Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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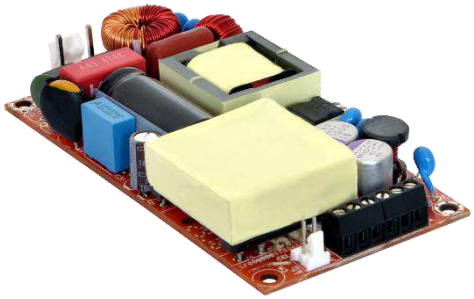
ABC180 Series

Ultra Low Profile

Open Frame Power Supplies



RoHS Compliant

The ABC180 Series of ultra low profile open frame power supplies feature a wide universal AC input range of 80 – 264 VAC, offering up to 180 W of output power with 13 CFM, or up to 120 W with convection cooling in a compact 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 broad range of telecom, datacom, industrial equipment and other applications.

Key Features & Benefits

- 4 x 2 x 0.75 Inches Form factor
- 180 Watts with Forced Air Cooling
- Efficiencies up to 92%
- -40 to 70°C degree operating temperature
- 12 V / 0.5 A Fan Output, Thermal Shut-Down feature
- 3.37 million Hours, Telcordia -SR332-issue 3 MTBF
- Standby Power < 0.5W

Applications

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

1. MODEL SELECTION

MODEL NUMBER	CONNECTOR	VOLTAGE	MAX. LOAD (CONVECTION) 112.5 W @ 50°C	MAX. LOAD (CONVECTION) 120 W @ 40°C	MAX. LOAD (13 CFM)	MIN. LOAD	RIPPLE & NOISE[1]
ABC180-1T12L ABC180-1012L	Screw Terminal Molex Connector	12 V	9.37 A	10 A	15 A	0.0 A	2%
ABC180-1T15L ABC180-1015L	Screw Terminal Molex Connector	15 V	7.5 A	8 A	12 A	0.0 A	2%
ABC180-1T24L ABC180-1024L	Screw Terminal Molex Connector	24 V	4.68 A	5 A	7.5 A	0.0 A	1%
ABC180-1T30L ABC180-1030L	Screw Terminal Molex Connector	30 V	3.75 A	4 A	6 A	0.0 A	1%
ABC180-1T48L ABC180-1048L	Screw Terminal Molex Connector	48 V	2.34 A	2.5 A	3.75 A	0.0 A	1%
ABC180-1T58L ABC180-1058L	Screw Terminal Molex Connector	58 V	1.94 A	2.07 A	3.1 A	0.0 A	1%
COVER-180-XBC[2]	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 (Derate from 100% at 100 VAC to 77% at 80 VAC)	80-264 VAC / 390 VDC
Input Frequency		47-63 Hz
Input Current	115 VAC: 230 VAC:	2.2 A max. 1.1 A max.
No Load Power	Typical for ABC180-1XXX Typical for ABC180-1XXX-PGPF	< 0.5 W < 0.85 W
Inrush Current	115 VAC: 230 VAC: 264 VAC:	25 A 45 A 75 A
Leakage Current	Typical (N.A. For Class II Option- without input Earth pin) Touch current	300 µA < 100 µA
Power Factor	115 VAC: 230 VAC:	> 0.95 0.90
Switching Frequency	PFC PWM	70 to 130 kHz 50 to 80 kHz

[1] 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.
[2] When used in Cover Kit, de-rate output power to 70 % under all operating conditions.

3. OUTPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Output Power[3]	With 13 CFM forced air cooling With natural convection cooling at 100 to 264 VAC	180 W up to 120 W
Efficiency (typical @ 230 VAC full load)	48 V, 58 V: 24 V, 30 V: 12 V, 15 V:	92% 90% 88%
Hold-up Time	At 180 W: At 120 W:	10 ms 16 ms
Line Regulation		+/-0.5%
Load Regulation		+/-1%
Transient Response	25% step load change, at 0.1 A/ µs slew rate, 50% duty cycle, 50 Hz = 4%	 recovery time < 5 ms
Voltage Adjustment[4]		+/-3%
Rise Time	Typical	55 ms
Set Point Tolerance[5]		+/-1%
Over Current Protection		> 110%
Over Voltage Protection		110 to 140%
Short Circuit Protection	Hiccup mode	

4. ENVIRONMENTAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Operating Temperature[6]	Startup guaranteed with spec. deviation	-40 to +70°C -40 to 0°C
Storage Temperature		-40 to +85°C
Relative Humidity	Non-condensing	5% to 95%
Altitude	Operating: Non-operating:	16,000 ft. 40,000 ft.
MTBF	Telcordia -SR332-issue 3	3.37 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

[3] Combined output power of main output, fan supply shall not exceed max. Power rating.
[4] Adjustment potentiometer is located on the SMT side of the PCB.
[5] Fan supply output voltage tolerance including set point accuracy, line & load regulation is +/-10% and Ripple & noise is less than 10%.
[6] Output ripple can be more than 10% of the output voltage.

6. SAFETY SPECIFICATIONS

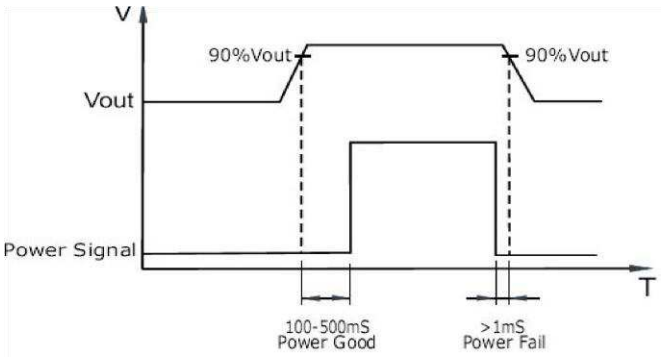
PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Isolation Voltage	Input to Output: (for ITE applications) Input to GND: (Not Applicable for Class II Option*)	3000 VAC 1500 VAC
Safety Standard(s)	Approved to the latest edition of the following standards: CSA/UL60950-1, EN60950-1 and IEC60950-1. Class1 SELV	
Agency Approvals	Nemko, UL, C-UL	
CE mark	Complies with LVD Directive	

* Class II Option means without input Earth pin.

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	Pin 1, 2, 3 Pin 4. 5. 6	V1 +VE V1 -VE	Option 1 (Screw Terminal): Molex: 39357 Series or equivalent Option 2 (Molex Connector): Molex: 26-60-4060 Mating: 09-50-3061; Pins: 08-50-0106
Aux (Fan) Output	J3	Pin 1 Pin 2	FAN +VE FAN -VE	AMP: 640456-2 Mating: 640440-2
Signal Output[7]	J4	Pin 1 Pin 2 Pin 3	Vs PGPF GDN	AMP :640456-3 Mating: 640440-3

*Fusing on neutral for ITE model is optional.



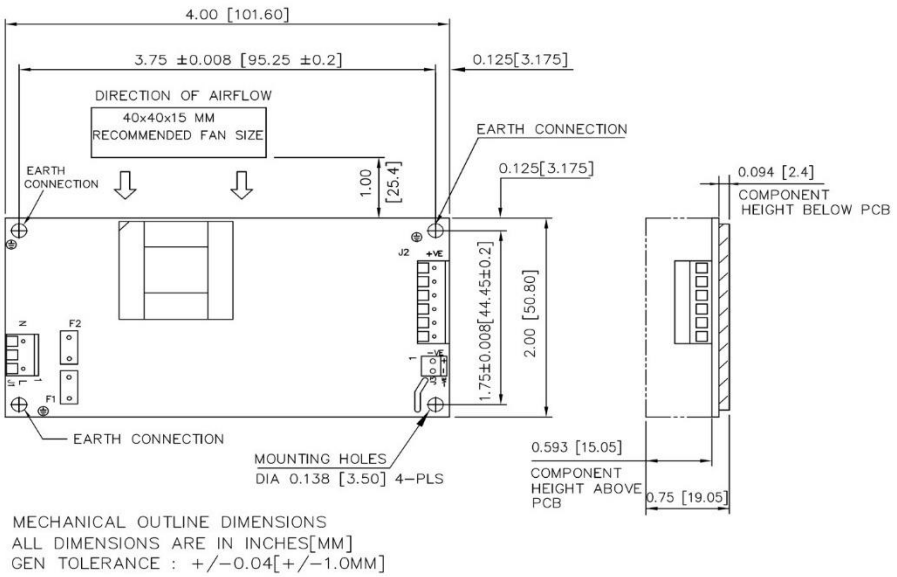
Power good / AC fail signal specs

8. MECHANICAL SPECIFICATIONS

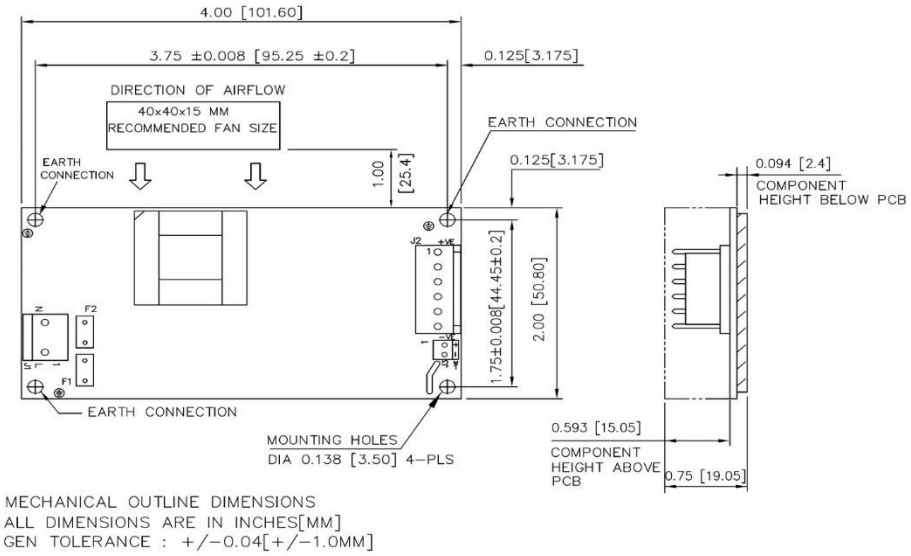
PARAMETER	DESCRIPTION / CONDITION
Weight	approx. 200 g
Dimensions	101.6 x 50.8 x 19.05 mm (4 x 2 x 0.75 inches)
Cooling[8]	180 W with 13 CFM forced air cooling (refer to Mechanical Drawing) Up to 120 W with natural convection cooling (refer to Derating Curve)

[7] A TTL signal is available at pin 2 of J4 which goes high 100-500mS after output voltage reaches 90% of set value. It goes low a minimum of 1 ms before output falls below 90% of the set value, when input AC is switched off.

[8] 180 W with 13CFM forced air cooling and 120 W with natural convection cooling at 100 to 264 VAC.



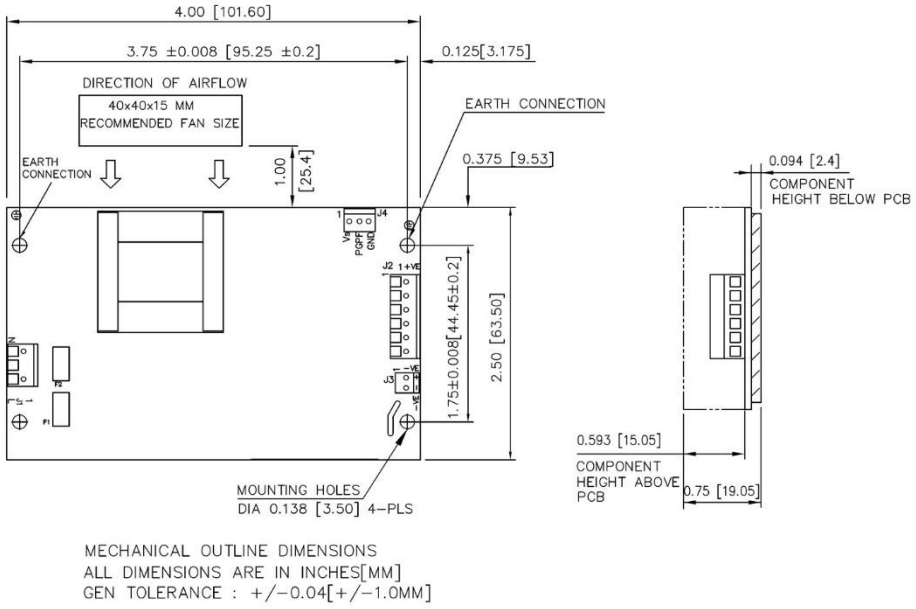
Mechanical Drawing – Option 1 without PGPF



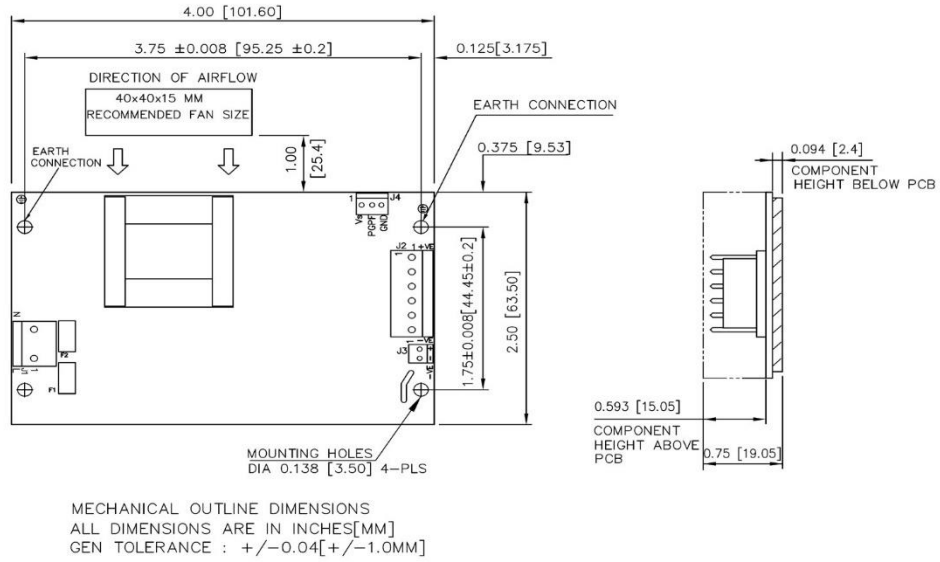
Mechanical Drawing – Option 2 without PGPF

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.



Mechanical Drawing – Option 1 with PGPF



Mechanical Drawing – Option 2 with PGPF

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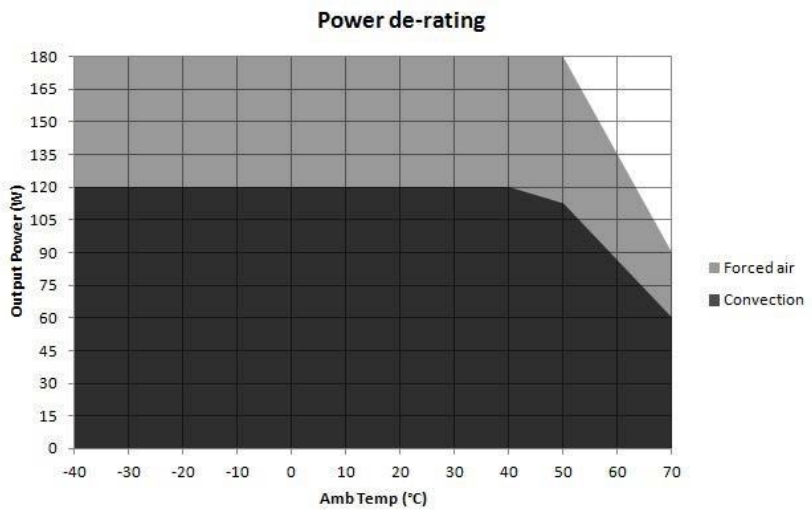
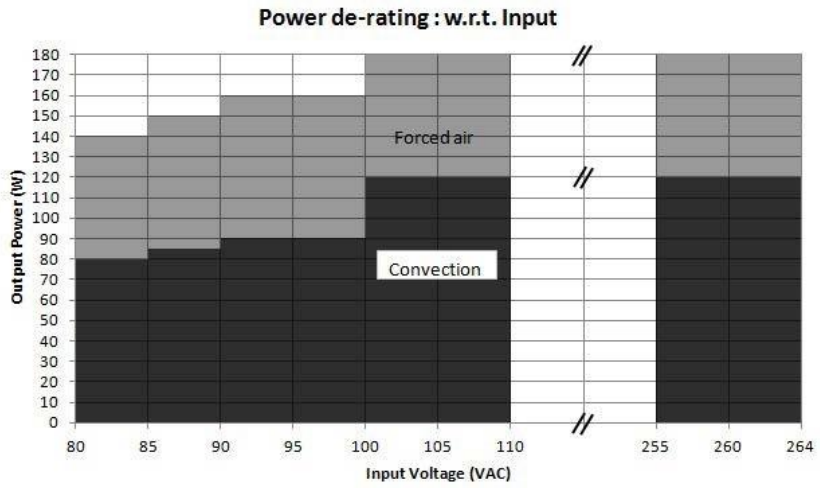
DERATING CURVES



Convection load: 120 W up to 40 °C
De-rate between 40-50 °C @ 0.625% per °C
De-rate above 50 °C @ 2.33% per °C

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



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

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