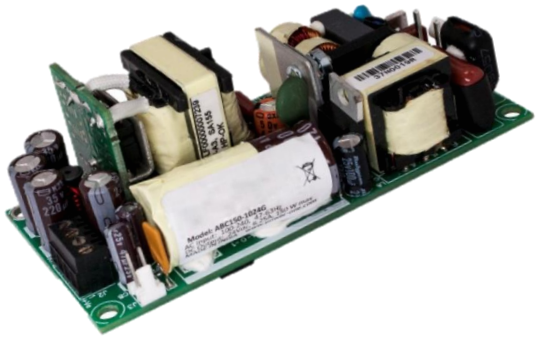
ABC150 Series

Open Frame Power Supplies

The ABC150 Series of open-frame power supplies, with its wide universal 90 - 264 VAC input range and high power density, is available at 150 W of output power and a variety of single output voltages.

The high efficiency and high power density of the ABC family ensures minimal power loss in end-use equipment, thereby facilitating higher reliability, easier thermal management and meets regulatory approvals for environmentally-friendly end products.

These power supplies are ideal for telecom, datacom, industrial equipment and other applications.



RoHS Compliant

Key Features & Benefits

- 4 x 2 x 1.3 Inch Form Factor
- 150 W with Forced-Air Cooling
- 12 V @ 0.5 A fan voltage auxiliary output
- High Efficiency > 86%

  Low conducted and radiated noise
- Light weight
- IEC Protection Class Options:
  - Class I: Earthing Tab J4 (no suffix)
  - Class II: No Earthing Tab (-2 suffix)
- Cover Kit Accessory Available
- RoHS Compliant

Applications

- Instrumentation
- Lighting
- Industrial Applications
- Applied Computing
- Renewable Energy
- Test and Measurement
- Robotics
- Wireless Communication

1. MODEL SELECTION

MODEL[1]	CONNECTOR	OUTPUT VOLTAGE	MAX LOAD CONVECTION [2]	MAX LOAD 300 LFM [2,3,4]	MINIMUM LOAD	RIPPLE & NOISE[5]
ABC150-1005G	JST	5 VDC	16.0 A	16.0 A	0.0 A	1%
ABC150-1T05G	Screw Terminal	5 VDC	16.0 A	20.0 A	0.0 A	1%
ABC150-1012G	JST	12 VDC	8.33 A	12.5 A	0.0 A	1%
ABC150-1T12G	Screw Terminal	12 VDC	8.33 A	12.5 A	0.0 A	1%
ABC150-1015G	JST	15 VDC	6.67 A	10.0 A	0.0 A	1%
ABC150-1T15G	Screw Terminal	15 VDC	6.67 A	10.0 A	0.0 A	1%
ABC150-1024G	JST	24 VDC	4.17 A	6.25 A	0.0 A	1%
ABC150-1T24G	Screw Terminal	24 VDC	4.17 A	6.25 A	0.0 A	1%
ABC150-1048G	JST	48 VDC	2.08 A	3.13 A	0.0 A	1%
ABC150-1T48G	Screw Terminal	48 VDC	2.08 A	3.13 A	0.0 A	1%
COVER-201-XBC[6]	Metal cover kit accessory					

2. INPUT SPECIFICATIONS

Specifications are for nominal input voltage, 25°C unless otherwise stated.

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Input Voltage	Universal	90-264 VAC / 120-390 VDC
Input Frequency		47 to 63 Hz
Input Current	120 VAC: 230 VAC:	1.7 A max. 0.85 A max.
No Load Power		1.2 W
Inrush Current	120 VAC: 230 VAC:	35 A max. 65 A max.
Leakage Current	120 VAC: 230 VAC:	< 150 µA < 300 µA
Power Factor	120 VAC: 230 VAC:	0.99 0.95
Switching Frequency	PFC converter (variable) Resonant converter (variable)	35 - 250 kHz, 90 kHz typical 35 - 250 kHz, 90 kHz typical

[1] For Class II (without input Earth pin) add suffix -2 (e.g.: ABC150-1012G-2).
[2] Combined output power from V1, VSTBY and VFAN should not exceed the total output power rating.
[3] Fan output voltage tolerance is +/-20%.
[4] Peak current for fan output is 1 A.
[5] Ripple is 2% up to 20% load and < 1% above 20% load. Ripple is peak to peak with 20 MHz bandwidth and 10 µF (Tantalum capacitor) in parallel with a 0.1 µF capacitor at rated line voltage and load ranges.
[6] When used in Cover Kit, de-rate output power to 70 % under all operating conditions.

3. OUTPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Output Power	Derate output power linearly to 80% from 90 VAC to 80 VAC input Peak Power 170 W for 0.2 s	150 W
Efficiency	120 VAC: 230 VAC:	84% typical 86% typical
Hold Up Time	120 VAC: 230 VAC:	6 ms 10 ms
Line Regulation		+/-0.5%
Load Regulation		+/-2.0%
Transient Response	Main output 50 to 100% load change, 50 Hz, 50% duty cycle, 0.1A / µs	< 10%, recovery time < 5 ms
Rise Time		< 100 ms
Set Point Accuracy	Main output	± 1%
Voltage Adjustment	V1	± 3 %
Over Current Protection		110% typical above rating
Over Voltage Protection	V1	110 to 150%
Short Circuit Protection	Short term, Automatic recovery	

4. ENVIRONMENTAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION		SPECIFICATION
Operating Temperature	Refer to derating curves Start-up is guaranteed		-20 to 70°C -20 to 0°C
Storage Temperature			-40 to 70° C
Cooling	5 V model	Convection: 300 LFM:	80 W 100 W
	Other models	Convection: 300 LFM:	100 W 150 W
Humidity	Non Condensing		95%
Altitude	Operating: Non-Operating:		10,000 ft. 40,000 ft.
Reliability	MTBF according to Telcordia -SR332-Issue 3		2.4 million hours

5. EMC SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Conducted Emissions	EN55032-B, CISPR22-B, FCC PART15-B	Pass
Radiated Emissions	EN 55032 A; with external core (King core K5B RC 25x12x15-M in input cable)	Pass Level B
Input Current Harmonics	EN 61000-3-2	Class D
Voltage Fluctuation and Flicker	EN 61000-3-3	Pass
ESD Immunity	EN 61000-4-2	Level 3, Criterion A
Radiated Field Immunity	EN 61000-4-3	Level 3, Criterion A
Electrical Fast Transient Immunity	EN 61000-4-4	Level 3, Criterion A
Surge Immunity	EN 61000-4-5	Level 3, Criterion A
Conducted Immunity	EN 61000-4-6	Level 3, Criterion A
Magnetic Field Immunity	EN 61000-4-8	Level 3, Criterion A
Voltage Dips, Interruptions	EN 61000-4-11	Criterion A & B

6. SAFETY SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Isolation Voltage	Input to Output:	Min. 4242 VDC
Safety Standards	Approved to the latest edition of the following standards: CSA/UL60950-1, EN60950-1 and IEC60950-1	
Agency Approvals	Nemko, UL, C-UL	
CE mark	Complies with LVD Directive	

7. CONNECTOR & PIN DESCRIPTION

CONNECTOR	PIN	DESCRIPTION / CONDITION		MANUFACTURER / PN
AC Input Connector	J1	Pin 1 Pin 2	AC Line AC Neutral	Molex: 26-60-4030 or equivalent Mating: 09-50-3031; Pins: 08-50-0106
DC Output Connector	J2	Pin 1,2 Pin 3,4	V1 RTN	Option-1: Tyco: 1776112-4 or equivalent Mating: 13 AWG wire Option-2: JST: B4P-VH-B (LF) (SN) or B4P-VH (LF) (SN) or equivalent Mating: VHR-4M; Pins: SVH-41T-P1.1
Fan	J3	Pin 1 Pin 2	VFAN (12 V / 0.5 A) RTN	Tyco: 640456-2 or equivalent Mating: 640440-2
Earthing Tab	J4			Molex: 19705-4301 or equivalent Mating: 190030001

8. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION
Weight	150 g (0.33 lbs.)
Dimensions	101.6 x 50.8 x 33.6 mm (4.0 x 2.0 x 1.3 inch)

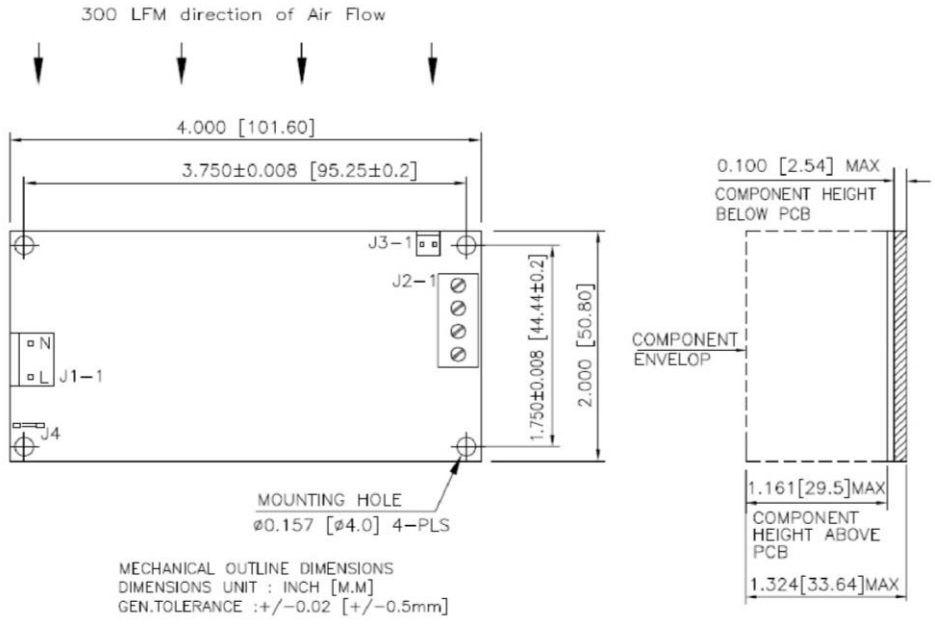
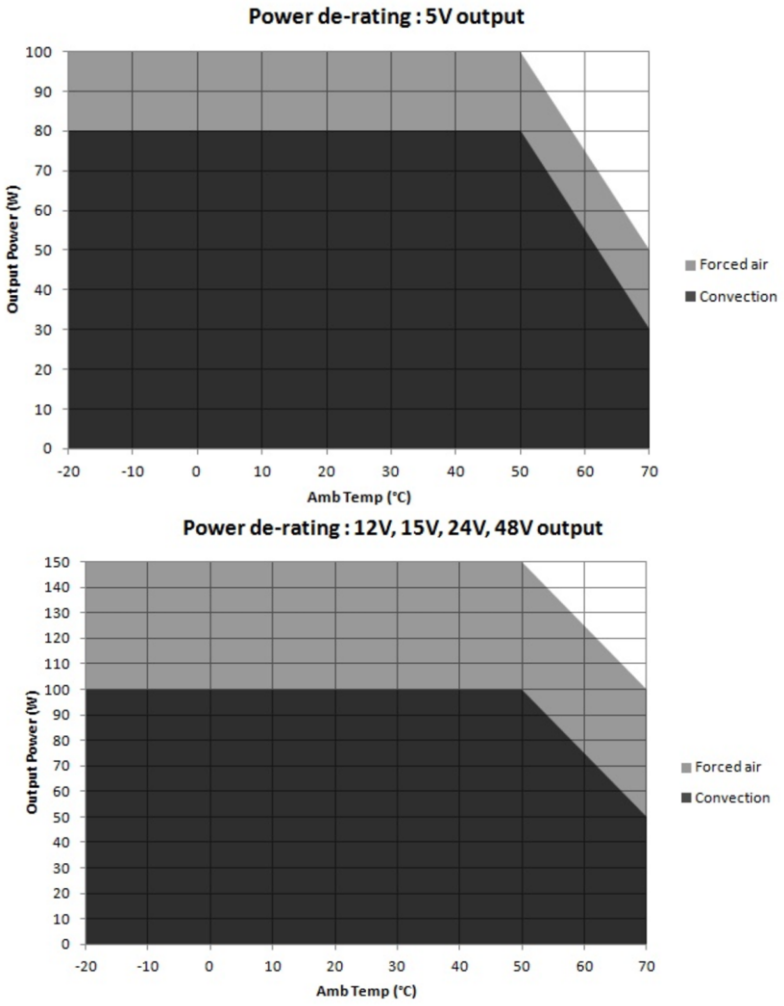


Figure 1 - Mechanical Drawing

NOTES: In case the PCB is mounted in a metal enclosure, using metal hardware ensure the following:

1 Stand off, used to mount PCB has OD of 5.4 mm max.
2 Screws, used to fix PCB on stand off, have head dia of 6.0 mm max.
3 Washer, if used, to have dia of 6.5 mm max.



Convection load: 80 W up to 50 °C
De-rate above 50 °C @ 3.125% per °C

Forced air cooled load: 100W up to 50°C
De-rate above 50 °C @ 2.5% per °C

Convection load: 100 W up to 50 °C
De-rate above 50 °C @ 2.5% per °C

Forced air cooled load : 150 W up to 50°C
De-rate above 50 °C @ 1.67% per °C

Figure 2. Derating Curves

For more information on these products consult: tech.support@psbel.com

NUCLEAR AND MEDICAL APPLICATIONS - Products are not designed or intended for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems.
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.

bel POWER SOLUTIONS & PROTECTION
a bel group

Asia-Pacific +86 755 298 85888
Europe, Middle East +353 61 225 977
North America +1 408 785 5200

