

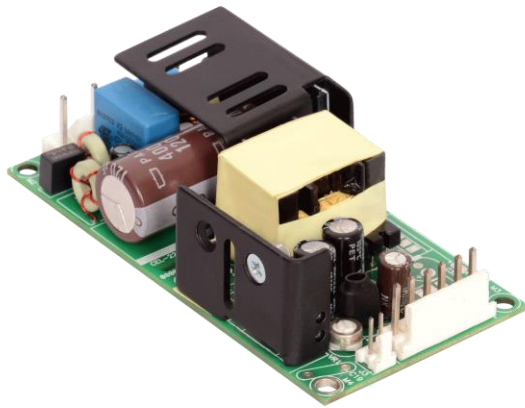
# ABC60 Series

## AC-DC Open Frame Power Supplies

The ABC60 Series of AC-DC open-frame power supplies, with its wide universal 90-264 VAC input range and high power density, is available at 60 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 (101.6 x 50.8 x 30.48 mm)
- 50 - 65 W Convection Cooled
- Single to Triple Outputs
- High Efficiency > 85%
- No Load Power < 0.3 W
- IEC Protection Class Options:
  - Class I: Earth pin J4 (no suffix)
  - Class II: No Earth pin (-2 suffix)
- Conducted EMI EN 55022-B, FCC Part 15 Level B
- IEC / EN / UL 62368-1 Compliant
- RoHS Compliant
- Cover Kit Accessory Available

### 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 <sup>1</sup>	VOLTAGE	MAX LOAD <sup>2</sup>	MIN LOAD <sup>3</sup>	RIPPLE <sup>4</sup>	POWER
ABC60-1005G	5.0 V	10.0 A	0.0 A	1.5%	50 W
ABC60-1012G	12 V	5.42 A	0.0 A	1%	65 W
ABC60-1015G	15 V	4.33 A	0.0 A	1%	65 W
ABC60-1024G	24 V	2.71 A	0.0 A	1%	65 W
ABC60-1048G	48 V	1.35 A	0.0 A	1%	65 W
ABC60-3000G	V <sub>1</sub> = 5.2 V	8.0 A	0.5 A	1.5%	60 W
	V <sub>2</sub> = 12.5 V	3.0 A	0.1 A	1%	
	V <sub>3</sub> = -12.8 V	0.5 A	0.0 A	1%	
ABC60-3001G	V <sub>1</sub> = 5.2 V	8.0 A	0.5 A	1.5%	60 W
	V <sub>2</sub> = 24 V	1.5 A	0.1 A	1%	
	V <sub>3</sub> = -12.8 V	0.5 A	0.0 A	1%	
ABC60-3002G	V <sub>1</sub> = 5.2 V	8.0 A	0.5 A	1.5%	60 W
	V <sub>2</sub> = 15 V	2.5 A	0.1 A	1%	
	V <sub>3</sub> = -15 V	0.5 A	0.0 A	1%	
ABC60-3003G	V <sub>1</sub> = 3.3 V	6.0 A	1.0 A	1.5%	45 W
	V <sub>2</sub> = 5 V	3.0 A	0.1 A	1%	
	V <sub>3</sub> = -12.8 V	0.5 A	0.0 A	1%	
COVER-60-XBC <sup>5</sup>	Metal cover kit accessory				

<sup>1</sup> Class II version available. Add suffix "-2" at the end of the Model Number

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

<sup>3</sup> Min Load specified to meet cross regulation.

<sup>4</sup> Ripple is peak to peak with 20 MHz bandwidth and 10  $\mu$ F (Electrolytic capacitor) in parallel with a 0.1  $\mu$ F capacitor at rated line voltage and load ranges.

<sup>5</sup> 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	90 - 264 VAC
Input Frequency <sup>6</sup>		47 to 400 Hz
Input Current	120 VAC:	1.5 A max.
	230 VAC:	0.75 A max.
No Load Power	Single output models	< 0.3 W
	Multi output models	< 0.5 W
Inrush Current	120 VAC:	30 A max.
	230 VAC:	60 A max.
Leakage Current	120 VAC:	< 500 $\mu$ A
	230 VAC:	< 1000 $\mu$ A
Switching Frequency	Typical	67 kHz

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

### 3. OUTPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Efficiency <sup>7</sup>	Typical	85%
Hold Up Time	@ 120 VAC typical	>10 ms
Output Power <sup>8</sup>		50 - 65 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/μs	< 10%, recovery time < 5 ms
Rise Time		< 100 ms
Set Point Tolerance	V1: V2 & V3:	± 3% ± 5%
Output Voltage Adjustment	V1	± 10%
Over Current Protection	Typical above rating	130%
Over Voltage Protection	Typical for V1 only	130%
Short Circuit Protection	Short term, autorecovery	
Cooling	Convection	

<sup>7</sup> For ABC60-3003G efficiency is 75% typical

<sup>8</sup> Derate output power linearly to 80% from 90 VAC to 80 VAC input.  
Single output models deliver 65 W, except for ABC60-1005G (50 W).  
Triple output models deliver 60 W, except for ABC60-3003G (45 W).

### 4. ENVIRONMENTAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Operating Temperature	Refer to derating curve, Fig. 1 -20 to 0°C start-up is guaranteed	-20 to 70°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	

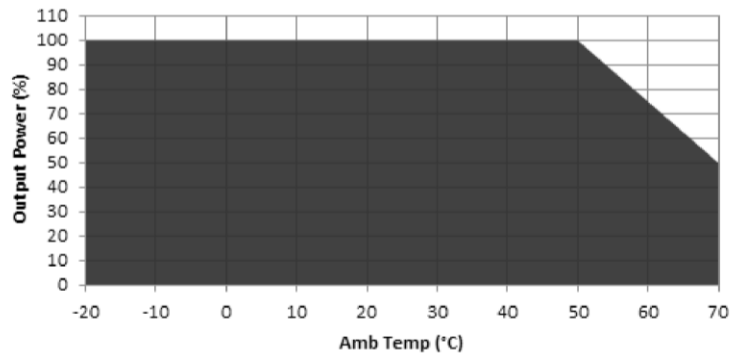


Figure 1. Derating Curve

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

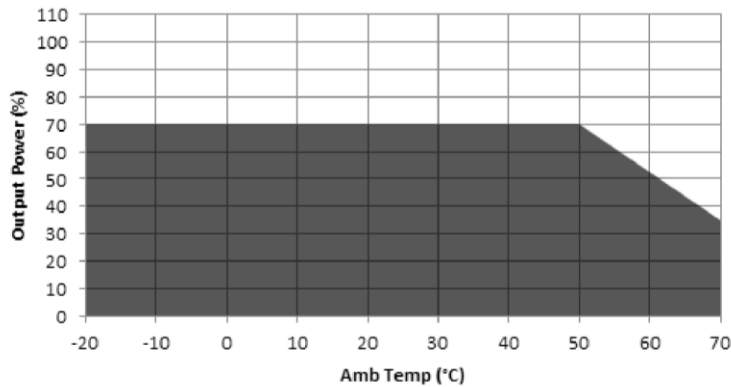


Figure 2. Derating Curve with Cover Kit

## 5. EMC SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Conducted Emissions	EN 55032-B, CISPR22-B, FCC PART15-B	Pass
Radiated Emissions	EN 55032 B	Pass
Input Current Harmonics	EN 61000-3-2	Class A
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:	4000 VAC/VDC
Safety Standards	IEC 60950-1(ed.2), EN 60950-1, UL 60950-1 (2nd Edition), CSA C22.2 No. 60950-1 (2nd Edition), UL 62368-1, 2nd Ed, 2014-12-01 CAN/CSA C22.2 No. 62368-1-14, 2nd Ed, Class 1 SELV IEC 62368-1:2014, EN 62368-1:2014; A11	
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 Pin 2 AC Neutral	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 (Spade Connector)	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)



Asia-Pacific  
+86 755 298 85888

Europe, Middle East  
+353 61 225 977

North America  
+1 408 785 5200

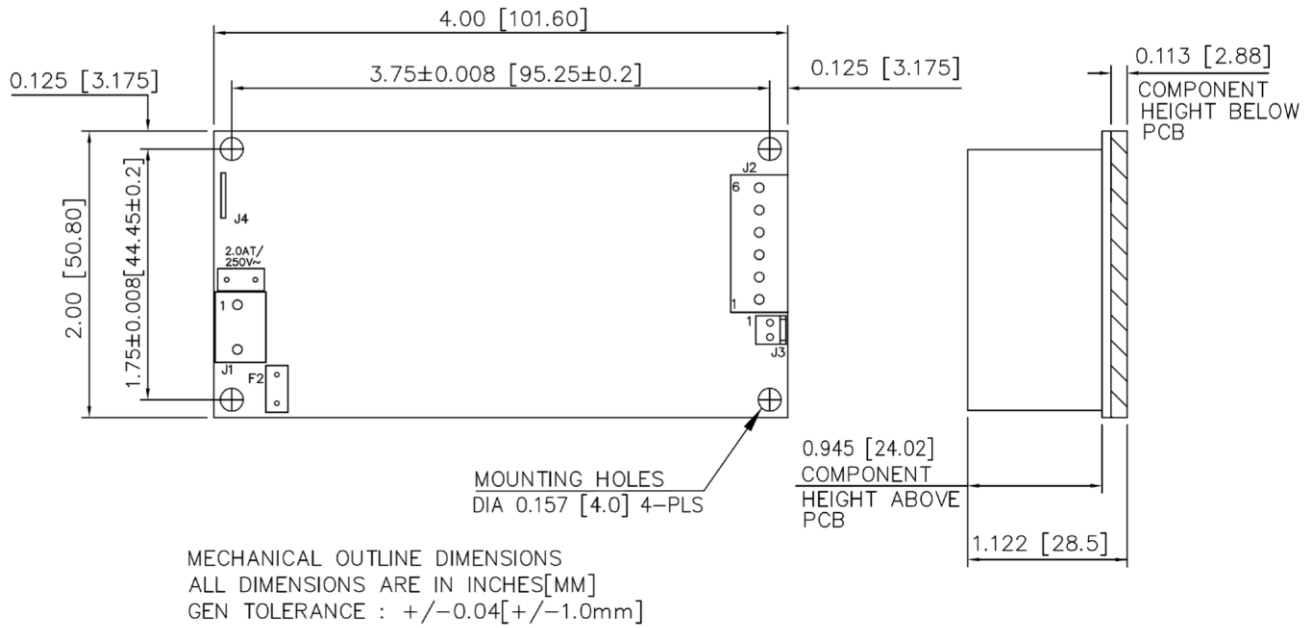


Figure 3. Mechanical Drawing ABC60-1xxxG

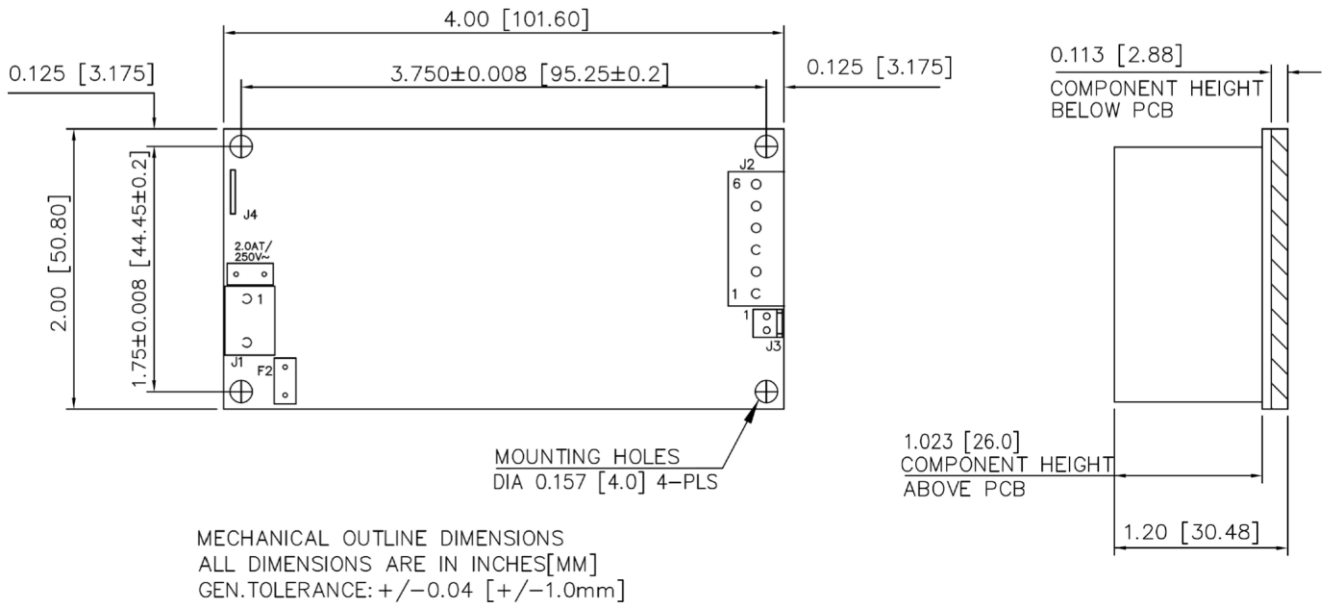
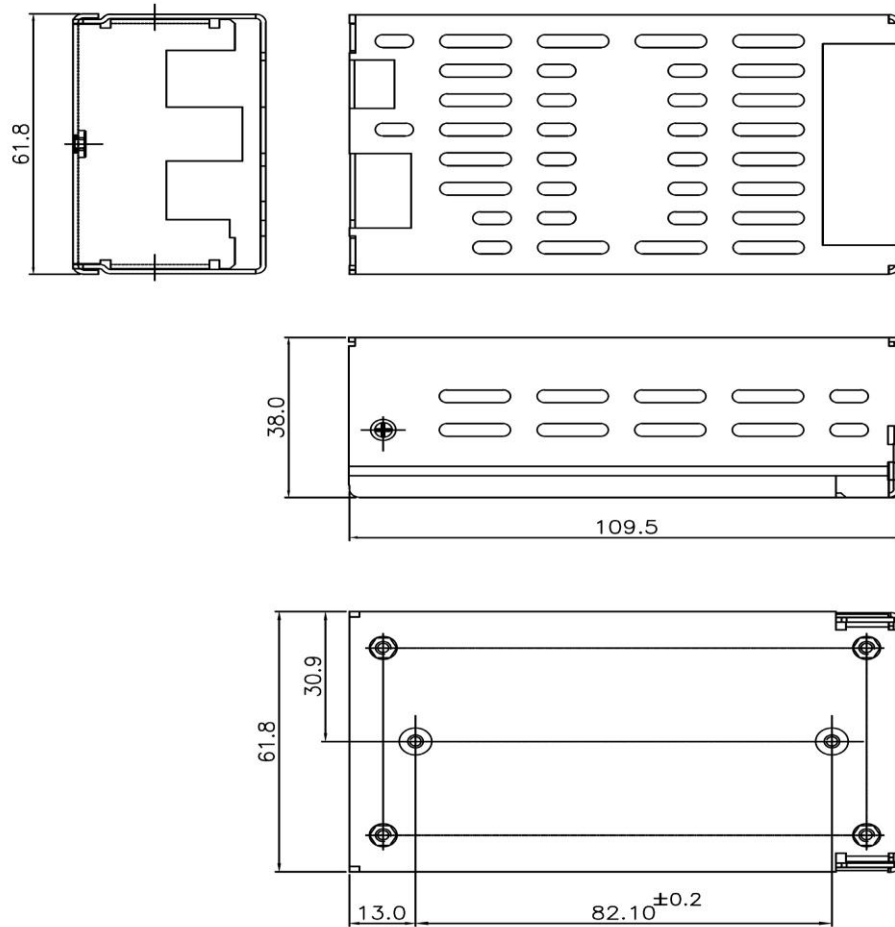


Figure 4. Mechanical Drawing ABC60-3xxxG



MECHANICAL OUTLINE DIMENSIONS  
 ALL DIMENSIONS ARE MM  
 GEN TOLERANCE :  $\pm 0.5$ mm

Figure 5. Mechanical Drawing wit Cover Kit

**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.

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Switching Power Supplies](#) category:*

*Click to view products by [Bel Fuse](#) manufacturer:*

Other Similar products are found below :

[70841011](#) [73-551-0005](#) [73-551-0048](#) [PS3E-B12F](#) [PS3E-E12F](#) [AAD600S-4-OP](#) [R22095](#) [KD0204](#) [9021](#) [LDIN100150](#) [LPM000-BBAR-01](#)  
[LPX17S-C](#) [EVS57-10R6/R](#) [FP80](#) [FRV7000G](#) [22929](#) [PS3E-F12F](#) [CQM1IA121](#) [40370121900](#) [VI-PU22-EXX](#) [40370121910](#) [LDIN5075](#)  
[LPM615-CHAS](#) [LPX140-C](#) [09-160CFG](#) [70841025](#) [VPX3000-CBL-DC](#) [VI-LUL-IU](#) [LPM000-BBAR-05](#) [LPM000-BBAR-08](#) [LPM124-](#)  
[OUTA1-48](#) [LPM000-BBAR-07](#) [LPM109-OUTA1-10](#) [LPM616-CHAS](#) [08-30466-1055G](#) [08-30466-2175G](#) [08-30466-2125G](#) [DMB-EWG](#)  
[TVQF-1219-18S](#) [6504-226-2101](#) [CQM1IPS01](#) [SP-300-5](#) [CQM1-IPS02](#) [VI-MUL-ES](#) [22829](#) [08-30466-0065G](#) [VI-RU031-EWWX](#) [08-30466-](#)  
[0028G](#) [EP3000AC48INZ](#) [VP-C2104853](#)