MBC120 Series

Low Profile

Open Frame Power Supplies

Medical

RoHS Compliant

The MBC120 Series of open frame medical power supplies feature a wide universal AC input range of 85 V – 264 VAC, offering 120 W of output power in a compact footprint, with a variety of isolated single output voltages.

The MBC series is designed and approved to the latest Medical standards (EN/IEC 60601-1), providing 2 x MOPP isolation for Class I & Class II applications.

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

Key Features & Benefits

- 3 x 2 Inch Footprint
- 120 Watts with Forced Air Cooling
- Approved to EN/IEC 60601-1
- Efficiencies up to 93%
- -40 To 70°C Operating Temperature (85°C operating temperature available on request)
- Dual Fusing
- Thermal Shut-Down Feature
- >3.00 Million Hours, Telcordia -SR332-Issue 3
- Standby Power < 0.3 W
- Class II Option Available
- RoHS Compliant
- CE Marked

Applications

- Diagnostic
- Drug Pump
- Dialysis
- Home Health Care
- Monitoring
- Portable Equipment

1. MODEL SELECTION

MODEL NUMBER[1]	DESCRIPTION	VOLTAGE	MAX. LOAD (CONVECTION)	MAX. LOAD (300 LFM)	MIN. LOAD	RIPPLE & NOISE[2]
MBC120-1T12L MBC120-1012L	Screw Terminal Molex Header	12 V	8.33 A	10.0 A	0.0 A	1%
MBC120-1T15L MBC120-1015L	Screw Terminal Molex Header	15 V	6.66 A	8.0 A	0.0 A	1%
MBC120-1T24L MBC120-1024L	Screw Terminal Molex Header	24 V	4.16 A	5.0 A	0.0 A	1%
MBC120-1T30L MBC120-1030L	Screw Terminal Molex Header	30 V	3.33 A	4.0 A	0.0 A	1%
MBC120-1T48L MBC120-1048L	Screw Terminal Molex Header	48 V	2.08 A	2.5 A	0.0 A	1%
MBC120-1T58L MBC120-1058L	Screw Terminal Molex Header	58 V	1.72 A	2.07 A	0.0 A	1%
COVER-120-XBC[3]	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 (see derating under output power)	85-264 VAC / 390 VDC[4]
Input Frequency		47-63 Hz
Input Current	115 VAC: 230 VAC:	1.2 A max. 0.65 A max.
No Load Power	Typical	< 0.3 W
Inrush Current	115 VAC: 230 VAC: 264 VAC:	25 A 45 A 75 A
Leakage Current	Typical (N.A. For Class II Option) Touch current	300 uA <100 uA
Power Factor	@ Full Load, Active PFC	> 0.95
Switching Frequency	Typical	60 KHz

[1] For Class II Option (without input Earth pin) add suffix: -2 (e.g.: MBC120-1012L-2).
[2] 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.
[3] When used in Cover Kit, de-rate output power to 70 % under all operating conditions
[4] Functional, not approved.

3. OUTPUT SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Output Power	Forced cooling (with 300 LFM): Convection cooling (for input 100-264 VAC, de-rate linearly to 80 W @ 85 VAC):	120 W 100 W
Efficiency	48 V, 58 V: 24 V, 30 V: 12 V, 15 V:	93% 91% 90%
Hold-up Time	Typical	>10 ms
Line Regulation		+/-0.5%
Load Regulation		+/-1%
Transient Response	25% step load change, at 0.1A/uS slew rate, 50% duty cycle, 50 Hz = 4%	recovery time < 5 ms
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	

4. ENVIRONMENTAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Operating Temperature[5]	Startup guaranteed (derate linearly above 50°C to 70°C as per Fig 1)	-40 to +70°C * -40 to 0°C
Storage Temperature		-40 to +85°C
Cooling	Forced: with 300 LFM (Refer to Mech. Drawing) Convection: for input 100-264 VAC (derate linearly to 80 W @ 85 VAC)	120 W 100 W
Relative Humidity	Noncondensing	5% to 95%
Altitude	Operating: Nonoperating:	16,000 ft 40,000 ft.
Reliability	MTBF according to Telcordia –SR332-Issue 3	3.00 million hours

* 85°C operating temperature available on request.

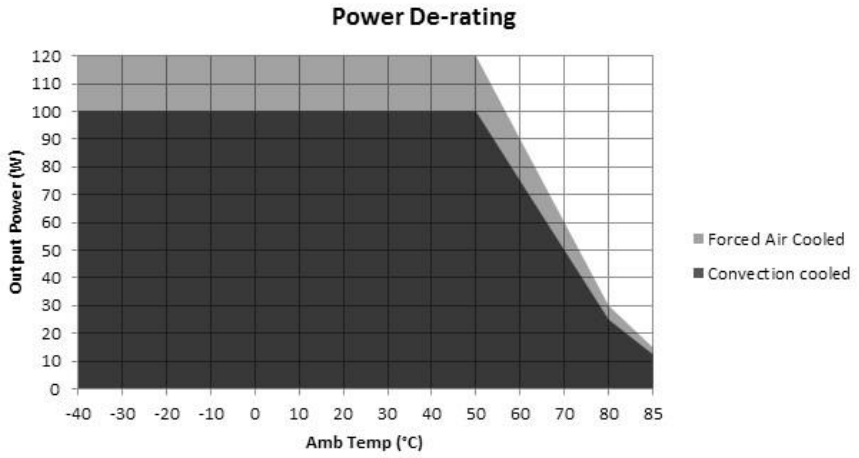
5. EMC SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Conducted Emissions	EN 55011-B, CISPR22-B, FCC PART15-B	Pass
Radiated Emissions	EN 55011 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 4, 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 4, Criterion A
Voltage Dips, Interruptions	EN 61000-4-11	Criterion B

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

6. SAFETY SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Isolation Voltage	Input to Output: (For medical applications) Input to GND: (Not Applicable For Class II Option) Output to GND: for type BF for type B (N/A For Class II Option)	4000 VAC 1500 VAC 1500 VAC 500 VAC
Protection Level	Primary to Secondary: Primary to Earth: Secondary to Earth:	2 MOPP 1 MOPP 1 MOPP
Safety Standard(s)	Approved to the latest edition of the following standards: CSA/UL60601-1, EN60601-1 and IEC60601-1.	
Agency Approvals	Nemko, cULus, CB	
CE mark	Complies with LVD Directive	



Convection load: 100 W up to 50 °C
De-rate above 50 °C @ 2.5% per °C
Up to 85°C operating temperature

Forced air cooled load: 120 W up to 50°C
De-rate above 50 °C @ 2.5% per °C
Up to 85°C operating temperature

Figure 1. Derating Curve

7. CONNECTOR & PIN DESCRIPTION

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)
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)

8. MECHANICAL SPECIFICATIONS

PARAMETER	DESCRIPTION / CONDITION
Weight	150 g
Dimensions	76.2 x 50.8 x 30.1 mm (3 x 2 x 1.18 inch)

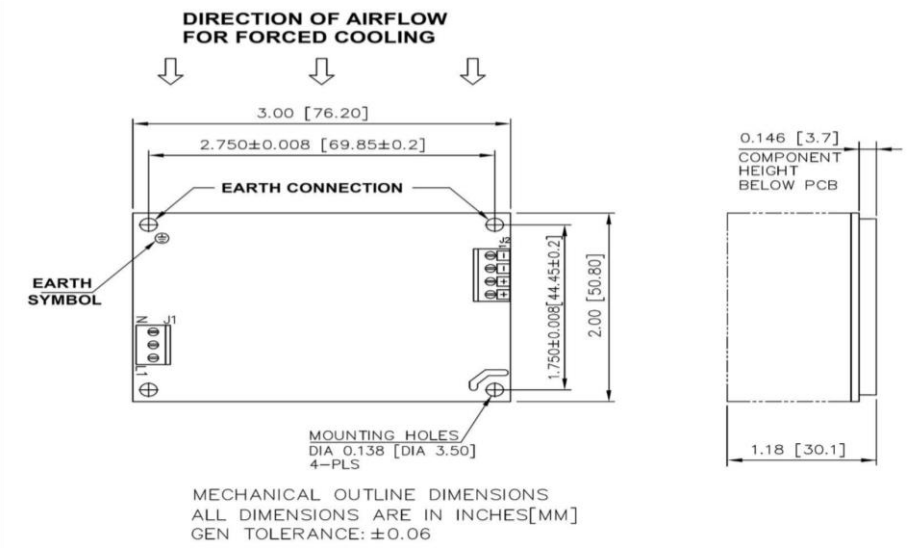


Figure 2. Mechanical Drawing - Screw Terminal (Option 1)

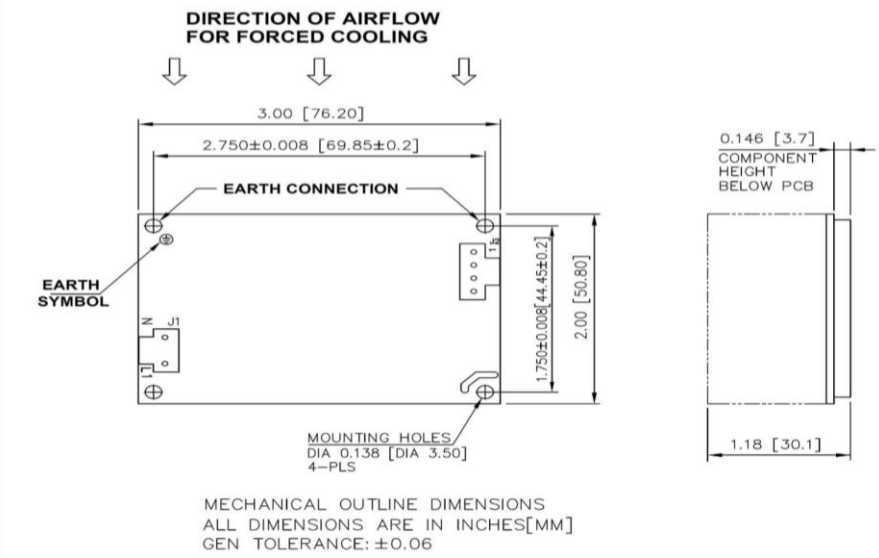


Figure 3. Mechanical Drawing - Molex Header (Option 2)

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.

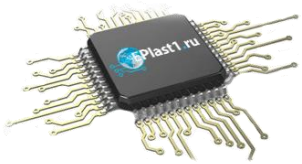
Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

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

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