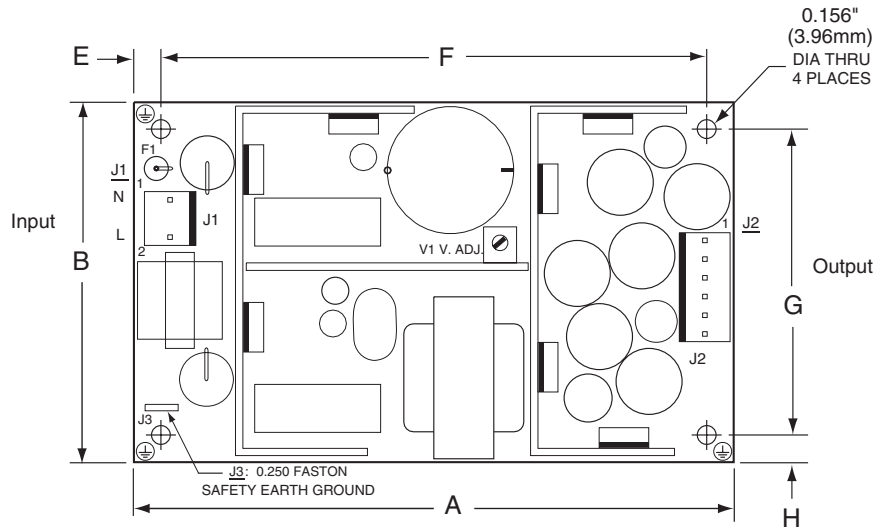
PARAMETER	CONDITIONS/DESCRIPTION	MIN	NOM	MAX	UNITS
AC Input Harmonic Distortion	In compliance per EN61000-3-2.				
Agency Approvals	UL60950. CSA 22.2 No. 60950. EN60950 (TÜV).		Approved		
Dielectric Withstand Voltage	Input to output, 1 second.	2600			VDC
Electromagnetic Interference, Conducted	FCC CFR title 47 Part 15. EN55022 / CISPR 22	B B			Class
Input Transient Protection	EN61000-4-5 class 3.	2			kV
Insulation Resistance	Input to output.	10			MΩ
Leakage Current	Per EN60950, 264 VAC.			1.0	mA

Environmental Specifications

PARAMETER	CONDITIONS/DESCRIPTION	MIN	NOM	MAX	UNITS
Altitude	Operating. Non-Operating.			10k 30k	ASL Ft.
Cooling	See model selection table for individual convection/forced air rating.				
Operating Temperature	At 100% load. Derate linearly above 50°C by 2% per °C.	0 0		50 70	°C
Storage Temperature		-40		85	°C
Relative Humidity	Non-condensing.			95	%
Shock	Peak acceleration.			20	GPK
Vibration	Random vibration, 10 Hz to 2 kHz, 3 axis.			6	GRMS

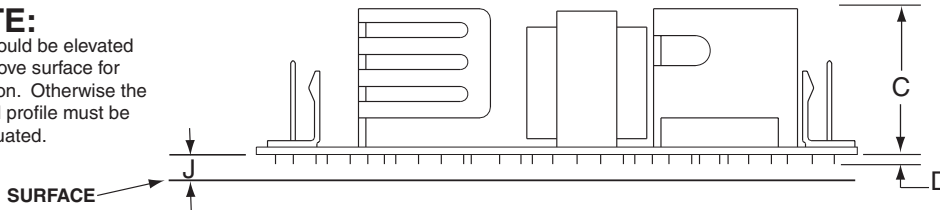
NUCLEAR AND MEDICAL APPLICATIONS - Power-One products are not designed, intended for use in, or authorized for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems without the express written consent of the respective divisional president of Power-One, Inc.

TECHNICAL REVISIONS - The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.



NOTE:

Unit should be elevated 1/4" above surface for operation. Otherwise the thermal profile must be re-evaluated.



J2

MPB80-2000			MPB80-3000			MPB80-3300			MPB80-10XX		
PIN 1	<input type="checkbox"/>	V1	PIN 1	<input type="checkbox"/>	V2	PIN 1	<input type="checkbox"/>	V2	PIN 1	<input type="checkbox"/>	V1
2	<input type="checkbox"/>	V1	2	<input type="checkbox"/>	V1	2	<input type="checkbox"/>	RTN	2	<input type="checkbox"/>	V1
3	<input type="checkbox"/>	V1	3	<input type="checkbox"/>	V1	3	<input type="checkbox"/>	RTN	3	<input type="checkbox"/>	V1
4	<input type="checkbox"/>	RTN	4	<input type="checkbox"/>	RTN	4	<input type="checkbox"/>	RTN	4	<input type="checkbox"/>	RTN
5	<input type="checkbox"/>	RTN	5	<input type="checkbox"/>	RTN	5	<input type="checkbox"/>	V1	5	<input type="checkbox"/>	RTN
6	<input type="checkbox"/>	RTN	6	<input type="checkbox"/>	V3	6	<input type="checkbox"/>	V1	6	<input type="checkbox"/>	RTN
7	<input type="checkbox"/>	V2				7	<input type="checkbox"/>	V3	7	<input type="checkbox"/>	NC

OVERALL SIZE: 5.00" (127.0mm) x 3.00" (76.2mm) x 1.40" (35.6mm)

WEIGHT: 0.8 lb (0.36 kg)

TOLERANCES: .XX = 0.03" (0.8mm)
.XXX = 0.010" (0.3mm)

INPUT CONNECTIONS: Molex 26-60-4030 or equivalent Header mates with Molex Housing 09-50-3031 or equivalent and Pins 08-50-0106 (18-20 AWG) or 80-50-0108 (22-26 AWG) or equivalent.

OUTPUT CONNECTIONS:
6-Connector J2: Molex 26-60-4060 Header mates with Molex 90-50-3061 or equivalent and pins 80-50-0106 (18-20 AWG) or 80-50-0108 (22-26 AWG) or equivalent.

7-Connector J2: Molex 26-60-4070 Header mates with Molex 90-50-3071 or equivalent and pins 80-50-0106 (18-20 AWG) or 80-50-0108 (22-26 AWG) or equivalent.

Callout	Inches	Millimeters
A	5.00	127.0
B	3.00	76.2
C	1.30	33.0
D	0.10 Max.	2.54 Max.
E	0.225	5.72
F	4.55	115.57
G	2.55	64.77
H	0.225	5.72
J	0.25	6.35