

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!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

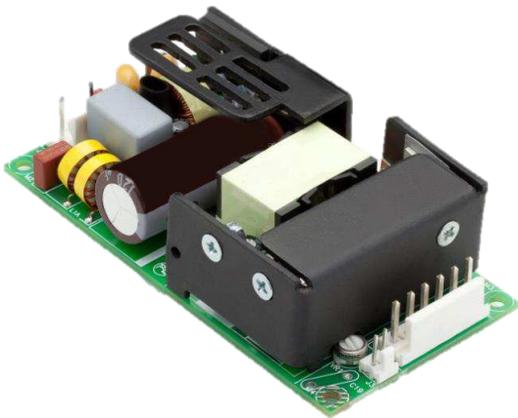
# ABC40 Series

## AC-DC Open Frame Power Supplies

The ABC40 Series of open-frame power supplies, with its wide universal 90-264 VAC input range and high power density, is available at 40 W of output power and a variety of single and multiple 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 telecom, datacom, industrial equipment and other applications.



### Key Features & Benefits

- 4 x 2 x 1.2 Inch Form Factor
- Single to Triple Outputs
- Ultra High Efficiency > 85%
- Low conducted and radiated noise
- No Load Power < 0.3 W
- IEC Protection Class Options:
  - Class I: Earth pin J4 (no suffix)
  - Class II: No Earth pin (-2 suffix)
- RoHS Compliant
- Cover Kit Accessory Available

### Applications

- Lighting
- Industrial Processing
- Applied Computing
- Instrumentation
- Automation Controls
- Robotics
- Wireless Communication
- Test and Measurement



**bel** POWER  
SOLUTIONS &  
PROTECTION

a bel group

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

## 1. MODEL SELECTION

MODEL <sup>1</sup>	OUTPUT VOLTAGE (VDC)	MAX LOAD (A) <sup>2</sup>	MINIMUM LOAD (A) <sup>3</sup>	RIPPLE & NOISE <sup>4</sup>
ABC40-1005G	5.1	8.0	0.0	1%
ABC40-1012G	12	3.5	0.0	1%
ABC40-1015G	15	2.7	0.0	1%
ABC40-1024G	24	1.7	0.0	1%
ABC40-1048G	48	0.83	0.0	1%
ABC40-3000G	5.2	6.0	0.5	1%
	12.5	2.0	0.1	1%
	-12.8	0.5	0.0	1%
ABC40-3001G	5.2	6.0	0.5	1%
	23.8	1.0	0.1	1%
	-12.8	0.5	0.0	1%
ABC40-3002G	5.2	6.0	0.5	1%
	14.6	1.5	0.1	1%
	-14.8	0.5	0.0	1%
ABC40-3003G <sup>5</sup>	3.3	6.0	1.0	1.5%
	5.2	3.0	0.1	1%
	-12.8	0.5	0.0	1%
Cover-40-XCB	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	90 - 264 VAC
Input Frequency <sup>6</sup>		47 to 400 Hz
Input Current	120 VAC: 230 VAC:	0.85 A max. 0.45 A max.
No Load Power	Single output models Multi output models	< 0.3 W < 0.5 W
Inrush Current	120 VAC: 230 VAC:	30 A max. 60 A max.
Leakage Current	120 VAC: 230 VAC:	< 500 µA < 1000 µA
Switching Frequency	Typical	67 Hz

<sup>1</sup> For Class II add suffix -2 (e.g.: ABC40-1012G-2).

<sup>2</sup> Maximum current per output channel. Do not exceed total output power rating.

<sup>3</sup> Minimum load specified to meet cross regulation.

<sup>4</sup> 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.

<sup>5</sup> For ABC40-3003G efficiency is 75% typical.

<sup>6</sup> Safety Approved: 47 to 63 Hz

### 3. OUTPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Efficiency	Typical	85%
Hold Up Time	@ 120 VAC typical	>10 ms
Output Power	Derate output power linearly to 80% from 90 VAC to 80 VAC input.	40 W
Line Regulation		+/-0.3%
Load Regulation	V1: V2 & V3:	+/-0.5% +/-5%
Transient Response	50% to 100% load change, 50/60 Hz, 50% duty cycle, 0.1 A/ $\mu$ s	< 10%, recovery time < 5 ms
Rise Time		< 100 ms
Set Point Tolerance	V1: V2 & V3:	$\pm$ 3% $\pm$ 5%
Output Voltage Adjustment	V1	$\pm$ 10%
Over Current Protection	Typical above rating	130%
Over Voltage Protection	Typical for V1 only	130%
Short Circuit Protection	Short term, autorecovery	

### 4. ENVIRONMENTAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Operating Temperature	Refer to derating curve, Fig. 1 Start-up is guaranteed	-20 to 70°C -20 to 0°C
Storage Temperature		-40 to +85°C
Relative Humidity	Non Condensing	95%
Altitude	Operating: Non-Operating:	10,000 ft. 40,000 ft.
Reliability	MTBF according to Telcordia -SR332-Issue 3	1.87 million hours
Cooling	Convection	



Figure 1. Derating Curve

De-rate linearly from 100% at 50°C to 75% at 70°C



Asia-Pacific  
+86 755 298 85888

Europe, Middle East  
+353 61 225 977

North America  
+1 408 785 5200

## 5. EMC SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Conducted Emissions	EN55032-B, CISPR22-B, FCC PART15-B	Pass
Radiated Emissions	EN 55032 B	Pass
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	Min. 4242 VDC
Safety Standards	Approved to the latest edition of the following standards: CSA/UL EN60950-1, EN EN60950-1 and IEC EN60950-1. 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 Neutral Pin 2 AC Line	Molex: 26-60-4030 or equivalent Mating: 09-50-3031; Pins: 08-50-0106
DC Output Connector	J2	Pin 1,2 V1 Pin 3,4 RTN Pin 5 V3 Pin 6 V2	Tyco: 640445-6 or equivalent Mating: 647402-6; Pins: 3-647409-1
Signal Connector	J3	Pin 1 +V1 Sense Pin 2 -V1 Sense	Molex: 22-23-2021 or equivalent Mating: 22-01-2021
Earth	J4		Molex: 19705-4301 Mating: 190030001

## 8. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION
Weight	150 g (0.33 lbs.)
Dimensions	101.6 x 50.8 x 30.48 mm (4 x 2 x 1.2 inch)

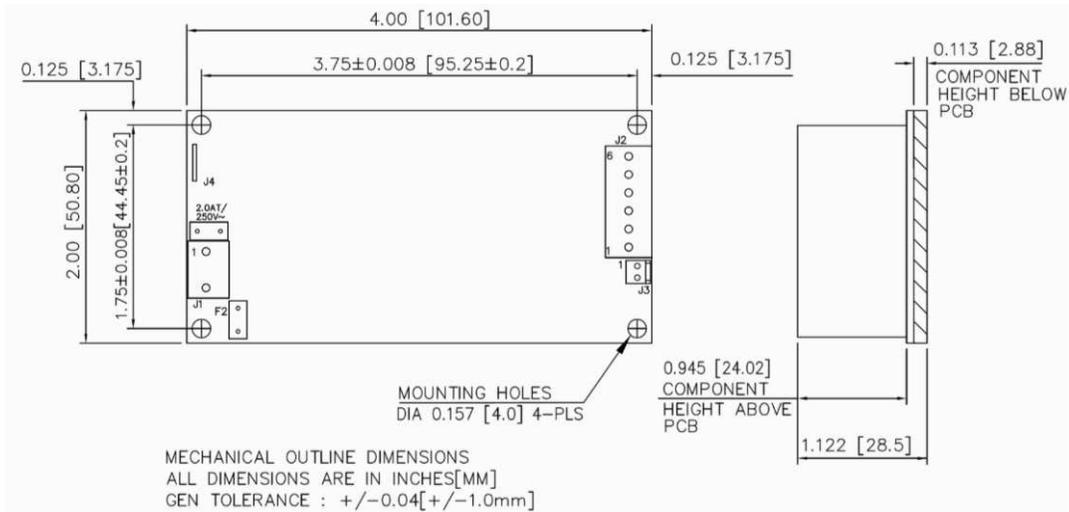


Figure 2. Mechanical Drawing ABC40-1xxxG

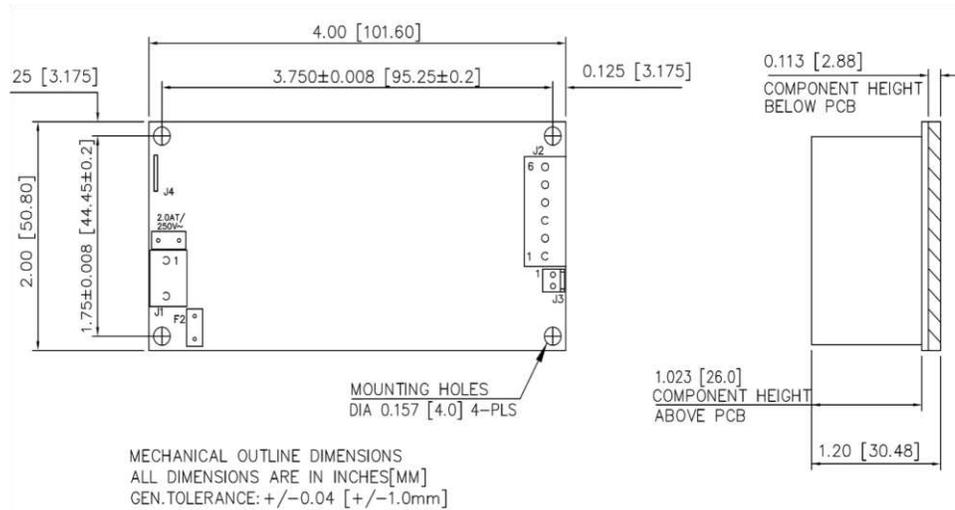


Figure 3. Mechanical Drawing ABC40-3xxxG

**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.