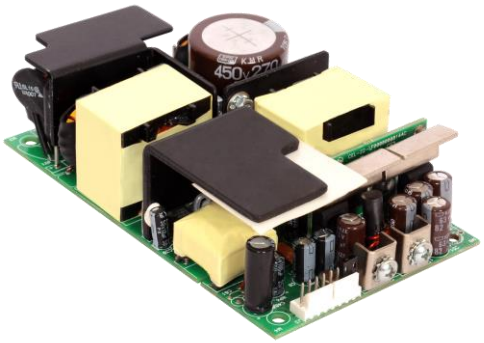
ABC300 Series

AC-DC Open Frame Power Supplies

The ABC300 Series of open-frame power supplies, with its wide universal 90-264 VAC input range and high power density, is available at 300 W of output power and a variety of 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.



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

RoHS Compliant

Key Features & Benefits

- 5 x 3 x 1.5 inch form factor
- 200 W convection cooled
- -20 to 50°C full load operation
- No minimum load required
- 12 V fan & 5 V standby outputs
- Inhibit & Power Good signals
- 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
- ITE Safety Agency Approvals
- RoHS Compliant
- CE marked

Applications

- Instrumentation
- Lighting
- Industrial Applications
- Applied Computing
- Renewable Energy
- Test and Measurement
- Robotics
- Wireless Communication

1. MODEL SELECTION

MODEL	CONNECTOR	OUTPUT VOLTAGE	MAX LOAD CONVECTION [1,2,3]	MAX LOAD 300 LFM [1,2,3]	MINIMUM LOAD	RIPPLE & NOISE[4]	TOTAL REGULATION
ABC300-1T05G	Screw Terminal	5 VDC	28.0 A	40.0 A	0.0 A	2%	± 2.5%
ABC300-1T12G	Screw Terminal	12 VDC	16.67 A	25.0 A	0.0 A	2%	± 2.5%
ABC300-1T15G	Screw Terminal	15 VDC	13.33 A	20.0 A	0.0 A	2%	± 2.5%
ABC300-1T24G	Screw Terminal	24 VDC	7.5 A	13.54 A	0.0 A	2%	± 2.5%
ABC300-1T30G	Screw Terminal	30 VDC	6.0 A	10.83 A	0.0 A	2%	± 2.5%
ABC300-1T48G	Screw Terminal	48 VDC	3.75 A	6.77 A	0.0 A	2%	± 2.5%
Cover-300-XCB[5]	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 / 120-390 VDC
Input Frequency		47 to 63 Hz
Input Current	120 VAC 230 VAC	3.2 A max 1.65 A max
No Load Power		0.8 W
Inrush Current	120 VAC 230 VAC	35 A max 65 A max
Leakage Current	120 VAC 230 VAC	< 150 µA < 300 µA
Switching Frequency	PFC converter (fixed) Resonant converter (variable)	80 kHz typical 35 to 250 kHz, 90 kHz typical

[1] Peak current rating on main output is 120% of max., lasting < 30 s with a maximum 10% duty cycle.
[2] Combined output power of main output, fan supply and standby supply shall not exceed max. power rating.
[3] Derate output power linearly to 80% from 90 VAC to 80 VAC input.
[4] 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.
[5] When used in Cover Kit, de-rate output power to 70 % under all operating conditions.

3. OUTPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Output Power[6, 7]	Derate linearly to 80% from 90 VAC to 80 VAC input.	200 to 325 W
Efficiency	120 VAC 230 VAC	88% typical 92% typical
Hold Up Time	120 / 230 VAC	10 ms
Power Factor	120 VAC 230 VAC	0.98 0.95
Line Regulation		+/-0.5%
Load Regulation		+/-2%
Transient Response	50% to 100% load change, 50 Hz, 50% duty cycle, 0.1 A/µs,	< 10%, recovery time < 5 ms
Rise Time		< 100 ms
Set Point Tolerance[8]		± 1%
Voltage Output Adjustment		± 3 %
Over Voltage Protection	Automatic recovery	110 to 150 %
Over Current Protection		110 to 150 %
Short Circuit Protection	Short term, automatic recovery	
Over Temperature Protection	Automatic Recovery	110° C primary heat sink

4. SIGNALS

PARAMETER	DESCRIPTION / CONDITION
Power Good[9]	TTL signal goes high after main output is within regulation band, delay is 0.1 to 0.3 s
Remote On/ Off	To turn on PSU short remote pin to ground
Remote Sense	Compensates for 200 mV cable drop

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] Fan supply output voltage tolerance including set point accuracy, line and load regulation is +/-30% and needs min. 1% load on main output to be within regulation band. Ripple and noise is less than 10%.
[7] The de-rating curves are valid for input voltages of 115VAC to 264 VAC. Below 115 VAC to 90 VAC the convection rating is 180 W max.
[8] Standby output voltage tolerance including set point accuracy, line and load regulation is +/-10%. Ripple and noise is less than 5%.
[9] Power good signal cannot be used as a current source. Internal pull up resistor from PG signal to 5 V is 10K. It is recommended to use external transistor if intended to source current.

6. ENVIRONMENTAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION		SPECIFICATION
Operating Temperature	Refer to de-rating curves (Fig. 1) to determine output power over the entire operating temperature range. Start-up is guaranteed		-20 to 70°C -20 to 0°C
Storage Temperature			-40 to 85° C
Cooling	Convection:	5 V model 12 V, 15 V, 24 V, 30 V & 48 V models	140 W max 200 W max
	With 300LFM:	5 V model 12 V and 15 V models 24 V, 30V and 48 V models	200 W max 300 W max 325 W max
Relative Humidity	Non Condensing		95% Rh
Altitude	Operating: Non-Operating:		10,000 ft. 40,000 ft.
Reliability	MTBF according to Telcordia –SR332-issue 3		1.77 million hours

7. SAFETY SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Isolation Voltage	Input to Output:	4242 VDC min
Safety Standards	Approved to the latest edition of the following standards: CSA/UL60950-1, EN60950-1 and IEC60950-1	
Agency Approvals	Nemko, Nemko-CCL	
CE mark	Complies with LVD Directive	

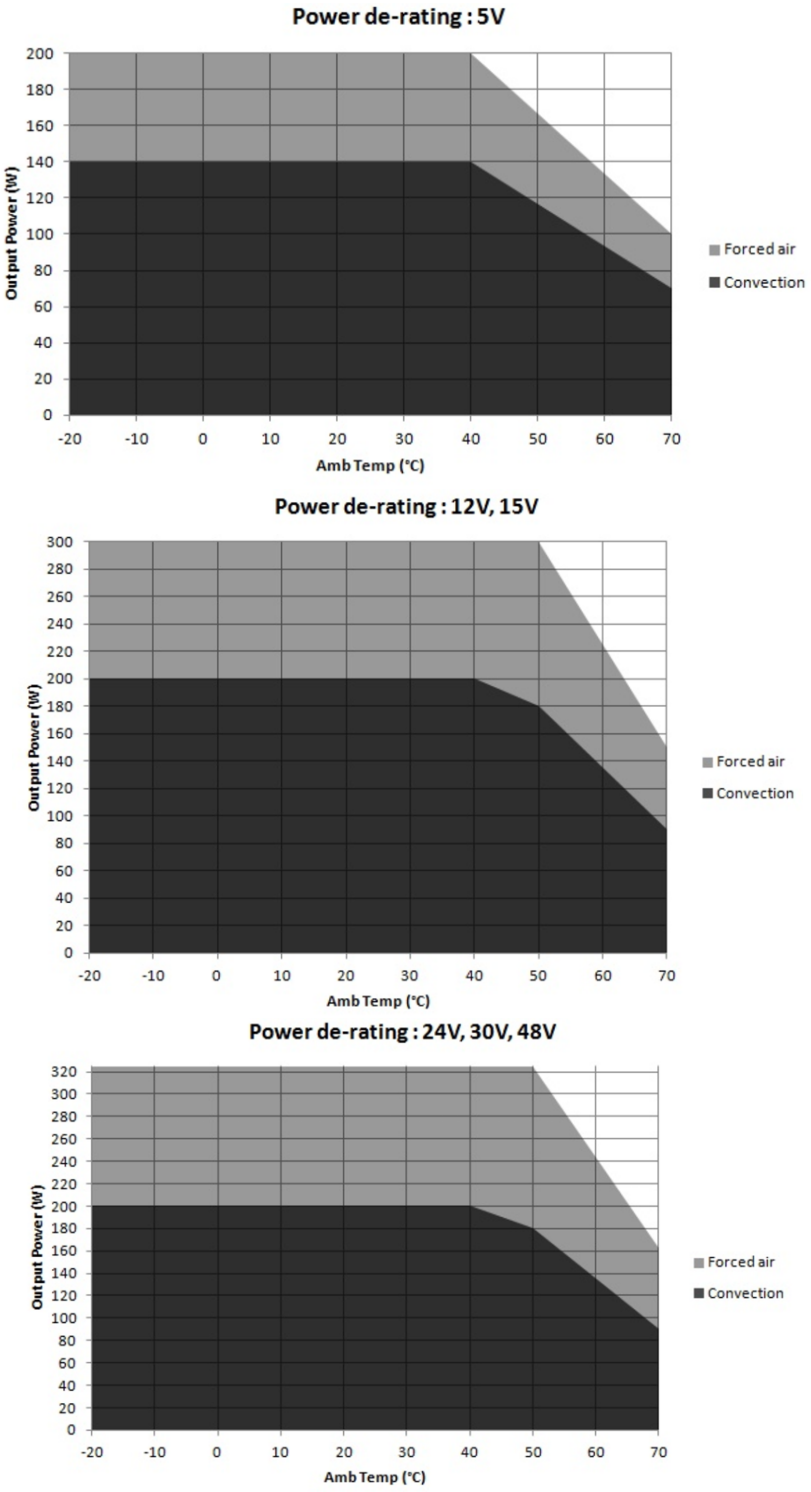
8. CONNECTOR & PIN DESCRIPTION

CONNECTOR	PIN	DESCRIPTION / CONDITION		MANUFACTURER / PN
AC Input Connector	J1	Pin 1 Pin 2	AC LINE AC NEUTRAL	Molex: 26-60-4030 Mating: 09-50-3031; Pins: 08-50-0106
DC Output Connector	J2	Pin 1 Pin 2	RTN V1	6-32 inches Screw Pan HD Mating: Designed to accept Ring Tongue Terminal AMP : 8-31886-1, wherein one 16 AWG (max) wire can be crimped. Note: One Ring Tongue Terminal with 16 AWG is recommended for current up to 11 A only. Use multiple tongue terminals with wire for more current.
Signals & Aux Power[10]	J3	Pin 1 Pin 2 Pin 3 Pin 4 Pin 5 Pin 6 Pin 7 Pin 8	REMOTE ON/OFF RTN VFAN (+12 V/0.5 A) -VE REMOTE SENSE VSTBY (+5 V/2 A, +/-5%) +VE REMOTE SENSE RTN POWER GOOD	Molex: 22-23-2081 Mating: 22-01-2087; Pins: 08-50-0113
Earth	J4		Spade Connector (Class I product only)	Molex: 19705-4301 Mating: 190030001

9. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION
Weight	450 g (0.99 lbs)
Dimensions	127.0 x 76.2 x 38.1 mm (5.0 x 3.0 x 1.5 inch)

[10] PSU is supplied with J3 housing, pin-1 and pin-2 shorted to enable main output without remote on/off feature.



Convection load: 140 W up to 40 °C
De-rate above 40 °C @ 1.67% per °C

Forced air cooled load: 200 W up to 40°C
De-rate above 40 °C @ 1.67% per °C

Convection load: 200 W up to 40 °C
De-rate between 40-50 °C @ 1% per °C
De-rate above 50 °C @ 2.5% per °C

Forced air cooled load: 300 W up to 50°C
De-rate above 50 °C @ 2.5% per °C

Convection load: 200 W up to 40 °C
De-rate between 40-50 °C @ 1% per °C
De-rate above 50 °C @ 2.5% per °C

Forced air cooled load: 325 W up to 50°C
De-rate above 50 °C @ 2.5% per °C

Figure 1. Derating Curves

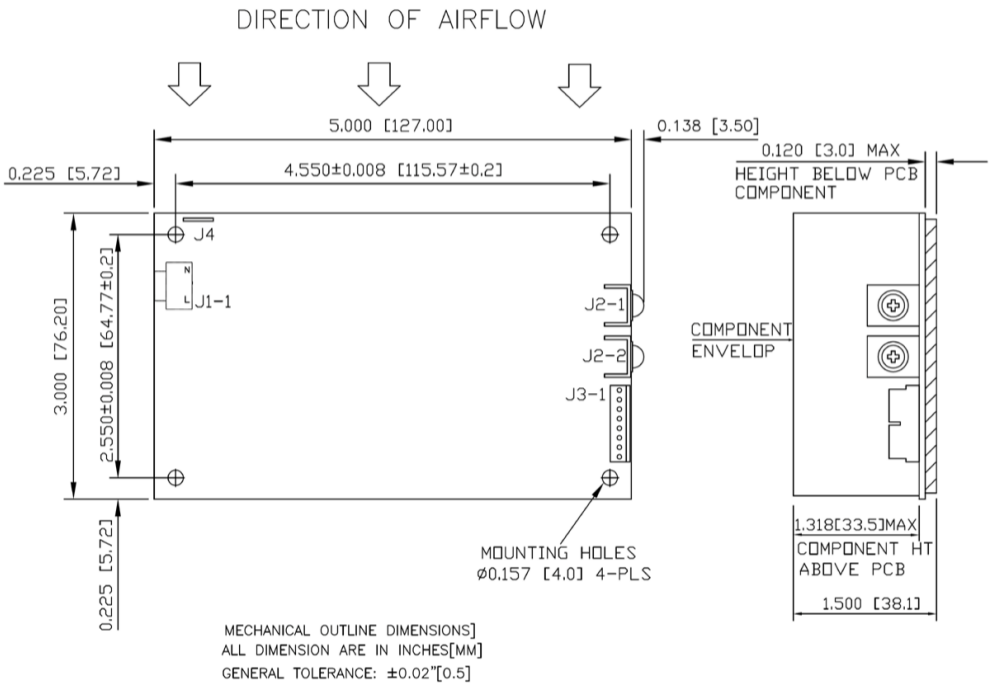


Figure 2. Mechanical Drawing

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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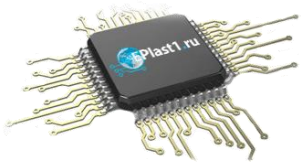
Наши преимущества:

- 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

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