



# 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



**bel** POWER SOLUTIONS & PROTECTION

a bel group

[belfuse.com/power-solutions](http://belfuse.com/power-solutions)

## 1. MODEL SELECTION

| MODEL NUMBER <sup>1</sup> | CONNECTOR                 | VOLTAGE | MAX. LOAD | MIN. LOAD | RIPPLE & NOISE <sup>2</sup> |
|---------------------------|---------------------------|---------|-----------|-----------|-----------------------------|
| 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 <sup>3</sup> | metal cover kit accessory |         |           |           |                             |

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

<sup>2</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. Output ripple can be more than 10% of the output voltage.

<sup>3</sup> 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:<br>230 VAC:  | 0.8 A max.<br>0.4 A max. |
| No Load Power       | Typical   | < 0.3 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) | 300 $\mu$ 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/ $\mu$ 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<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                               | 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;<br>with external core (King core K5B RC 25x12x15-M in input cable) | Pass<br>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:<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<br>Screw Terminal /<br>Header | Pin 1 AC Line<br>Pin 2 Not Fitted<br>Pin 3 AC Neutral | Tyco: 640445-3<br>Mating: 647402-3; Pins: 3-647409-1 (Header) |
| DC Output Connector | J2<br>Screw Terminal /<br>Header | Pin 1, 2 V1 +VE<br>Pin 3, 4 V1 -VE                    | Tyco: 640445-4<br>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

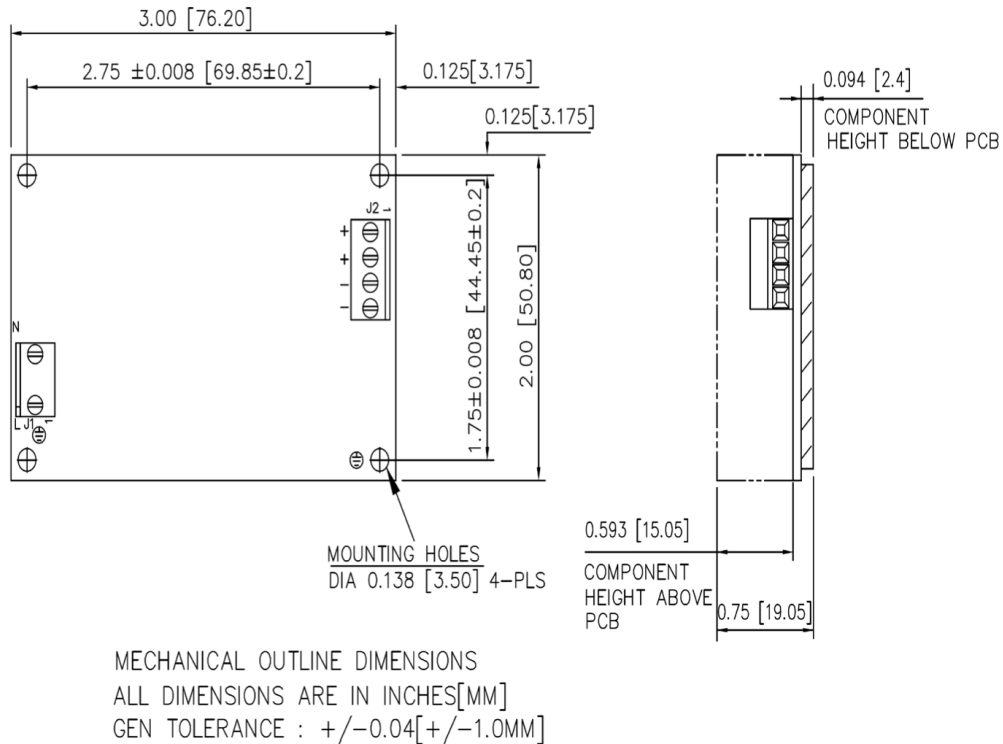


Figure 3. Mechanical Drawing – Option with Screw Terminal



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](mailto: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.



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.