

MBC75 Series Low Profile Medical Open Frame Power Supplies



Key Features & Benefits

- 3 x 2 x 1 Inch Form Factor
- 75 Watts with Convection Cooling
- Approval to EN60601 3rd Edition
- Efficiencies 93%
- -40 To 70 Degree Operating Temperature
- Dual Fusing
- Thermal Shut-Down Feature
- >3.00 Million Hours, Telcordia -SR332-Issue 3
- Standby Power < 0.3W
- Class II Option Available
- RoHS Compliant
- CE Marked

The MBC75 Series of open frame medical 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 MBC series was designed to 3rd edition medical approvals and provides 2x MOPP (Means of Patient Protection) isolation for Class I and Class II installations.

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

Applications

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

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Asia-Pacific

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Europe, Middle East

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MBC75 Series

Model Selection

MODEL NUMBER ²	DESCRIPTION	VOLTAGE	MAX. LOAD (CONVECTION)	MIN. LOAD	RIPPLE & NOISE ¹
MBC75-1T12L MBC75-1012L	Screw Terminal Molex Header	12 V	6.25 A	0.0 A	1%
MBC75-1T15L MBC75-1015L	Screw Terminal Molex Header	15 V	5.00 A	0.0 A	1%
MBC75-1T24L MBC75-1024L	Screw Terminal Molex Header	24 V	3.12 A	0.0 A	1%
MBC75-1T30L MBC75-1030L	Screw Terminal Molex Header	30 V	2.50 A	0.0 A	1%
MBC75-1T48L MBC75-1048L	Screw Terminal Molex Header	48 V	1.56 A	0.0 A	1%
MBC75-1T58L MBC75-1058L	Screw Terminal Molex Header	58 V	1.29 A	0.0 A	1%
COVER-75-XBC		metal cover kit accessory			

¹ Ripple is peak to peak with 20 MHz bandwidth and 10 μ F (Tantalum capacitor) in parallel with a 0.1 μ F capacitor at rated line voltage and load ranges.

² For Class II (without input Earth pin) add suffix -2 (e.g.: MBC75-1012L-2).

MBC75 Series

TECHNICAL PARAMETERS

Specifications are for nominal input voltage, 25°C unless otherwise stated.

Input Specifications

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Input Voltage	Universal (Derate from 75 W at 10 0VAC to 65 W at 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
Leakage Current	Typical (N.A. For Class II Option) Touch current	300 uA <100 uA
Power Factor	@ Full Load	> 0.95
Switching Frequency	Typical	60 kHz

³ Functional, not approved.

Output Specifications

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Output Power	Convection:	75 W
Efficiency	48 V, 58 V:	93%
	24 V, 30 V:	91%
	12 V, 15 V:	90%
Hold-up Time	Typical	>16 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	

Environmental Specifications

PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Operating Temperature	Startup is guaranteed with spec deviation, see Fig 1.	-40 to +70°C -40 to 0°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	3.00 million hours

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EMC Specifications

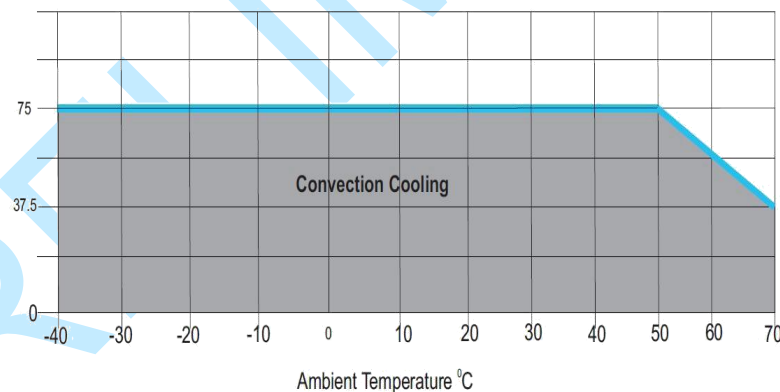
PARAMETER	DESCRIPTION / CONDITION	SPECIFICATION
Conducted Emissions	EN55022-B, CISPR22-B, FCC PART15 - B	
Static Discharge	EN61000-4-2:	Level-3
RF Field Susceptibility	EN61000-4-3:	Level-3
Fast Transients/Bursts	EN61000-4-4:	Level-3
Radiated Emissions	Radiated:	Level A
	Radiated with external core: (King core K5B RC 25x12x15-M in input cable with 5 Turns)	Level B
Surge Susceptibility	EN61000-4-5:	Level-3
Harmonic Current	EN61000-3-2:	Class D

Safety Specifications

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

Figure 1 – Derating Curve

12V,15V,24V,30V,48V,58V Output



Connector & Pin Description

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

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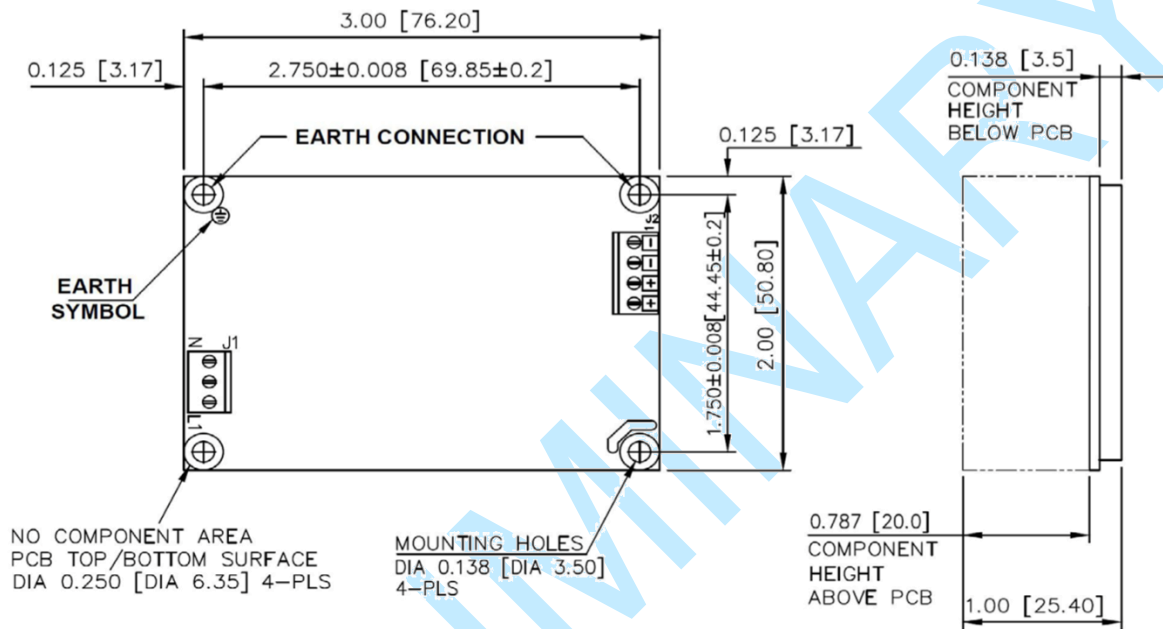
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Mechanical Specifications

PARAMETER	DESCRIPTION / CONDITION
Weight	150 g
Dimensions	76.2 x 50.8 x 25.4 mm (3 x 2 x 1 inch)

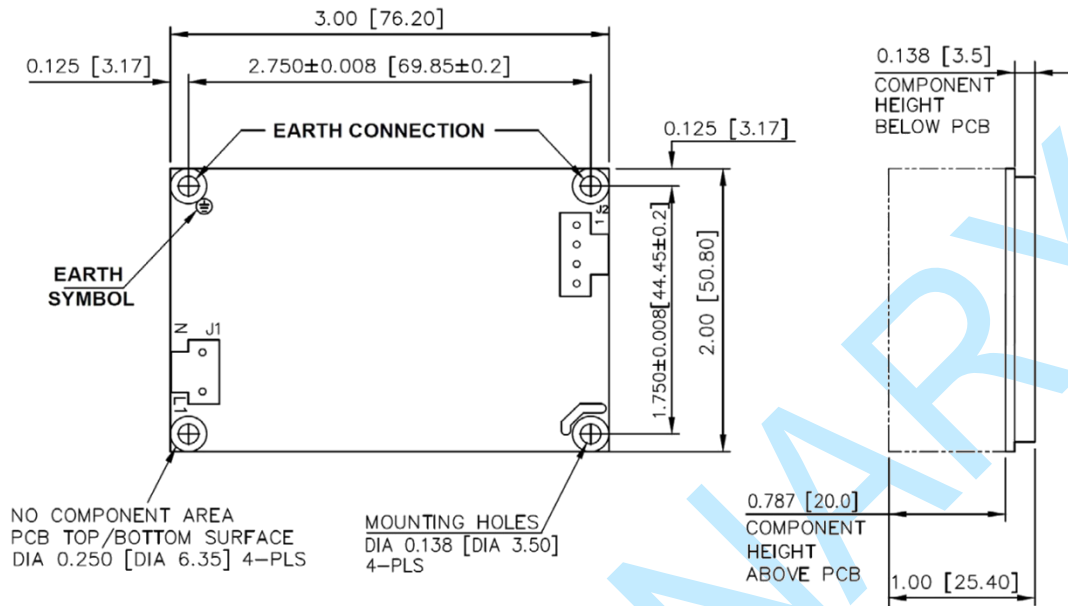
Figure 2 - Mechanical Drawing - Screw Terminal (Option 1)



MECHANICAL OUTLINE DIMENSIONS
ALL DIMENSIONS ARE IN INCHES[MM]
GEN TOLERANCE: ±0.04 [±1.0MM]

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



MECHANICAL OUTLINE DIMENSIONS
ALL DIMENSIONS ARE IN INCHES[MM]
GEN TOLERANCE: ±0.04 [±1.0MM]

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.