

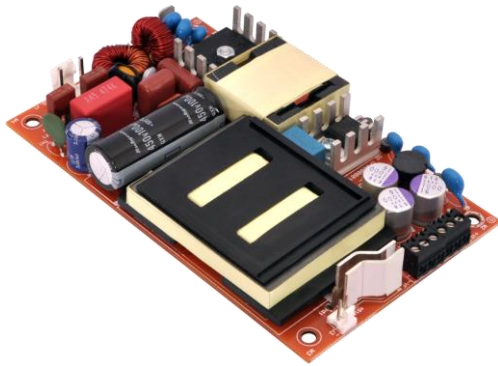
# ABC275 Series

## Ultra Low Profile Open Frame Power Supplies

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.



### Key Features & Benefits

- 5 x 3 x 0.75 Inches form factor
- 275 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 < 0.5 W

### Applications

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



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## 1. MODEL SELECTION

| MODEL NUMBER  | CONNECTOR                 | VOLTAGE | MAX. LOAD (CONVECTION)<br>152 W @ 50°C | MAX. LOAD (CONDUCTION)<br>160 W @ 40°C | MAX. LOAD (13 CFM) | MIN. LOAD | RIPPLE & NOISE <sup>1</sup> |
|---------------|---------------------------|---------|----------------------------------------|----------------------------------------|--------------------|-----------|-----------------------------|
| ABC275-1T12L  | Screw Terminal            | 12 V    | 12.5 A                                 | 13.33 A                                | 20.83 A            | 0.0 A     | 2%                          |
| ABC275-1012L  | Molex Connector           |         |                                        |                                        |                    |           |                             |
| ABC275-1T15L  | Screw Terminal            | 15 V    | 10 A                                   | 10.66 A                                | 16.67 A            | 0.0 A     | 2%                          |
| ABC275-1015L  | Molex Connector           |         |                                        |                                        |                    |           |                             |
| ABC275-1T24L  | Screw Terminal            | 24 V    | 6.25 A                                 | 6.67 A                                 | 10.41 A            | 0.0 A     | 1%                          |
| ABC275-1024L  | Molex Connector           |         |                                        |                                        |                    |           |                             |
| ABC275-1T30L  | Screw Terminal            | 30 V    | 5 A                                    | 5.33 A                                 | 8.33 A             | 0.0 A     | 1%                          |
| ABC275-1030L  | Molex Connector           |         |                                        |                                        |                    |           |                             |
| ABC275-1T48L  | Screw Terminal            | 48 V    | 3.12 A                                 | 3.33 A                                 | 5.2 A              | 0.0 A     | 1%                          |
| ABC275-1048L  | Molex Connector           |         |                                        |                                        |                    |           |                             |
| ABC275-1T58L  | Screw Terminal            | 58 V    | 2.58 A                                 | 2.76 A                                 | 4.31 A             | 0.0 A     | 1%                          |
| ABC275-1058L  | Molex Connector           |         |                                        |                                        |                    |           |                             |
| COVER-275-XBC | metal cover kit accessory |         |                                        |                                        |                    |           |                             |

<sup>1</sup> Ripple is peak to peak with 20 MHz bandwidth and 10  $\mu$ F (Tantalum capacitor) in parallel with a 0.1  $\mu$ F capacitor at rated line voltage and load ranges.

## 2. INPUT SPECIFICATIONS

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

| PARAMETER           | DESCRIPTION / CONDITION                                                                                       | SPECIFICATION                 |
|---------------------|---------------------------------------------------------------------------------------------------------------|-------------------------------|
| Input Voltage       | Universal<br>(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:<br>230 VAC:                                                                                          | 2.6 A max.<br>1.3 A max.      |
| No Load Power       | Typical for ABC275-1XXX<br>Typical for ABC275-1XXX-PGPF                                                       | < 0.5 W<br>< 0.85 W           |
| Inrush Current      | 115 VAC:<br>230 VAC:<br>264 VAC:                                                                              | 25 A<br>45 A<br>75 A          |
| Leakage Current     | Typical (N.A. For Class II Option - without input Earth pin)<br>Touch current                                 | 300 $\mu$ A<br>< 100 $\mu$ A  |
| Power Factor        | At full load                                                                                                  | > 0.95                        |
| Switching Frequency | PFC<br>PWM                                                                                                    | 70 to 130 kHz<br>50 to 80 kHz |

### 3. OUTPUT SPECIFICATIONS

| PARAMETER                                | DESCRIPTION / CONDITION                                                             | SPECIFICATION        |
|------------------------------------------|-------------------------------------------------------------------------------------|----------------------|
| Output Power <sup>2</sup>                | With 13 CFM forced air cooling<br>With natural convection cooling at 100 to 264 VAC | 275 W<br>up to 160 W |
| Efficiency (typical @ 230 VAC full load) | 48 V, 58 V:<br>24 V, 30 V:<br>12 V, 15 V:                                           | 92%<br>90%<br>88%    |
| Hold-up Time                             | At 275 W:<br>At 160 W:                                                              | 8 ms<br>16 ms        |
| Line Regulation                          |                                                                                     | +/-0.5%              |
| Load Regulation                          |                                                                                     | +/-1%                |
| Transient Response                       | 25% step load change, at 0.1 A/uS slew rate, 50% duty cycle, 50 Hz = 4%             | recovery time < 5 ms |
| Voltage Adjustment                       |                                                                                     | +/-3%                |
| Rise Time                                | Typical                                                                             | 55 ms                |
| Set Point Tolerance <sup>3</sup>         |                                                                                     | +/-1%                |
| Over Current Protection                  |                                                                                     | > 110%               |
| Over Voltage Protection                  |                                                                                     | 110 to 140%          |
| Short Circuit Protection                 | Hiccup mode                                                                         |                      |

<sup>2</sup> Combined output power of main output, fan supply shall not exceed max. Power rating.

<sup>3</sup> Fan supply output voltage tolerance including set point accuracy, line and load regulation is +/-10% and Ripple and noise is less than 10%.

### 4. ENVIRONMENTAL SPECIFICATIONS

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

### 5. EMC SPECIFICATIONS

| PARAMETER               | DESCRIPTION / CONDITION                                                                             | SPECIFICATION      |
|-------------------------|-----------------------------------------------------------------------------------------------------|--------------------|
| Conducted Emissions     | EN55022-B, CISPR22-B, FCC PART15 – B                                                                |                    |
| Static Discharge        | EN61000-4-2:                                                                                        | Level-3            |
| RF Field Susceptibility | EN61000-4-3:                                                                                        | Level-3            |
| Fast Transients/Bursts  | EN61000-4-4:                                                                                        | Level-3            |
| Radiated Emissions      | Radiated:<br>Radiated with external core:<br>(King core K5B RC 25x12x15-M in input cable (5 turns)) | Level A<br>Level B |
| Surge Susceptibility    | EN61000-4-5:                                                                                        | Level-3            |
| Harmonic Current        | EN61000-3-2:                                                                                        | Class D            |

## 6. SAFETY SPECIFICATIONS

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

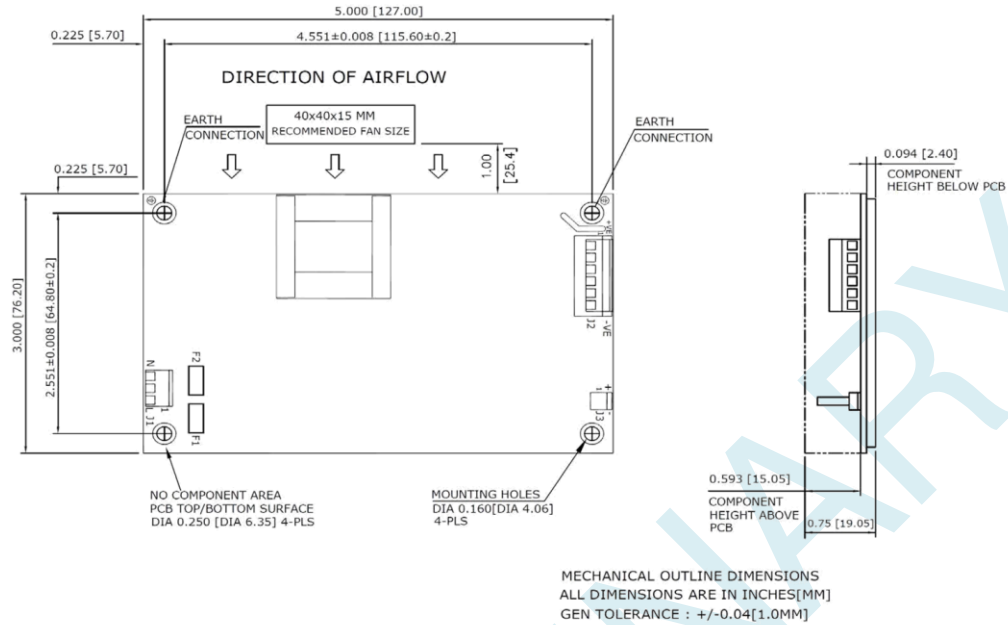
## 7. CONNECTOR & PIN DESCRIPTION

| CONNECTOR                  | PIN | DESCRIPTION / CONDITION                               | MANUFACTURER / PN                                                                                                                                     |
|----------------------------|-----|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| AC Input Connector         | J1  | Pin 1 AC Line<br>Pin 2 Not Fitted<br>Pin 3 AC Neutral | Molex: 26-60-4030<br>Mating: 09-50-3031; Pins: 08-50-0106                                                                                             |
| DC Output Connector        | J2  | Pin 1, 2, 3 V1 +VE<br>Pin 4, 5, 6 V1 -VE              | Option 1 (Screw Terminal): Molex: 39357 Series or equivalent<br>Option 2 (Molex Connector): Molex: 26-60-4060<br>Mating: 09-50-3061; Pins: 08-50-0106 |
| Aux (Fan) Output           | J3  | Pin 1 FAN +VE<br>Pin 2 FAN -VE                        | AMP: 640456-2<br>Mating: 640440-2                                                                                                                     |
| Signal Output <sup>4</sup> | J4  | Pin 1 Vs<br>Pin 2 PGPF<br>Pin 3 GDN                   | AMP :640456-3<br>Mating: 640440-3                                                                                                                     |

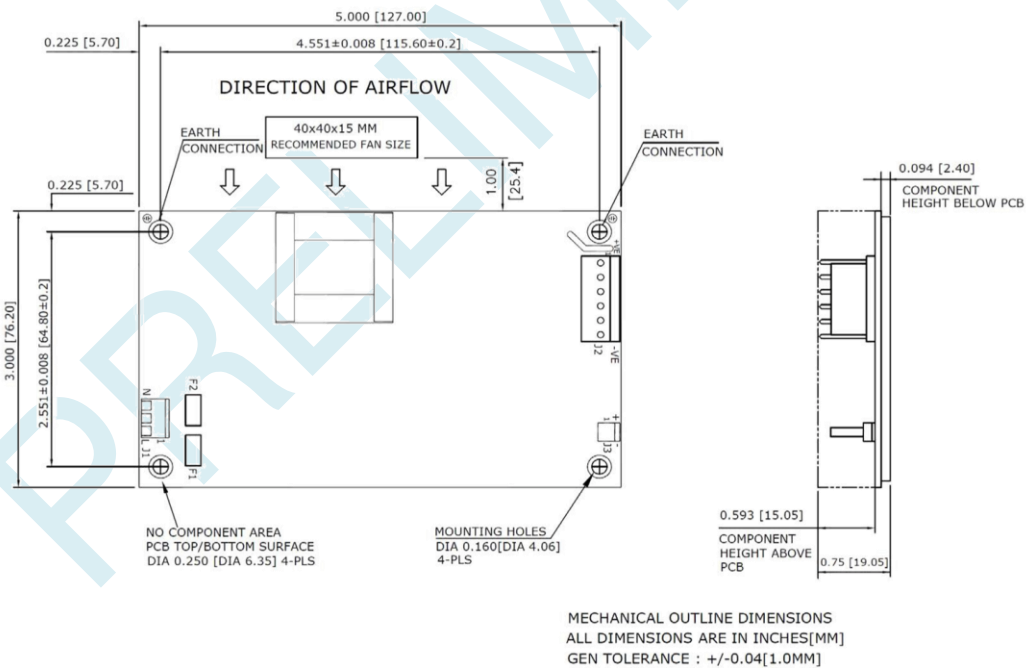
<sup>4</sup> For PGPF Signal Output Connector option please contact factory.

## 8. MECHANICAL SPECIFICATIONS

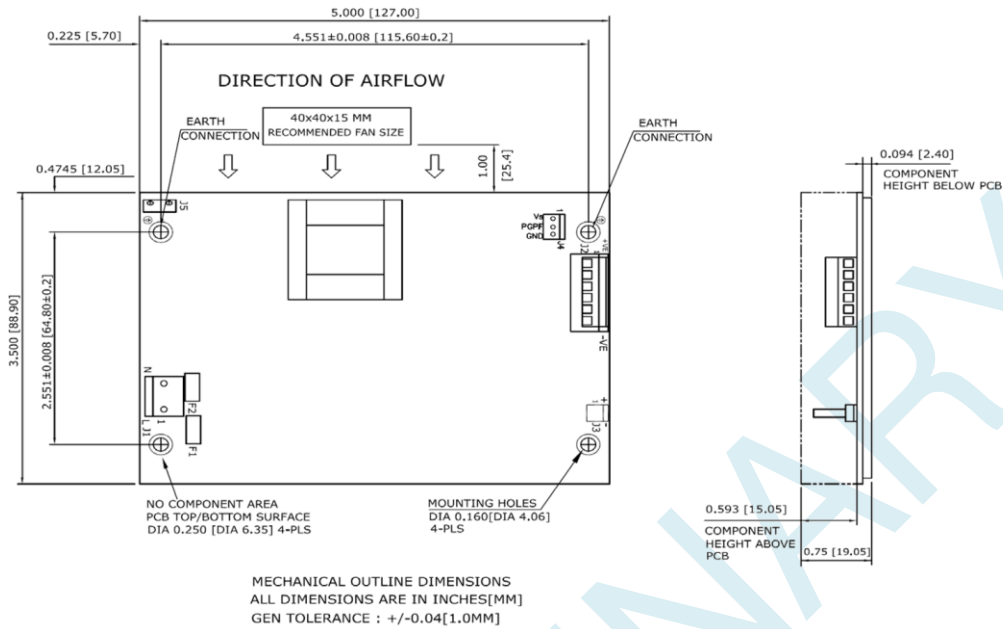
| PARAMETER  | DESCRIPTION / CONDITION                                                                                                                     |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Weight     | approx. 200 g                                                                                                                               |
| Dimensions | 127 x 76.2 x 19.05 mm (5 x 3 x 0.75 inches)                                                                                                 |
| Cooling    | 275 W with 13 CFM forced air cooling (refer to Mechanical Drawing)<br>Up to 160 W with natural convection cooling (refer to Derating Curve) |



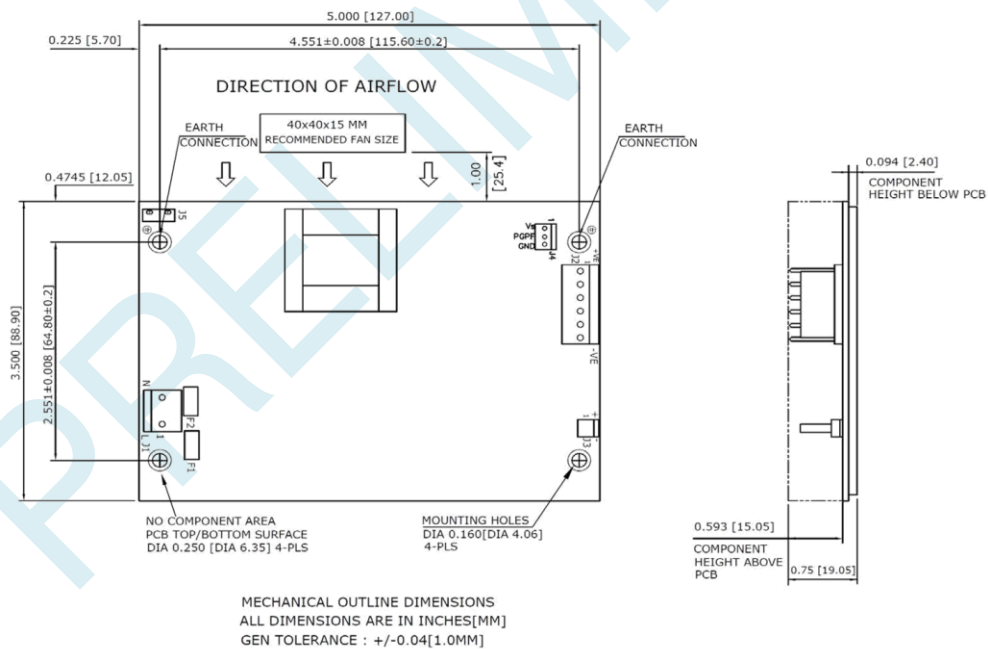
*Mechanical Drawing – Option 1 without PGPF*



*Mechanical Drawing – Option 2 without PGPF*

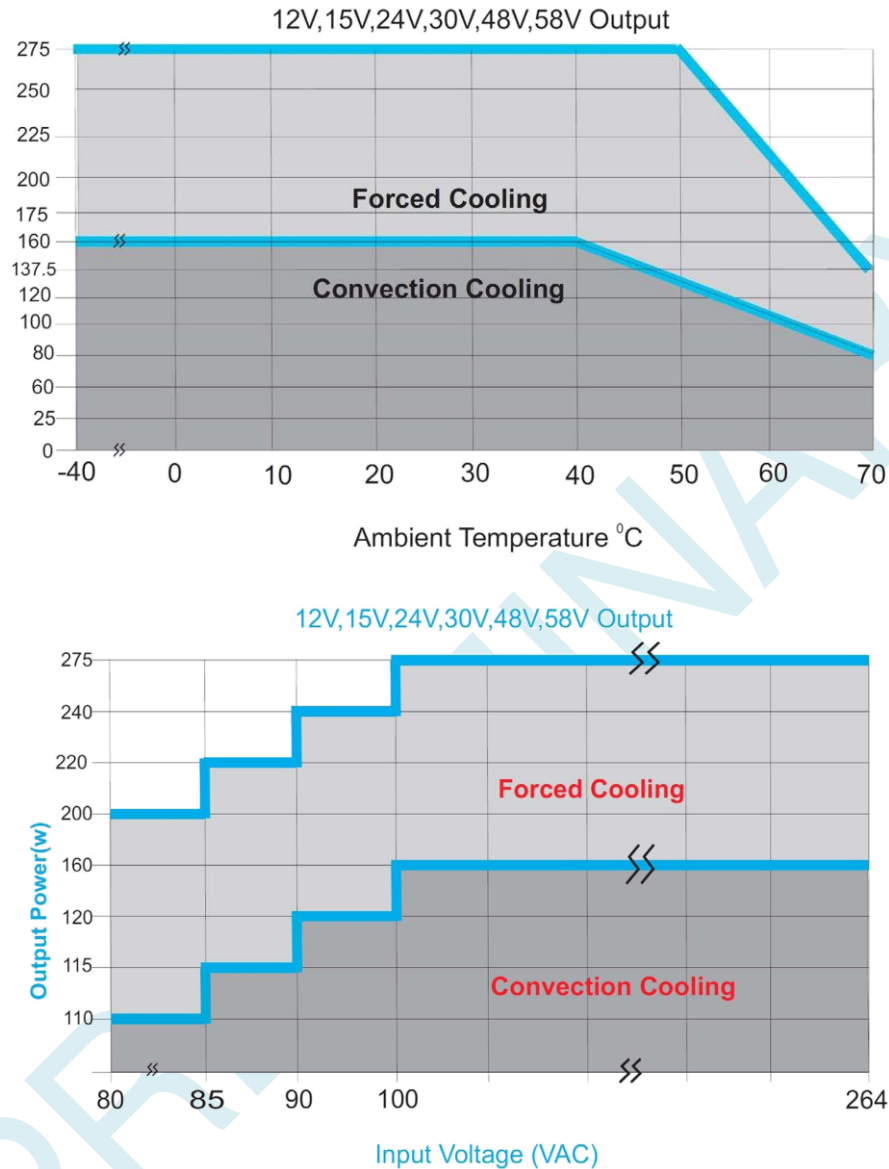


Mechanical Drawing – Option 1 with PGPF



Mechanical Drawing – Option 2 with PGPF

## DERATING CURVES



For more information on these products consult: [tech.support@psbel.com](mailto:tech.support@psbel.com)

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