ABC75 Series

Low Profile Open Frame Power Supplies

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Please refer to exact equivalent product series
WLP75

The ABC75 Series of open frame power supplies feature a wide universal AC input range of 85 V – 264 VAC, offering 75 W of output power in a compact 3 x 2 x 1 inch footprint, with 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.

ABC Series power supplies are ideal for telecom, datacom, industrial equipment and other applications.

RoHS Compliant

Key Features & Benefits

- 3 x 2 x 1 Inch Form Factor
- 75 Watts with Convection Cooling
- Efficiency up to 93%
- -40 to 70°C Operating Temperature
- Thermal Shut-Down Feature
- 2 Million Hours, Telcordia -SR332-Issue 3
- IEC/EN/UL 62368-1 Certified
- CCC (China Compulsory Certification approval)
- No Load Power < 0.3 W
- RoHS Compliant
- CE Marked

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]	DESCRIPTION	VOLTAGE	MAX. LOAD CONVECTION	POWER
ABC75-1T12L ABC75-1012L	Screw Terminal Molex Header	12 V	6.25 A	75 W
ABC75-1T15L ABC75-1015L	Screw Terminal Molex Header	15 V	5.00 A	75 W
ABC75-1T24L ABC75-1024L	Screw Terminal Molex Header	24 V	3.12 A	75 W
ABC75-1T30L ABC75-1030L	Screw Terminal Molex Header	30 V	2.50 A	75 W
ABC75-1T48L ABC75-1048L	Screw Terminal Molex Header	48 V	1.56 A	75 W
ABC75-1T58L ABC75-1058L	Screw Terminal Molex Header	58 V	1.29 A	75 W
COVER-120-XBC [2]	Metal cover kit accessory			

[1] For Class II version contact Bel sales representative.
[2] 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 (Derate from 75 W @ 100 VAC to 65 W @ 85 VAC)	85 – 264 VAC / 390 VDC [3]
Input Frequency		47 – 63 Hz
Input Current	115 VAC: 230 VAC:	1 A max. 0.5 A max.
No Load Power	Typical	< 0.3 W
Inrush Current	115 VAC: 230 VAC: 264 VAC:	25 A 45 A 75 A
Power Factor	@ Full Load, Active PFC	> 0.95
Switching Frequency	Typical	60 kHz

[3] Functional, not approved.

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3. OUTPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Output Voltage	Refer to Model selection table	From 12 V to 58 V
Output Power	Convection cooling	75 W
Efficiency	48 V, 58 V: 24 V, 30 V: 12 V, 15 V:	93% 91% 90%
Hold-up Time	Typical	>16 ms
Line Regulation		+/-0.5%
Load Regulation		+/-1%
Minimum Load		0.0 A
Transient Response	25% step load change, at 0.1A/uS slew rate, 50% duty cycle, 50 Hz = 4%	recovery time < 5 ms
Ripple [4]	For all outputs	1.0 % max.
Output Voltage Adjustment		+/-3%
Rise Time	Typical	55 ms
Set Point Tolerance		+/-1%
Over Current Protection		> 110%
Over Voltage Protection	Latch type (AC recycling required)	110 to 140%
Short Circuit Protection	Hiccup mode	
Cooling	With natural convection cooling for input 100 – 264 VAC	75 W

[4] Ripple is peak to peak with 20 MHz bandwidth and 10 µF (Electrolytic capacitor) in parallel with a 0.1 µF capacitor at rated line voltage and load ranges.

4. EMC SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Conducted Emissions	EN 55032-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

5. SAFETY SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Isolation Voltage	Input to Output: (for ITE application) Input to GND:	3000 VAC 1500 VAC
Safety Standard(s)	IEC 62368-1:2018, EN 62368-1:2014; A11, UL 62368-1 and CAN/CSA C22.2 No. 62368-1:19, GB17625.1-2012; GB4943.1-2011; GB/T9254-2008	
Agency Approvals	Nemko, UL, C-UL, CCC	
CE mark	Complies with LVD Directive	

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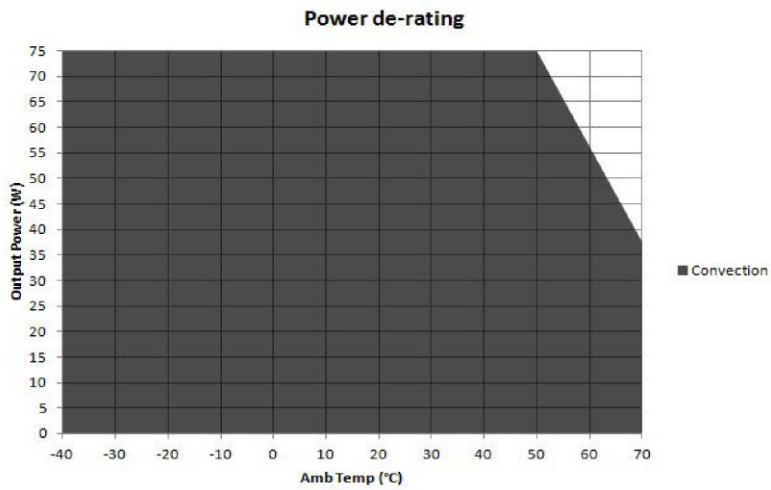
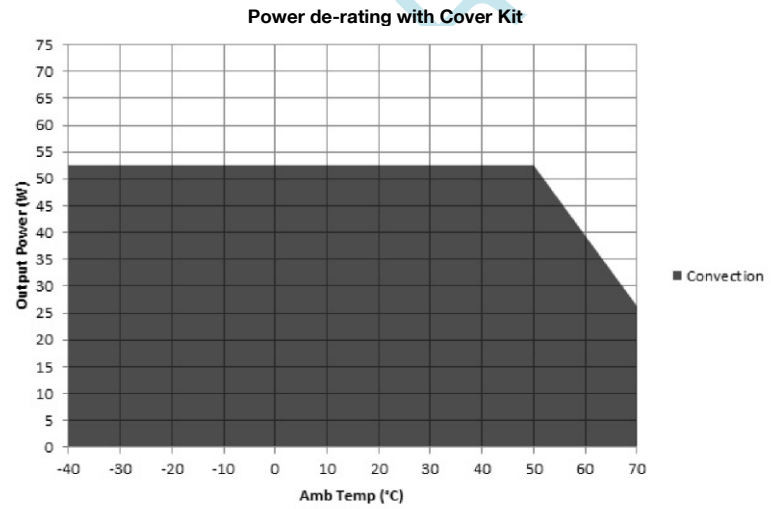
6. ENVIRONMENTAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Operating Temperature	-40 to 0°C startup guaranteed, with spec deviation [5]	-40 to +70°C
Storage Temperature		-40 to +85°C
Cooling	With natural convection cooling at 100 to 264 VAC	75 W
Relative Humidity	Noncondensing	5% to 95%
Altitude	Operating: Nonoperating:	16,000 ft 40,000 ft.
Reliability	MTBF according to Telcordia -SR332-Issue 3	2.00 million hours

[5] Output ripple can be more than 10% of the output voltage.



Convection load: 75W up to 50°C
De-rate above 50 °C @ 2.5% per °C



Convection load: 52.5W up to 50 °C
De-rate above 50 °C @ 2.5% per °C

Figure 1. Derating Curves

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7. CONNECTOR & PIN DESCRIPTIONS

CONNECTOR	PIN	DESCRIPTION / CONDITION			MANUFACTURER / PN
AC Input Connector	J1	Pin 1 Pin 2 Pin 3	AC Line Not Fitted AC Neutral	Screw Terminal (Option 1) Molex Header (Option 2)	Molex: 39357-0003 Tyco-2-1776112-3 Molex: 1722861103 (Mating conn: Molex 1722561003, Molex 1722561103, Molex 1722563103)
DC Output Connector	J2	Pin 1, 2 Pin 3, 4	V1 -VE V1 +VE	Screw Terminal (Option 1) Molex Header (Option 2)	Molex: 39357-0004 Tyco-2-1776112-4 Molex: 1722861104 (Mating conn: Molex 1722561004, Molex 1722561104, Molex 1722563104)

8. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION
Weight	180 g max
Dimensions	76.2 x 50.8 x 25.4 mm (3 x 2 x 1 inch)
Cooling	75 W with natural convection cooling at 100 to 264 VAC

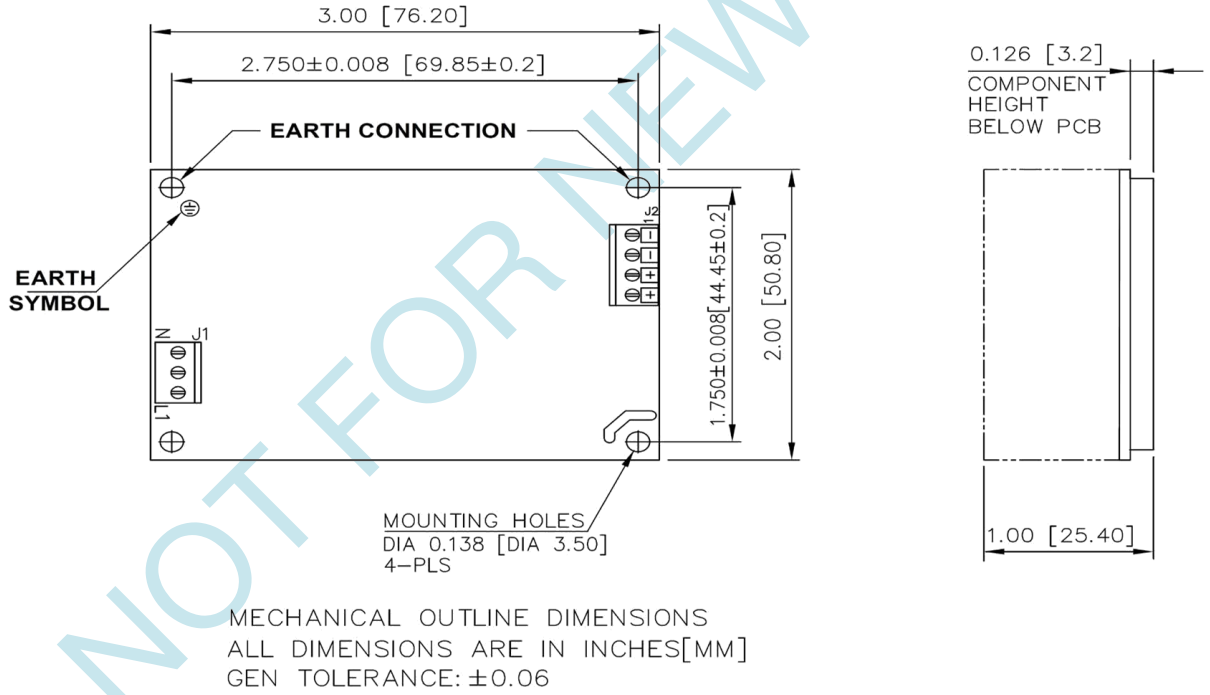

Figure 2. Mechanical Drawing - Screw Terminal (Option 1)

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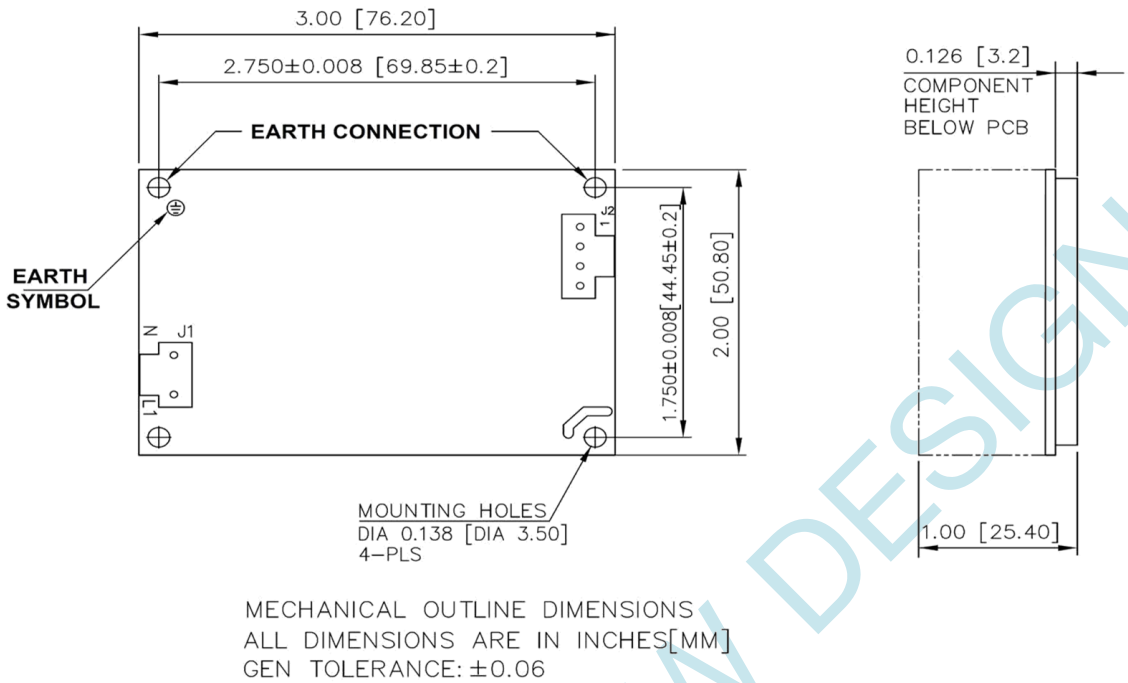

Figure 3 - Mechanical Drawing - Molex Header (Option 2)

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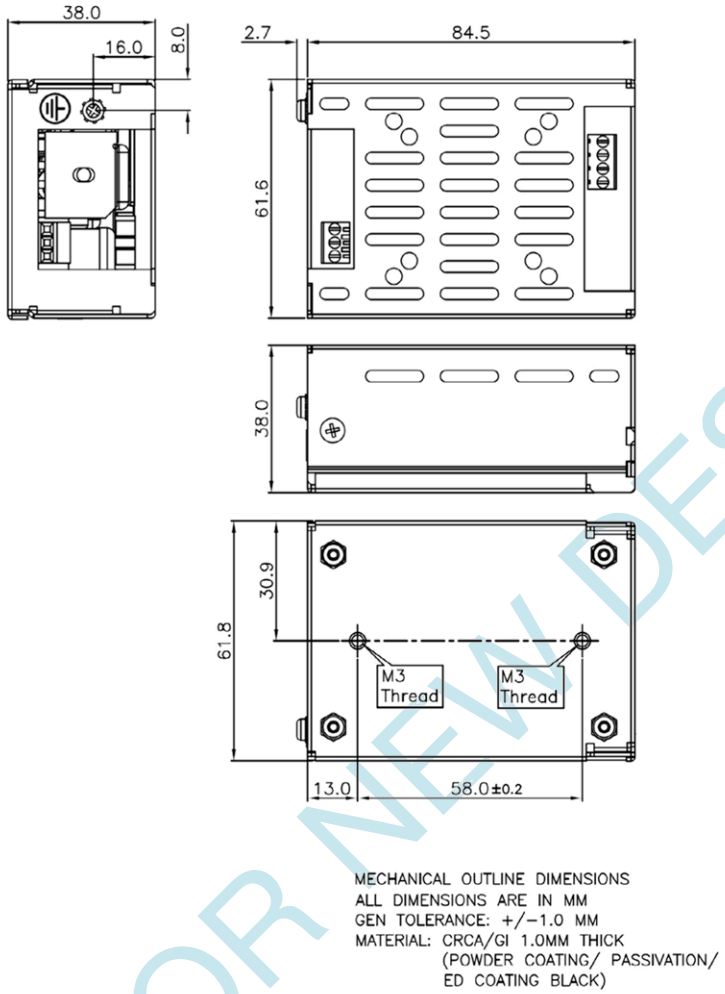

Figure 4 - Mechanical Drawing - With Cover Kit

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.

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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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