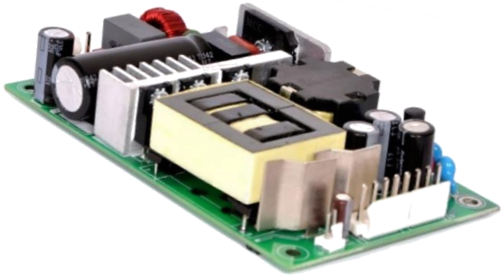
ABC350 Series

Low Profile

Open Frame Power Supplies

The ABC350 Series of open frame power supplies feature a wide universal AC input range of 90 – 264 VAC, offering 350 W of output power in a compact 3 x 5 x 1 inch footprint, with a variety of isolated 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

- 3 x 5 x 1 Inch Form Factor
- 350 W with Forced Air Cooling & 200 W with Convection Cooling
- Efficiencies up to 94%
- No Load Power < 0.5 W
- -40 to 70°C Operating Temperature
- 12 V / 0.5 A Fan Output, Thermal Shut-Down Feature
- 2.56 Million Hours, Telcordia -SR332-Issue 3 MTBF
- IEC/EN/UL 62368-1:2018 (Ed 3.0) Certified
- IEC/EN 61558 Compliant (Suitable for Household and Similar electrical equipment certified under IEC/EN 60335-1 standards)
- CCC (China Compulsory Certification approval)
- Approved with metal enclosures/accessories
- RoHS Compliant

Applications

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

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1. MODEL SELECTION

MODEL NUMBER [1]	DESCRIPTION	VOLTAGE	MAX. LOAD (CONVECTION)	MAX. LOAD (375 LFM)	POWER
ABC350-1T12L ABC350-1012L [2]	Screw Terminal Molex Connector	12 V	15 A	25 A 18.75 A	300 W 225 W
ABC350-1T15L ABC350-1015L [2]	Screw Terminal Molex Connector	15 V	12 A	21.67 A 18. A	325 W 270 W
ABC350-1T24L ABC350-1024L	Screw Terminal Molex Connector	24 V	8.33 A	14.60 A	350 W
ABC350-1T30L ABC350-1030L	Screw Terminal Molex Connector	30 V	6.67 A	11.67 A	350 W
ABC350-1T48L ABC350-1048L	Screw Terminal Molex Connector	48 V	4.17 A	7.30 A	350 W
ABC350-1T58L ABC350-1058L	Screw Terminal Molex Connector	58 V	3.45 A	6.04 A	350 W
COVER-350-XBC [3]	Metal cover kit (accessory)				

[1] Class II version available. Add suffix "-2" at the end of the Model Number
[2] Models ABC350-1012L and ABC350-1015L do not have CCC approval
[3] When used in Cover Kit, de-rate output power to 70 % under all operating conditions.

2. INPUT SPECIFICATIONS

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

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Input Voltage	Universal (Derate from 100% at 100 VAC to 90% at 90 VAC)	90-264 VAC / 390 VDC
Input Frequency		47 - 63 Hz
Input Current	115 VAC: 230 VAC:	3.6 A max. 1.8 A max.
No Load Power	Typical	>0.5 W
Inrush Current	115 VAC: 230 VAC: 264 VAC:	25 A 45 A 75 A
Leakage Current	Typical	300 µA
Power Factor	Full Load	> 0.95
Switching Frequency	PFC: PWM:	70 - 130 KHz 50 - 80 KHz

3. OUTPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Output Voltage		12 to 58 V
Output Power [4]	With 375 LFM: Convection:	350 W 200 W
Output Adjustment		+/-3%
Hold-up Time	Full Load: Convection Load:	> 8 ms typical > 14 ms typical
Efficiency	48 V, 58 V: 24 V, 30 V: 12 V, 15 V:	94% 93% 92%
Line Regulation [6]		+/-0.5%
Load Regulation [6]		+/-1%
Minimum Load		0.0 A
Transient Response	50-100% step load change, at 0.1A/µS slew rate, 50% duty cycle, 50 Hz = 5% ,	recovery time < 5 ms
Ripple [5, 6]	For all outputs	1.0 % max
Rise Time	Typical	55 ms
Set Point Tolerance [6]		+/-1%
Over Current Protection	Hiccup mode / Auto Recovery	>110%
Over Voltage Protection	Hiccup mode / Auto Recovery	110 to 140%
Short Circuit Protection	Hiccup mode / Auto Recovery	
Cooling	With 375 LFM forced air cooling at 100 to 264 VAC: With natural convection cooling at 100 to 264 VAC:	350 W 200 W

[4] Combined output power of main output, fan supply shall not exceed max. power rating.
[5] Ripple is peak to peak with 20 MHz bandwidth and 10 µF (Electrolytic capacitor) in parallel with a 0.1 µF capacitor at rated line voltage and load ranges.
[6] Fan supply output voltage tolerance including set point accuracy, line and load regulation is +/-10 % and ripple and noise is less than 10 %.

4. 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 4, 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

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5. SAFETY SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Isolation Voltage	Input to Output: for ITE application Input to GND:	3000 VAC 1500 VAC
Safety Standards	IEC 62368-1:2018, IEC 61558-1:2005, IEC 61558-1:2005/AMD1:2009, IEC 61558-2-16:2009, IEC 61558-2-16:2009 /AMD1:2013, IEC 60950-1(ed.2); am1; am2, EN 61558-2-16:2009; A1, EN 61558-1:2005; A1, EN 60950-1:2006; A11; A1; A12; A2, UL 62368-1 and CAN/CSA C22.2 No. 62368-1:19 UL 60950-1 and CAN/CSA C22.2 No. 60950-1-07, GB4943.1-2011; GB9254-2008; GB17625.1-2012	
Agency Approvals	Nemko, UL, C-UL, CCC	
CE mark	Complies with LVD Directive	

6. ENVIRONMENTAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Operating Temperature [7]	-40 to 0°C startup guaranteed, with spec deviation [8]	-40 to +70°C
Storage Temperature		-40 to 85° C
Altitude	Operating: Non-operating:	16,000 ft. 40,000 ft.
Humidity	Non-Condensing	5% to 95%
Reliability	MTBF according to Telcordia - SR332-Issue 3	2.56 million hours

[7] Thermal shutdown feature: The power supply goes in hiccup mode when the temperature of PCB exceeds 110 °C (+/-10 °C).
[8] Output ripple can be more than 10% of the output voltage.

7. CONNECTOR & PIN DESCRIPTION

CONNECTOR	PIN		DESCRIPTION / CONDITION		MANUFACTURER / PN
AC Input Connector	J1		Pin 1 Pin 2 Pin 3	AC Line Not Fitted AC Neutral	Molex: 26-60-4030 Mating: 09-50-3031; Pins: 08-50-0106
DC Output Connector	J2	Screw Terminal (Option 1)	Pin 1 Pin 2	V1 +VE V1 - VE	6-32 inches Screw Pan HD Mating: 16 AWG wire crimped to Ring Tongue Terminal AMP: 8-31886-1
		Molex Connector (Option 2)	Pin 1,2,3,4 Pin 5,6,7,8	V1 +VE V1 - VE	Molex: 26-60-4080 Mating: 09-50-3081; Pins: 08-50-0106
Aux (Fan) Output	J3		Pin 1 Pin 2	FAN +VE FAN -VE	AMP :640456-2 Mating: 640440-2
Earth	J4				Molex: 19705-4301 Mating: 19003-0001

8. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION
Weight	300 g
Dimensions	76.2 x 127.0 x 25.4 mm (3 x 5 x 1 inch)

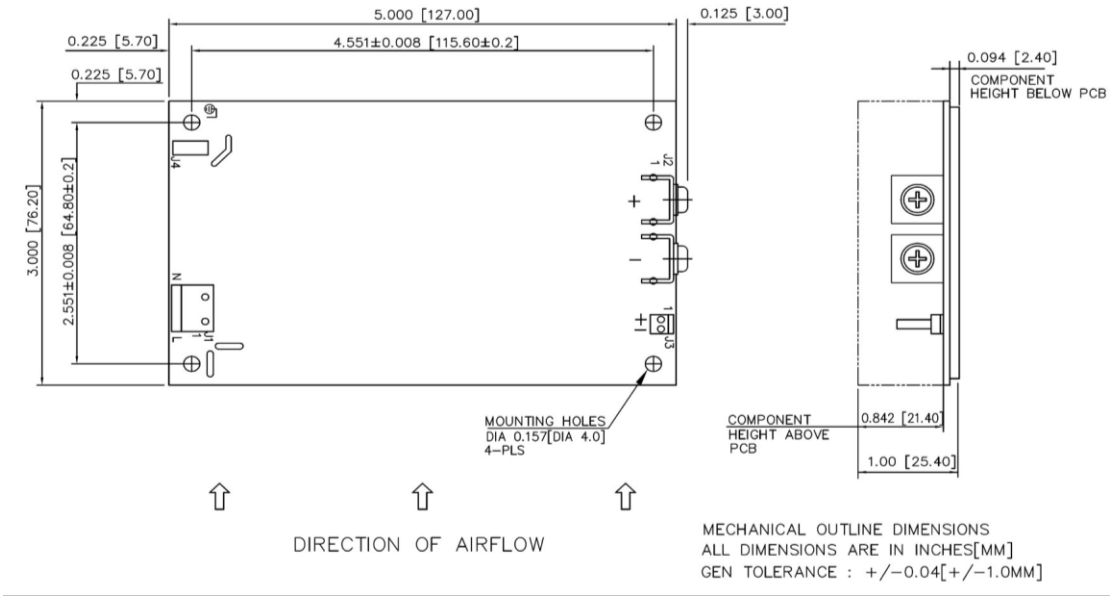


Figure 1. Mechanical Drawing - Screw Terminal (Option 1)

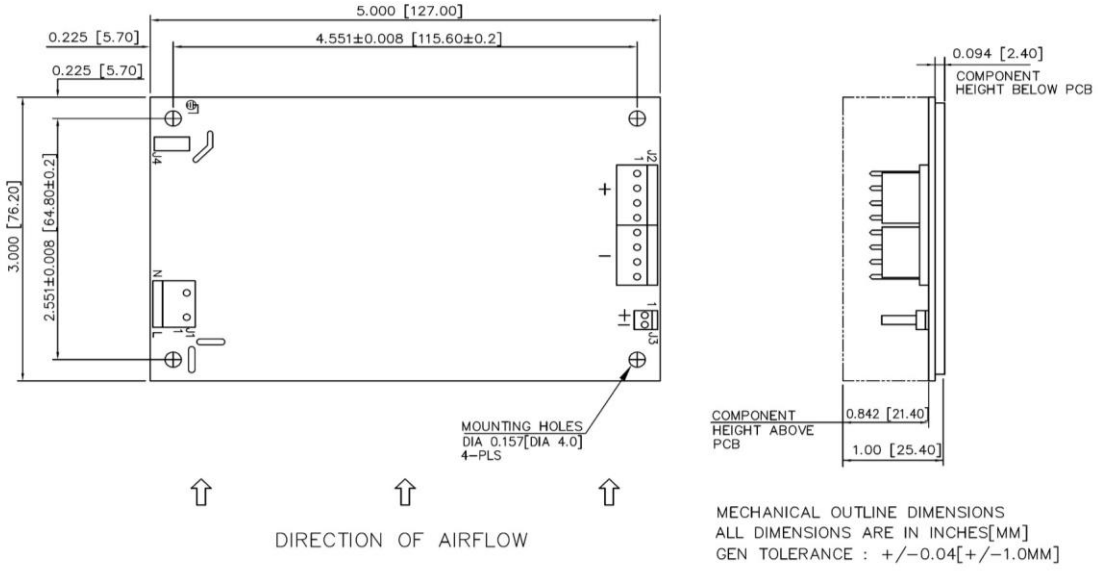


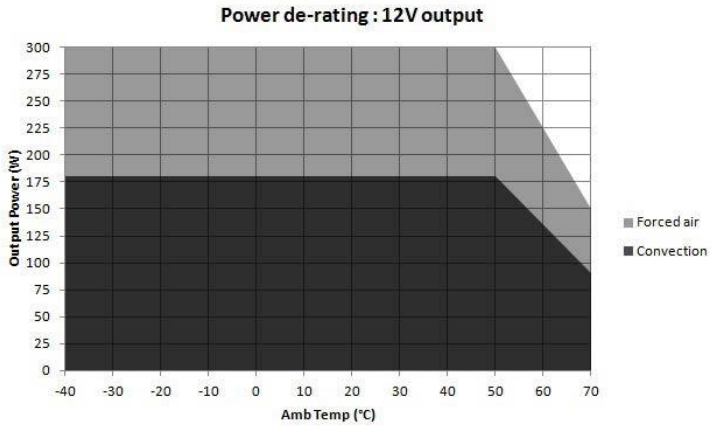
Figure 2. Mechanical Drawing - Molex Header (Option 2)

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.

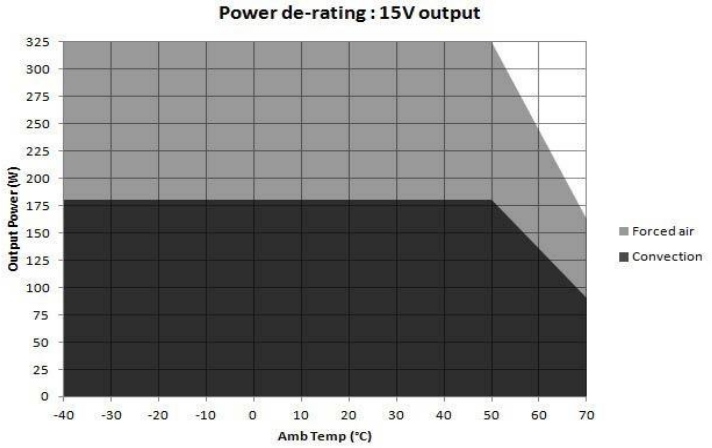
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9. POWER DERATING CURVES



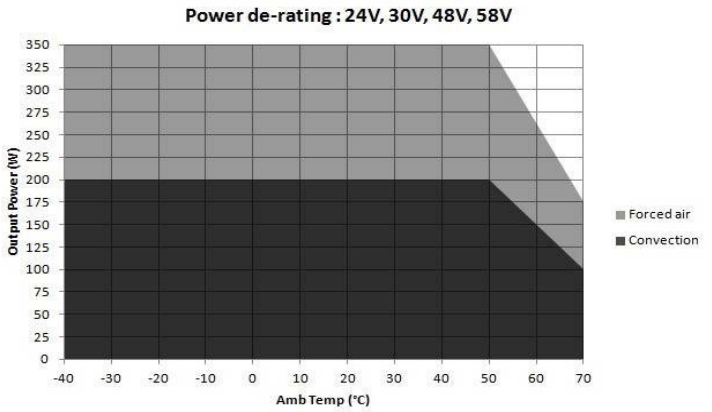
Convection load: 180 W up to 50 °C
De-rate above 50 °C @ 2.5% per °C

Forced air cooled load: 300 W up to 50°C
De-rate above 50 °C @ 2.5% per °C



Convection load: 180 W up to 50 °C
De-rate above 50 °C @ 2.5% per °C

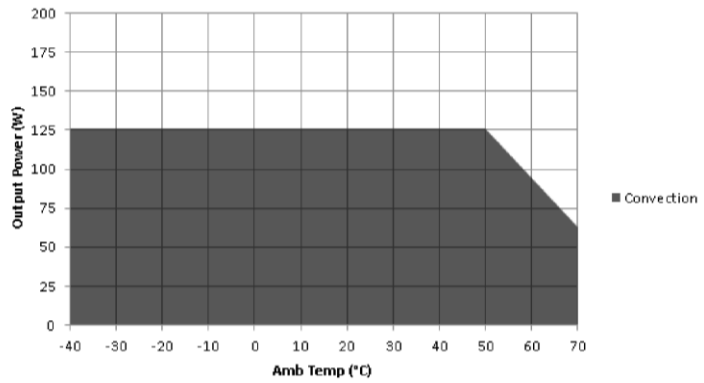
Forced air cooled load: 325 W up to 50°C
De-rate above 50 °C @ 2.5% per °C



Convection load: 200 W up to 50 °C
De-rate above 50 °C @ 2.5% per °C

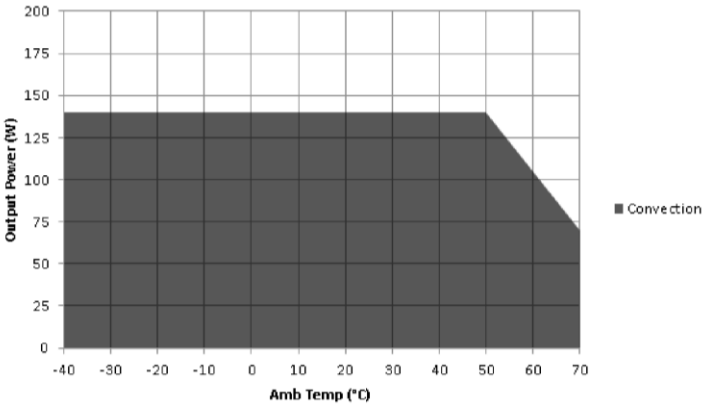
Forced air cooled load: 350 W up to 50°C
De-rate above 50 °C @ 2.5% per °C

Power de-rating: 12V, 15V outputs with Cover kit



Convection load: 126 W up to 50 °C
De-rate above 50 °C @ 2.5% per °C

Power de-rating: 24V, 30V, 48V, 58V outputs with Cover kit



Convection load: 140W up to 50 °C
De-rate above 50 °C @ 2.5% per °C

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.

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