



ABC41 Series

Ultra Low Profile Open Frame Power Supplies

The ABC41 Series of ultra low open frame power supplies feature a wide universal AC input range of 85 V – 264 VAC, offering output power 40 W with natural convection cooling. They are available in a variety of isolated single output voltages. The ABC41 ultra low profile series is also available in a PCB mount format, facilitating simple embedded integration onto user's main PCB assembly.

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

- 3 x 2 x 0.75 Inches Form factor
- PCB Mount option available
- 40 Watts Convection
- Approved to EN/IEC 60950
- Efficiencies 85% Typical
- -40 to 70 degree operating temperature
- 2 million hours, Telcordia -SR332-issue 3 MTBF
- Standby Power < 0.3 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 ¹ | CONNECTOR | VOLTAGE | MAX. LOAD | MIN. LOAD | RIPPLE & NOISE ² |
|---------------------------|---------------------------|---------|-----------|-----------|-----------------------------|
| ABC41-1T05L | Screw Terminal | | | | |
| ABC41-1005L | Header | 5 V | 5 A | 0.0 A | 1.5% |
| ABC41-1005P | PCB Mount | | | | |
| ABC41-1T12L | Screw Terminal | | | | |
| ABC41-1012L | Header | 12 V | 3.33 A | 0.0 A | 1% |
| ABC41-1012P | PCB Mount | | | | |
| ABC41-1T15L | Screw Terminal | | | | |
| ABC41-1015L | Header | 15 V | 2.67 A | 0.0 A | 1% |
| ABC41-1015P | PCB Mount | | | | |
| ABC41-1T24L | Screw Terminal | | | | |
| ABC41-1024L | Header | 24 V | 1.67 A | 0.0 A | 1% |
| ABC41-1024P | PCB Mount | | | | |
| ABC41-1T30L | Screw Terminal | | | | |
| ABC41-1030L | Header | 30 V | 1.33 A | 0.0 A | 1% |
| ABC41-1030P | PCB Mount | | | | |
| ABC41-1T48L | Screw Terminal | | | | |
| ABC41-1048L | Header | 48 V | 0.83 A | 0.0 A | 1% |
| ABC41-1048P | PCB Mount | | | | |
| ABC41-1T58L | Screw Terminal | | | | |
| ABC41-1058L | Header | 58 V | 0.69 A | 0.0 A | 1% |
| ABC41-1058P | PCB Mount | | | | |
| COVER-41-XBC ³ | metal cover kit accessory | | | | |

¹ For Class II Option (without input Earth pin) add suffix: -2 (e.g.: ABC41-1012L-2).

² Ripple is peak to peak with 20 MHz bandwidth and 10 μ F (Tantalum capacitor) in parallel with a 0.1 μ F capacitor at rated line voltage and load ranges. Output ripple can be more than 10% of the output voltage.

³ When used in Cover Kit, de-rate output power to 70 % under all operating conditions. Cover Kit is not suited for PCB mount version.

2. INPUT SPECIFICATIONS

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

| PARAMETER | DESCRIPTION / CONDITION | SPECIFICATION |
|---------------------|---|--------------------------|
| Input Voltage | Universal | 85 - 264 VAC / 390 VDC |
| Input Frequency | | 47 - 63 Hz |
| Input Current | 115 VAC: 230 VAC: | 0.8 A max. 0.4 A max. |
| No Load Power | Typical | < 0.3 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) | 300 μ A |
| Switching Frequency | Typical | 65 kHz |

3. OUTPUT SPECIFICATIONS

| PARAMETER | DESCRIPTION / CONDITION | SPECIFICATION |
|--------------------------|---|-----------------------|
| Output Power | Convection cooling | 40 W |
| Efficiency | Typical | 85% |
| Hold-up Time | 230 VAC: | 6 ms |
| Line Regulation | | +/-0.5% |
| Load Regulation | | +/-1% |
| Transient Response | 25% step load change, at 0.1 A/ μ s slew rate, 50% duty cycle, 50 Hz = 4% | recovery time < 5 ms |
| Rise Time | Typical | 50 ms |
| Set Point Tolerance | | 2% (3% for 5 V model) |
| Over Current Protection | | > 110% |
| Over Voltage Protection | | 110 to 140% |
| Short Circuit Protection | Hiccup mode | |

4. ENVIRONMENTAL SPECIFICATIONS

| PARAMETER | DESCRIPTION / CONDITION | SPECIFICATION |
|-----------------------|--|----------------------------|
| Operating Temperature | Startup is guaranteed with spec. deviation, see Fig. 1 | -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 | 2 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: | 4242 VDC |
| 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 | |

7. CONNECTOR & PIN DESCRIPTION

| CONNECTOR | PIN | DESCRIPTION / CONDITION | MANUFACTURER / PN |
|---------------------|----------------------------------|---|---|
| AC Input Connector | J1 Screw Terminal / Header | Pin 1 AC Line Pin 2 Not Fitted Pin 3 AC Neutral | Tyco: 640445-3 Mating: 647402-3; Pins: 3-647409-1 (Header) |
| DC Output Connector | J2 Screw Terminal / Header | Pin 1, 2 V1 +VE Pin 3, 4 V1 -VE | Tyco: 640445-4 Mating: 647402-4; Pins: 3-647409-1 |

8. MECHANICAL SPECIFICATIONS

| PARAMETER | DESCRIPTION / CONDITION |
|------------|--|
| Weight | approx. 100 g |
| Dimensions | 76.2 x 50.8 x 19.05 mm (3 x 2 x 0.75 inches) |



Figure 1. Derating Curve for all Outputs

De-rate linearly from 100% at 50°C to 50% at 70°C



Figure 2. Mechanical Drawing – Option with Header



Figure 3. Mechanical Drawing – Option with Screw Terminal



Figure 4. Mechanical Drawing – PCB Mount Option

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.

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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- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
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JONHON

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