





Features

- RoHS compliant for all six substances
- High power density in an industry-standard 3" x 5" footprint
- Power Factor Correction (PFC) meets EN61000-3-2
- Main output remote sense
- Power Good signals
- CE marked to Low Voltage Directive
- Input transient & ESD compliance to EN61000-4-2/-3/-4/-5

Description

The MPB150 Series incorporates patented high efficiency circuitry, high power density and active Power Factor Correction (PFC) to meet the requirements of networking and data communications systems, as well as commercial and industrial configurations.

MPB150's deliver a regulated main output plus a second 12V output for fans or other system functions. The MPB150 is rated for convection as well as forced-air cooling. Full output power is available with as few as 15 Cubic Feet per Minute (CFM) forced-air cooling.

The MPB150 product line is approved to the latest international regulatory standards, and displays the CE Mark.

Model Selection

MODEL	OUTPUT VOLTAGE (VOLTS)	MAXIMUM OUTPUT CURRENT (AMPS), 130 LFM	TOTAL REGULATION %	RIPPLE & NOISE % pk-pk (NOTE 1)	REGULATION RANGE
MPB150-2012G	+12V	12.5A	±3%	1%	11.64V to 12.36V
NOTE 2, 3, 4)	12V	0.5A	±5%	1%	11.40V to 12.60V
MPB150-2024G	+24V	6.0A	±3%	1%	23.28V to 24.72V
NOTE 2, 3, 4)	12V	0.5A	±5%	1%	11.40V to 12.60V
MPB150-2048G	+48V	3.1A	±3%	1%	46.56V to 49.44V
(NOTE 2, 3, 4)	12V	0.5A	±5%	1%	11.40V to 12.60V

NOTES: 1) Maximum peak-to-peak noise expressed as a percentage of output voltage, 20 MHz bandwidth.

2) Maximum forced-air output power is 150 watts with 15 CFM airflow.

3) Maximum convection output power is 70 watts.

4) V2 is isolated from V1 and can be used as a negative or positive output.



Input Specifications

PARAMETER	CONDITIONS/DESCRIPTION	MIN	NOM	MAX	UNITS
Input Voltage- AC	Continuous input range.	90		264	VAC
Input Frequency	AC Input.	47		63	Hz
Brownout Protection	Lowest AC input voltage that regulation is maintained with full rated loads.	90			VAC
Hold-up Time	Over full AC input voltage range at full rated load.	17			ms
Input Current	90 VAC at full rated load.			2.2	Arms
Input Protection	Non-user serviceable internally located AC input line fuse, 250 VAC, 3.15A.				
Inrush Surge Current	Internally limited by thermistor, 110VAC: one cycle, 25° C. 220VAC:			23 46	Арк
Power Factor Circuitry	Active PFC meets requirements of EN61000-3-2.				
Operating Frequency	Switching frequency of main transformer.		45		kHz

Output Specifications

PARAMETER	CONDITIONS/DESCRIPTION		NOM	MAX	UNITS
Efficiency	Full Load, 230VAC. Varies with distribution of loads among outputs.		80	85	%
Minimum Loads	V1 load for full regulation on V2. All models operate				Watts
	at no load without any damage and meet all specs on V1 above 0 amps.				
Ripple and Noise	Full load, 20 MHz bandwidth.	See N	Nodel Select	ion Chart	
Output Power (Note 1)	At 15 CFM forced-air cooling. See Application Note for details.			150	Watts
	Convection: Consult Factory.				
Overshoot /Undershoot	Output voltage overshoot/undershoot at turn-on.			10	%
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.		Nodel Select	ion Chart	
Transient Response	Maximum deviation due to a 25% load change with unit at 75% load.	3		%	
Turn-on Delay	Time required for initial output voltage stabilization. 0.2		1.5	Sec	
Turn-on Rise Time	Time required for output voltage to rise from 10% to 90%.	0.2 20		20	ms

Interface Signals and Internal Protection

PARAMETER	CONDITIONS/DESCRIPTION		MIN	NOM	MAX	UNITS
Overvoltage Protection	V1 output.	MPB150-2012	13.5		16.5	
-		MPB150-2024	26.9		31.1	VDC
		MPB150-2048	57.6		62.4	
Overload Protection	Fully protected against output short circuit or overload. Automatic removal of overload condition.	recovery upon				
Remote Sense (Note 1)	Total (+sense and -sense) voltage compensation for cable losses.				500	mV
Power Good Signal	AC/DC indicator - This signal indicates the status of the AC input o When there is sufficient AC voltage and the outputs are operating r open collector signal is provided.					
	Turn-On delay time from application of AC:		50		500	
	Warning time before outputs go out of regulation:		5		500	ms
	Warning time before outputs go out of regulation. Warning time before outputs deviate $\pm 10\%$ from the nominal value	:	15			1115
	······································	Sink Current			20	mA
		Pull-up Volta	ige		30	V
Power Supply OK Signal	Provided on dual-output models. Open collector signal intended to Closed collector occurs when the Power Good Signal is in its open					
		Sink Current			20	mA
		Pull-up Volta	ige		30	V
Thermal Shutdown	Protected against overtemperature conditions. Unit recovers when overtemperature condition is removed.					
Current Share	Up to 4 units can be connected in parallel. There are some limits for parallel operation. See Applications Note. N+1 redundancy is provided. V2 needs an external isolation diode for N+1 operation.					
Isolation Diode	Internal isolation diode is provided on V1.					

NOTES: 1) Negative (-) sense must be connected to output common or load common for proper power supply operation.



Safety, Regulatory, and EMI Specifications

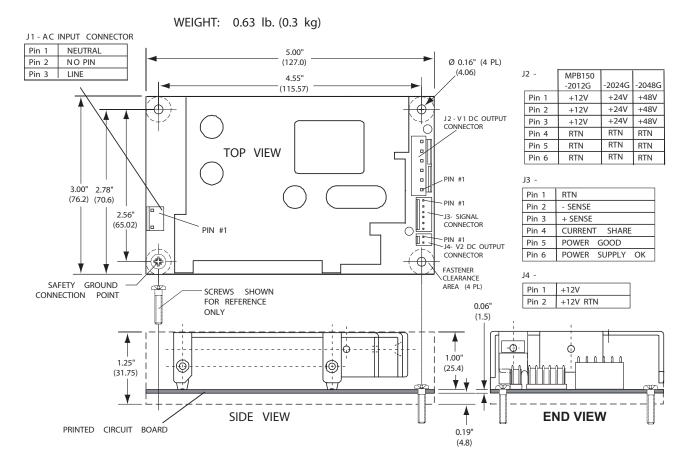
PARAMETER	CONDITIONS/DESCRIPTION		MIN	NOM	MAX	UNITS
Agency Approvals	UL60950-1.					
	CSA No. 60950-1.					
	EN60950-1.					
	IEC60950-1.					
Dielectric Withstand Voltage	AC to chassis.		1500			VAC
	Input to output.		3000			VDC
Electromagnetic Interference	EN55022 Conducted. C	lass A	6			dB
ESD Susceptibility	Per EN61000-4-2, Level 4		8			kV
Flicker	Per EN61000-3-3.					
Radiated Susceptibility	Per EN61000-4-3.			3		V/m
EFT/Burst	Per EN61000-4-4.		1			kV
Input Transient Protection	Per EN61000-4-5, Level 3, 2 kV (Line-to-Gnd) minimum, 1 kV (Line-to-Li	ne) minimu	m.			
RF Immunity	Per EN61000-4-6. 0.15 to 80 MHz (1 kHz sinewave)			3		V/m
Magnetic Fields	Per EN61000-4-8.			1		A/m
Voltage Dips	Per EN61000-4-11.					
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 50K	ASL Feet
Operating Temperature	Derate linearly from 50 to 70°C to 50% power at 70°C. At 100% load: MPB150 models will operate at -20°C, but will not meet all specifications.			50	°C
Storage Temperature		-40		85	°C
Forced-Air Cooling	Forced-air cooling of 15 CFM is required for full output power. Air velocity is measured with power supply mounted on 0.375" (9.5mm) standoffs. Airflow direction is from the input section to the output section. See Application Note for details.				
Temperature Coefficient	Included in total regulation of outputs.				
Relative Humidity	Non-Condensing. 5				%RH
Shock	Operating: 11 ±3ms, 3 axes, Half Sine.			15	G _{pk}
	Non-operating: 11 ±3ms, 3 axes, Half Sine.			40	∽рк
Vibration			2.4 6.0	Grms Grms	



Mechanical Drawing (-2012G, -2024G, & -2048G Models)



Mating Connectors

NOTE: Part numbers are MOLEX; equivalents are acceptable.

		MPB150 -2012G -2024G -2048G
J1	Housing	09-50-8031
	Pins	08-52-0113
J2	Housing	09-50-8061
	Pins	08-52-0113
J3	Housing	22-01-3067
	Pins	08-50-0114
J4	Housing	22-01-3027
	Pins	08-50-0114

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.