ABC275 Series

Ultra-Low Profile Open Frame Power Supplies

Not For New Design
Please refer to exact equivalent product series
ULP275

The ABC275 Series of ultra low profile open frame power supplies feature a wide universal AC input range of 80 – 264 VAC, offering output power 275 W with 13 CFM forced air cooling, or up to 160 W with convection cooling. The power supplies are available in 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.

RoHS Compliant

Key Features & Benefits

- 5 x 3 x 0.75 Inch Form Factor
- 275 Watts with Forced Air Cooling
- Efficiencies up to 92%
- -40 to 70°C Operating Temperature
- IEC / EN / UL 62368-1 Compliant
- 12 V / 0.5 A Fan Output
- Thermal Shut-Down Feature
- 3.37 million Hours, Telcordia -SR332-issue 3 MTBF
- No Load Power < 0.5 W

Applications

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

1. MODEL SELECTION

MODEL NUMBER [1]	OUTPUT CONNECTOR	VOLTAGE	MAX. LOAD			POWER
			CONVECTION 50°C (152 W)	CONVECTION 40°C (160 W)	13 CFM (275 W)	
ABC275-1T12L ABC275-1012L	Screw Terminal Header Molex Connector	12 V	12.5 A	13.33 A	22.92 A	275 W
ABC275-1T15L ABC275-1015L	Screw Terminal Header Molex Connector	15 V	10 A	10.66 A	18.33 A	275 W
ABC275-1T24L ABC275-1024L	Screw Terminal Header Molex Connector	24 V	6.25 A	6.67 A	11.46 A	275 W
ABC275-1T30L ABC275-1030L	Screw Terminal Header Molex Connector	30 V	5 A	5.33 A	9.17 A	275 W
ABC275-1T48L ABC275-1048L	Screw Terminal Header Molex Connector	48 V	3.12 A	3.33 A	5.73 A	275 W
ABC275-1T58L ABC275-1058L	Screw Terminal Header Molex Connector	58 V	2.58 A	2.76 A	4.74 A	275 W
COVER-275-XBC [2]	Metal Cover Kit (accessory)					

[1] Class II version available. Add suffix "-2" at the end of the Model Number. Class II means without input Earth pin.
[2] 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 72% for forced cooling and 69% for convection cooling at 80 VAC)	80 – 264 VAC / 390 VDC
Input Frequency		47-63 Hz
Input Current	115 VAC: 230 VAC:	2.6 A max. 1.3 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 (N/A for Class II Option) Touch current	300 µA < 100 µA
Switching Frequency	PFC PWM	70 – 130 kHz 50 – 80 kHz

3. OUTPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Output Voltage	Refer to Model selection table	From 12 V to 58 V
Output Power [3]	13 CFM (forced air cooling) Convection (natural cooling)	275 W up to 160 W
Efficiency	48 V, 58 V: 24 V, 30 V: 12 V, 15 V:	92% 90% 88%
Hold-up Time	At 275 W: At 160 W:	8 ms 16 ms
Power Factor	@ Full Load	> 0.95
Line Regulation [4]		± 0.5%
Load Regulation [4]		± 1%
Minimum Load		0.0 A
Transient Response	25% step load change, at 0.1 A/ µs slew rate, 50% duty cycle, 50 Hz = 4%	recovery time < 5 ms
Ripple [4, 5]	24, 30, 48 & 58 V outputs 12 V & 15 V outputs	1.0 % max. 2.0 % max.
Output Voltage Adjustment [6]		± 3%
Rise Time	Typical	55 ms
Set Point Tolerance [4]		± 1%
Over Current Protection		> 110%
Over Voltage Protection		110 to 140%
Short Circuit Protection	Hiccup mode	
Cooling	With 13 CFM forced air cooling (100 to 264 VAC) [7] With natural convection cooling (100 to 264 VAC) [8]	275 W Up to 160 W

[3] Combined output power of main output, fan supply shall not exceed max. power rating.
[4] Fan supply output voltage tolerance including set point accuracy, line and load regulation is ± 10% and ripple and noise is less than 10%.
[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] Adjustment potentiometer is located on the SMT side of the PCB
[7] Refer to Mechanical Drawing
[8] Refer to Derating Curve

4. EMC SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Conducted Emissions	EN 55032-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

5. SAFETY SPECIFICATIONS

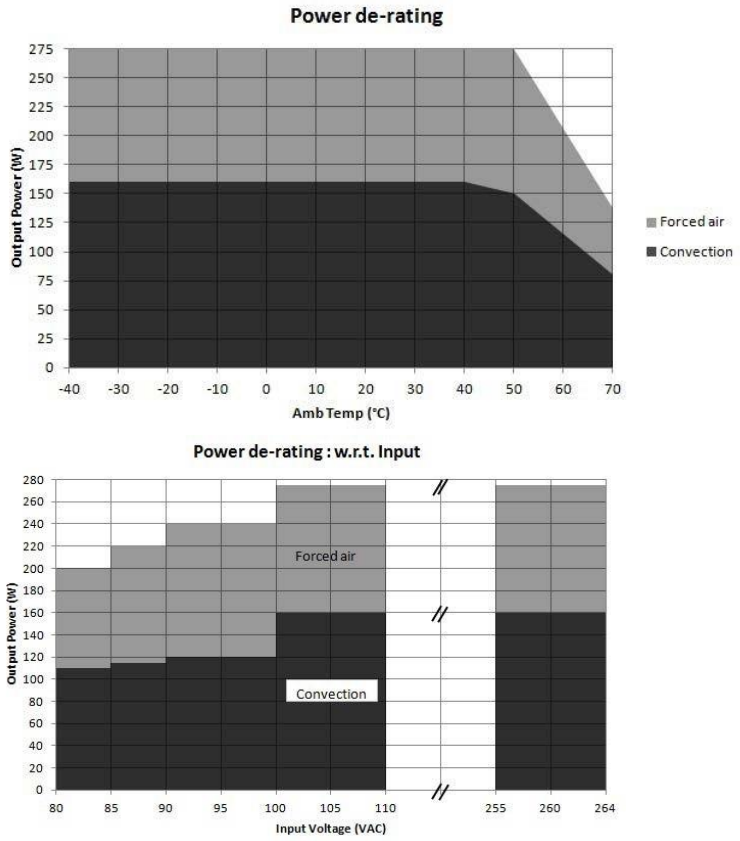
PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Isolation Voltage	Input to Output: (for ITE applications) Input to GND: (N/A for Class II Option)	4000 VDC 2500 VDC
Safety Standard(s)	EN / IEC / UL 62368-1(Ed .3)	
Agency Approvals	Nemko, UL, C-UL	
CE mark	Complies with LVD Directive	

6. ENVIRONMENTAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Operating Temperature [9]	-40 to 0°C startup guaranteed, with spec deviation	-40 to +70°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

[9] Output ripple can be more than 10% of the output voltage.

DERATING CURVES



Convection load: 160 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: 275 W up to 50°C
De-rate above 50 °C @ 2.5% per °C

Figure1. Derating Curves

7. CONNECTOR & PIN DESCRIPTION

CONNECTOR	PIN	DESCRIPTION / CONDITION	MANUFACTURER / PN
AC Input Connector	J1	Pin 1 AC Line Pin 2 Not Fitted Pin 3 AC Neutral	Molex: 26-60-4030 Mating: 09-50-3031; Pins: 08-50-0106
DC Output Connector	J2	Pin 1, 2, 3 V1 +VE Pin 4. 5. 6 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 FAN +VE Pin 2 FAN -VE	AMP: 640456-2 Mating: 640440-2

8. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION
Weight	approx. 200 g
Dimensions	127 x 76.2 x 19.05 mm (5 x 3 x 0.75 inches)

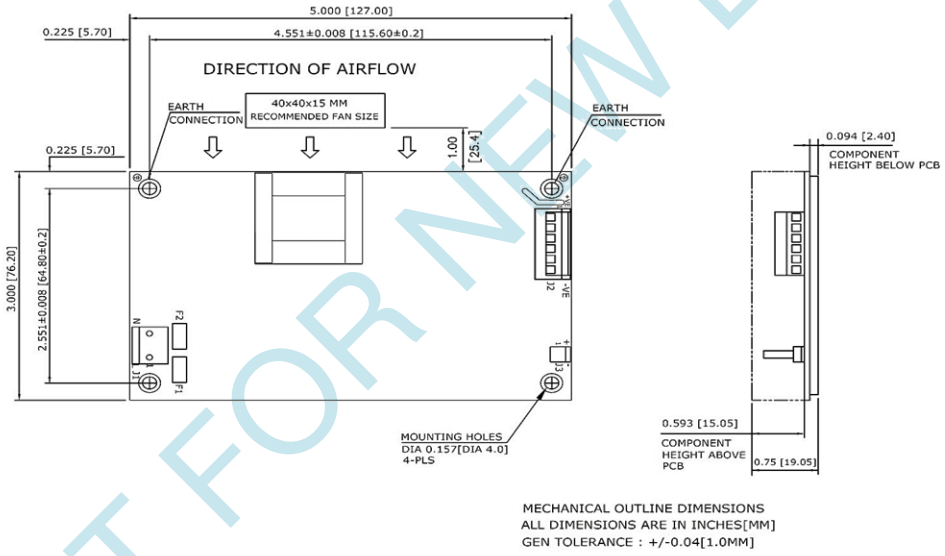


Figure 2. Mechanical Drawing – Option 1 (Output Connector – Screw Terminal)

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.

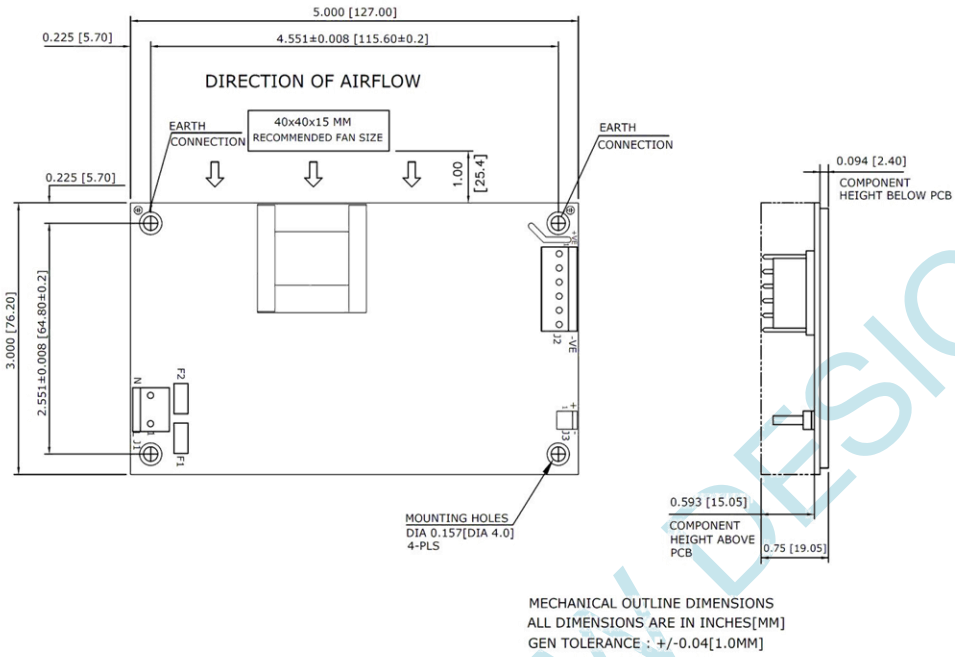


Figure 3. Mechanical Drawing – Option 2 (Output Connector – Header Molex)

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

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

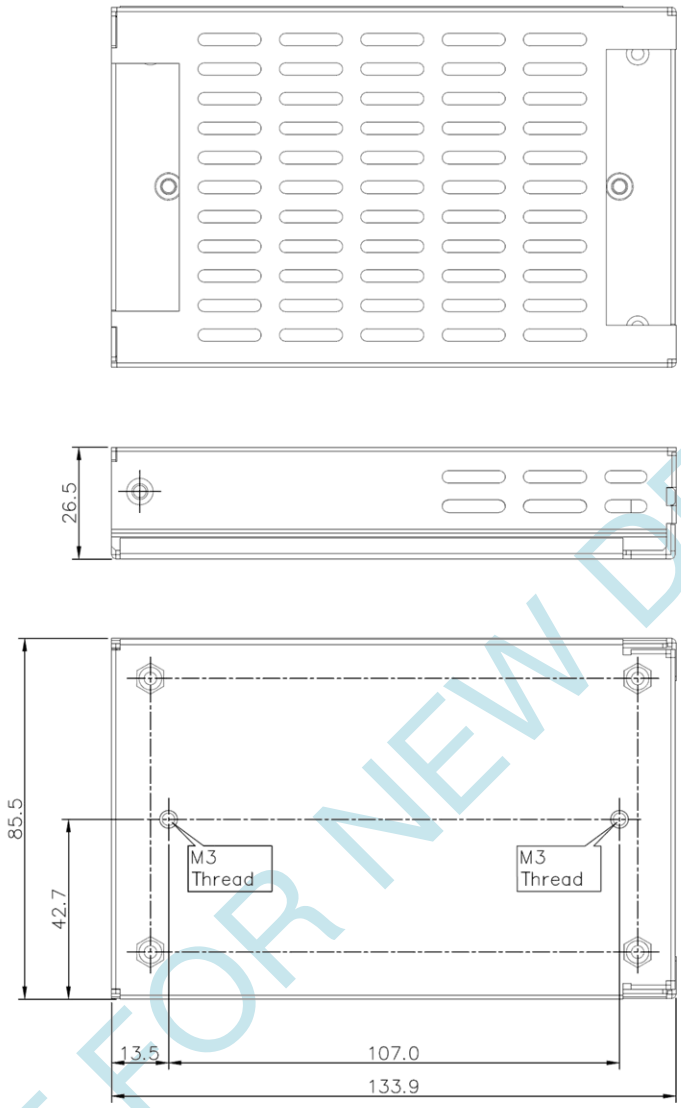


Figure 4. Mechanical Drawing – Cover Kit Option

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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