

BLP30 AC-DC Series Data Sheet

30 Watts



Applications

- Datacom (hubs, routers)
- POS terminals
- Industrial
- Cable modems
- External disk storage
- Medical instrumentation
- Computers

Features

- RoHS compliant for all six substances
- 2" x 4" footprint
- Component height less than 1"
- 25 W rating with natural convection cooling
- 30 W rating with 10 CFM airflow
- Compliance to EMI Class B
- Universal AC input
- Short-circuit protection
- Overvoltage protection
- CE marked to Low Voltage Directive (Pending)
- Compliance to EN61000-4-2/-3/-4/-5/-6/-8/-11
- Two-year warranty

Description

The BLP30 Series' economical and compact construction provides single or three-output AC to DC power conversion to meet the requirements of most commercial and industrial applications.

Single-Output Model Selection

Model	Nominal Output Voltage (VDC)	Min-Max Output Current (Amps), Convection	Min-Max Output Current (Amps), Forced Air ¹	Peak Output Current (Amps) ²	Total Regulation (%) ³	Ripple & Noise pk-pk % ⁴
BLP30-1005G	5V	0 – 5	0 – 6	7.2	±2	1
BLP30-1012G	12V	0 – 2.1	0 – 2.5	3.0	±2	1
BLP30-1024G	24V	0 – 1.0	0 – 1.25	1.5	±2	0.6

Triple-Output Model Selection

Model	Nominal Output Voltage (VDC)	Min-Max Output Current (Amps), Convection	Min-Max Output Current (Amps), Forced Air ¹	Peak Output Current (Amps) ²	Total Regulation (%) ³	Ripple & Noise pk-pk % ⁴
BLP30-3000G	+5V	0.2 – 2.5	0.2 – 3.5	5	±2	1%
	+12V	0.1 – 1.2	0.1 – 2.0	3	±5	1%
	-12V	0.0 – 0.3	0.0 – 0.5	1	±5	1%

¹ 10 CFM or 260 LFM (average measurement of six equally-distributed points through a 3.5" x 1.6" (9 cm x 4 cm) cross-sectional area with power supply mounted on a 0.25" (6.35 mm) standoffs. Recommended airflow direction is from the AC input to the DC output.

² Peak current duration for less than 30 seconds with a max duty cycle of 10%.

³ At 25 °C ambient including voltage set point tolerance, line, and load regulation

⁴ Maximum peak-to-peak noise expressed as a percentage of output voltage, 20 MHz bandwidth, measured with a twisted pair differentially across a 10 µF E-cap and a 0.1 µF ceramic cap in parallel. The point of measurement is within 1 cm of the output connection.

ELECTRICAL SPECIFICATIONS

Input Specifications

Parameter	Conditions/Description	Min.	Nom.	Max.	Units
Input Voltage - AC	Single-phase continuous input range	90	100 - 250	264	VAC
Input Voltage - DC		127	160/325	375	VDC
Input Frequency	AC Input	47	50 - 60	63	Hz
Input Current	At 90 VAC input., 30W		0.75		A rms
Inrush Surge Current	Internally limited. 115 VAC, Max Power, 25 °C Internally limited. 230 VAC, Max Power, 25 °C			16 32	A pk A pk
Input fuse	Non-user serviceable internally located AC input line fuse is provided.				
Efficiency	At maximum output power.	70	75		%
Switching Frequency		60		69	kHz

Output Specifications

Parameter	Conditions/Description	Min.	Nom.	Max.	Units
Output power	With convection cooling. See Model Selection. With forced-air cooling. See Model Selection.			25 30	Watts
Load transient	Vo1, Vo2, or Vo3 deviation due to a 50 to 100% load change at a rate of 1A/μs.			±5	%
Turn on Delay	Time required for outputs to be within regulation after initial application of AC input.			1.5	Sec
Rise Time	Time required for output voltage to rise from 10% to 90%.			20	ms
Hold-up Time	At 30W, 115 VAC, 60 Hz.	20			Ms
Overvoltage Protection	Main output. 5V: 12V: 24V:	5.6 14.0 29.0		6.9 16.7 34.2	V
Short-circuit Protection	Fully-protected against output short circuit.				
Overshoot	Single-output models.			2	%
Overshoot	Triple-output models.			5	%

Regulatory & Safety Approvals

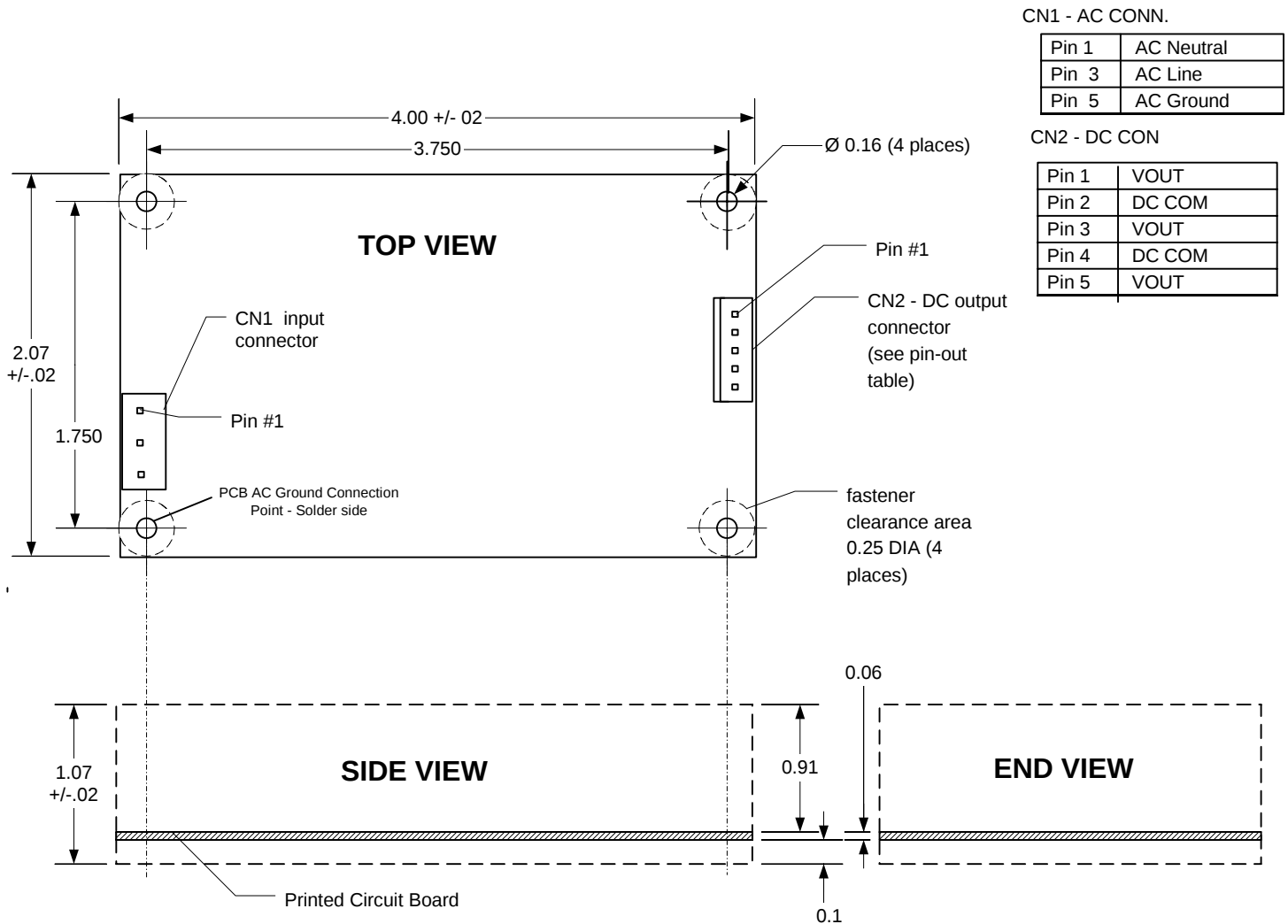
Parameter	Conditions/Description	Min.	Nom.	Max.	Units
UL60950-1	All models are approved.				
CSA-C22.2, No. 60950-1-03	All models are approved.				
EN 60950-1 /IEC 60950-1	All models are approved.				
CE Mark for LVD	All models are approved.				
CB Approval	Completed.				
Ground Continuity	At 12 VDC.			30	A
Dielectric Withstand Voltage	Input-to-Ground (Basic)	2121			VDC
	Input-to-Output (Reinforced). The primary to secondary test is not performed on completed assemblies.	4242			VDC
	Output-to-Ground (Functional).	500			VDC
Electromagnetic Interference	FCC Part 15. Conducted: CISPR 22 and CISPR 11. Conducted:	B B			Class
ESD	Per EN 61000-4-2, level 2.				
Radiated Susceptibility	Per EN 61000-4-3, level 3.		3		V/m
EFT/Burst	Per EN 61000-4-4, level 3.	1			kV
Input Transient Protection	Per EN 61000-4-5, class 3. Line-to-Line: Line-to-Ground:	1 2			kV
RF Immunity	Per EN 61000-4-6, level 3.		3		V/m
Magnetic Fields	Per EN 61000-4-8.		1		A/m
Voltage Interruptions	Per EN 61000-4-11				
Leakage Current	Per EN 60950 At 115 VAC: At 230 VAC:			0.2 0.4	mA

Environmental Specifications

Parameter	Conditions/Description	Min.	Nom.	Max.	Units
Altitude	Operating. Non-Operating.			10K 50K	ASL ft ASL ft
Operating Temp	0 °C to 70 °C with linear derating to 50% above 50 °C. Unit will start-up at -20 °C, but will not meet all published specifications.	0	50	70	°C
Storage Temp		-40		85	°C
Temperature Coefficient	0 °C to 70 °C (after 15-minute warm-up).		±0.02		%/ °C
Relative Humidity	95% relative humidity @ 40 °C, non-condensing			95	%RH
Shock	Operating: half-sine, 11 ±3 ms, 3-axis.			15	G
	Non-Operating: half-sine, 11 ±3 ms, 3-axis.			40	G
Vibration	Operating: Random vibration; 5 to 500 Hz (10 minutes, each axis).			2.4	Grms
	Non-Operating: Random vibration; 5 to 500 Hz (10 minutes, each axis).			6	Grms

Mechanical Drawing – Single Output Models

All dimensions are in inches.

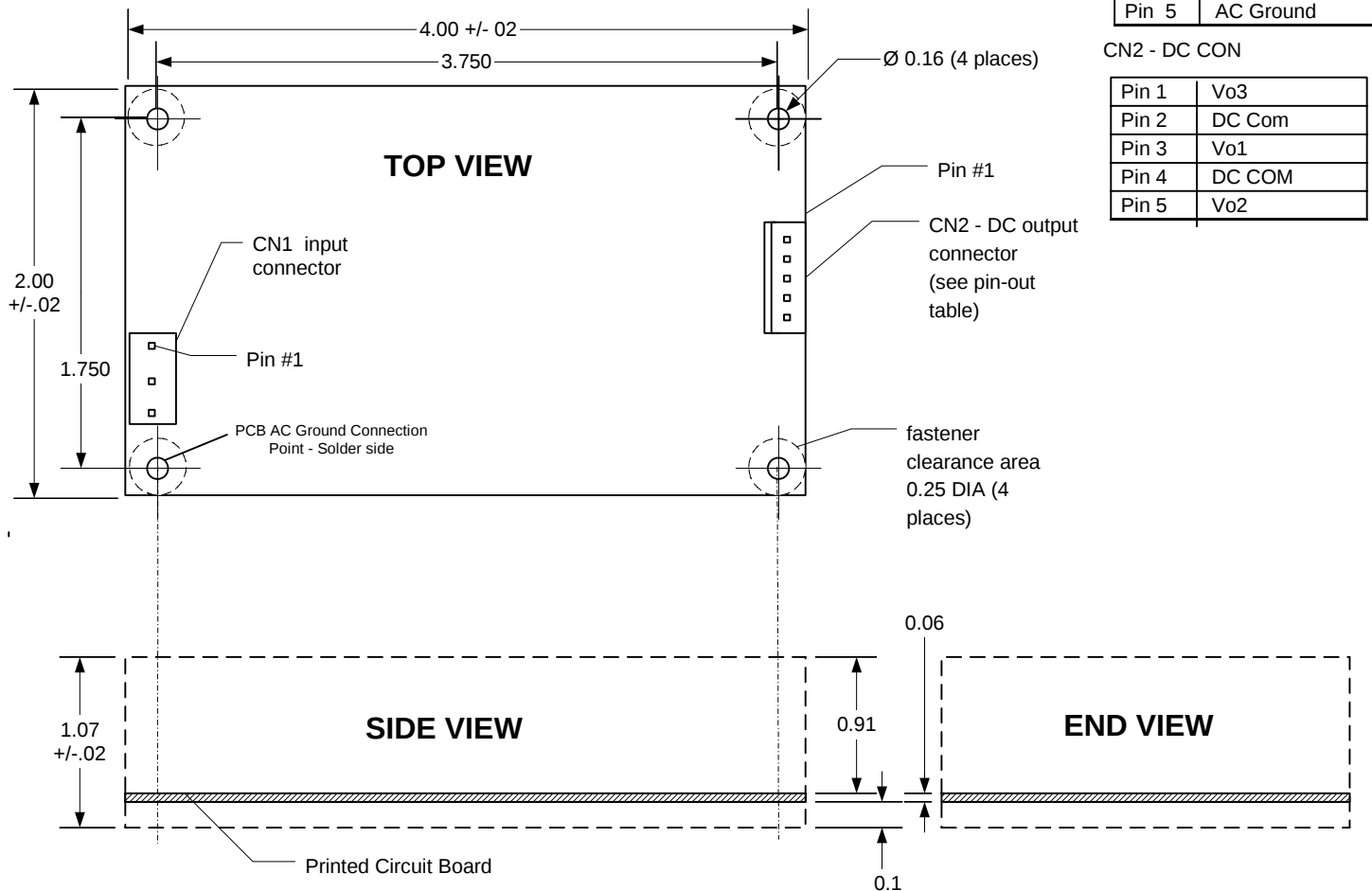


RECOMMENDED MATING CONNECTORS*

	HOUSING	PIN
CN1 and CN2	MOLEX 22-01-2051	MOLEX 08-52-0123
	MOLEX 22-01-2057	MOLEX 08-52-0101
	MOLEX 22-01-3057	
	LEOCO 2530S05000	LEOCO 2533TPB0000

* Equivalent housings and pins can also be used.

Mechanical Drawing – Triple Output Model
All dimensions are in inches.



RECOMMENDED MATING CONNECTORS*

	HOUSING	PIN
CN1 and CN2	MOLEX 22-01-2051	MOLEX 08-52-0123
	MOLEX 22-01-2057	MOLEX 08-52-0101
	MOLEX 22-01-3057	
	LEOCO 2530S05000	LEOCO 2533TPB0000

* Equivalent housings and pins can also be used.

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.