



**Features**

- RoHS lead free and lead-solder-exempt products are available
- High power density in an industry-standard 3" x 5" footprint
- Power Factor Correction (PFC) meets EN61000-3-2
- CE marked to Low Voltage Directive (Pending)
- Input transient & ESD compliance to EN61000-4-2/-3/-4/-5
- MTBF In excess of 1M hours based upon field data
- Output adjustment potentiometer

**Description**

The MPB125 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.

MPB125 single-output models deliver a fully-regulated output. The MPB125 is rated for convection as well as forced-air cooling. Full output power is available with as few as 5 Cubic Feet per Minute (CFM) forced-air cooling.

The MPB125 product line is approved to the latest international regulatory standards and displays the CE Mark.

**Single Output Model Selection**

MODEL	OUTPUT VOLTAGE (VOLTS)	MAXIMUM OUTPUT CURRENT (AMPS), 130 LFM	TOTAL REGULATION %	RIPPLE & NOISE <sup>1</sup> % pk-pk	ADJUSTMENT RANGE
<b>MPB125-1012</b> <sup>2, 3</sup>	12V	10.5A	±1%	1%	11.76 to 12.24V

**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.			1.8	ARMS
Input Protection	Non-user serviceable internally located AC input line fuse, 3.15A.				
Inrush Surge Current	Internally limited by thermistor, one cycle, 25° C.	110VAC:		23	APK
		220VAC:		46	
Power Factor Circuitry	Active PFC meets requirements of EN61000-3-2.				
Operating Frequency	Switching frequency of main transformer.		45		kHz

**NOTES:**

- <sup>1</sup> Maximum peak-to-peak noise expressed as a percentage of output voltage, 20 MHz bandwidth.
- <sup>2</sup> Maximum forced-air output power is 125 watts with 5 CFM airflow.
- <sup>3</sup> Maximum convection output power is 70 watts.

**Ordering Information:**

OPTIONS	SUFFIXES TO ADD TO PART NUMBER
RoHS lead solder exempt <sup>1</sup>	No RoHS suffix character required.
RoHS compliant for all 6 substances	Add "G" as the last character of the part number.

<sup>1</sup> The solder exemption refers to all the restricted materials except lead in solder.

## Output Specifications

PARAMETER	CONDITIONS/DESCRIPTION	MIN	NOM	MAX	UNITS
Efficiency	Full Load, 230VAC.		80		%
Minimum Loads	No Minimum Load is Required				Amps
Ripple and Noise	Full load, 20 MHz bandwidth.	See Model Selection Chart			
Output Power (Note 1)	At 5 CFM forced-air cooling. See Application Note #M3 for details. Convection:			125 70	Watts
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.	See Model Selection 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	ms

## Interface Signals and Internal Protection

PARAMETER	CONDITIONS/DESCRIPTION	MIN	NOM	MAX	UNITS
Overvoltage Protection	MPB125-1012	13.5		16.5	VDC
Overload Protection	Fully protected against output short circuit or overload. Automatic recovery upon removal of overload condition.				
Thermal Shutdown	Protected against overtemperature conditions. Unit recovers when overtemperature condition is removed.				

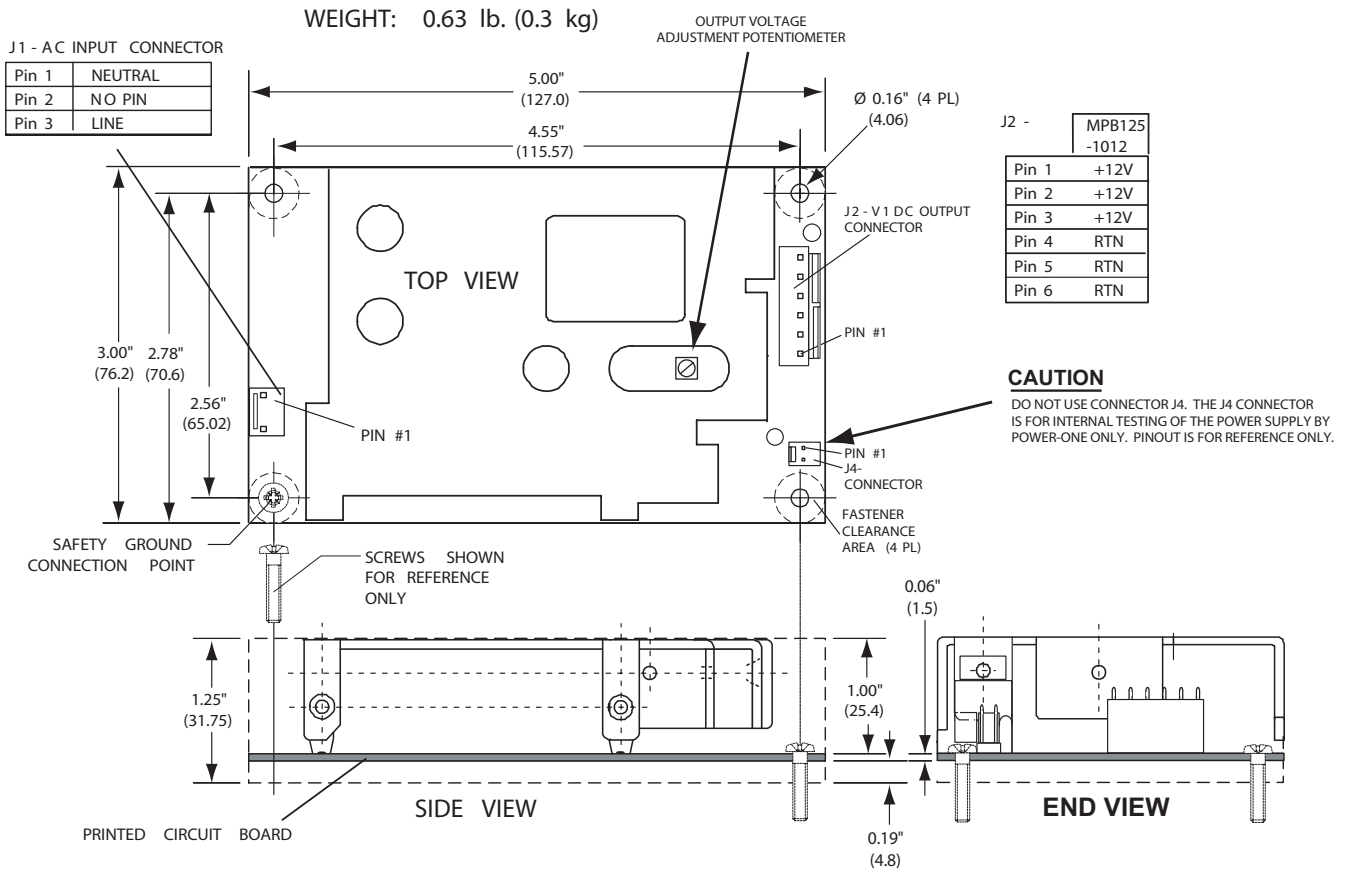
## Safety, Regulatory, and EMI Specifications

PARAMETER	CONDITIONS/DESCRIPTION	MIN	NOM	MAX	UNITS
Agency Approvals	UL60950-1. CSA 22.2 No. 60950-1. EN60950 (TÜV). IEC60950-1		APPROVED		
Dielectric Withstand Voltage	AC to chassis. Input to output.	1500 3000			VAC VDC
Electromagnetic Interference	EN55022 Conducted.	B			Class
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-Line) minimum.				
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			10K	ASL Feet
	Non-Operating			50K	
Operating Temperature	Derate linearly from 50 to 70°C to 50% power at 70°C	At 100% load: 0		50	°C
Storage Temperature		-40		85	°C
Forced-Air Cooling	Forced-air cooling of 5 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		95	%RH
Shock	Operating: 11 ±3ms, 3 axes, Half Sine.			15	G <sub>pk</sub>
	Non-operating: 11 ±3ms, 3 axes, Half Sine.			40	
Vibration	Operating: Random vibration, 5-500 Hz, 10 minutes each axis.			2.4	GRMS
	Non-Operating: Random vibration, 5-500 Hz, 10 minutes each axis.			6.0	GRMS

**Mechanical Drawing (MPB125-1012 Model)**



**Mating Connectors**

**NOTE: Part numbers are MOLEX; equivalents are acceptable.**

MPB125 -1012		
J1	Housing	09-50-8033
	Pins	08-52-0113
J2	Housing	09-50-8063
	Pins	08-52-0113

**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.