

## MBC60 SERIES MEDICAL 60W AC/DC



### FEATURES

- 60 W convection cooled
- -20 to 50 deg C full load operation
- 90-264 VAC input
- 2 x MOPP
- 2" x 4" x 1.2" (101.6 x 50.8 x 30.5 mm)
- No minimum load required - single output models
- Conducted EMI EN 55022-B, FCC Part 15 Level B
- Medical Safety Agency Approvals
- No load power < 0.3 W

### APPLICATIONS

- Dialysis
- Monitoring
- Pumps
- Surgical Devices
- Home Health
- Ultrasound

## TECHNICAL DATA:

### Input

PARAMETER	DESCRIPTION/CONDITION	
Input Voltage Range.	Universal Input	90 - 264 Vac
Input Frequency Range	47 to 400 Hz <sup>(3)</sup>	
Input Surge Current	264 Vac (cold start)	40 A max.
Safety Ground Leakage Current	264 Vac 50 / 60 Hz	250 $\mu$ A max
Input Current	120 Vac @ Full load 230 Vac @ Full load	< 140 $\mu$ A < 250 $\mu$ A

### Output

PARAMETER	DESCRIPTION/CONDITION	
Voltage Adjustment	V1	$\pm 10\%$
Transient Response	Main output 50 to 100% load change, 50/60 Hz, 50% duty cycle, 0.1 A / $\mu$ Sec	< 10%, recovery time < 5 mSec
Over Voltage Protection	130% Typical	
Short Circuit Protection	130% Typical	
Remote Sense	V1	0.5 Vdc compensation
Efficiency	>85%	
Set Point Tolerance	V1 = $\pm 3\%$ , V2 & V3 = $\pm 5\%$	
Rise Time	<100 mSec	

### Ordering Information

PRODUCT FAMILY	VOLTS (VDC)	OUTPUT CURRENT MAX (A)	MINIMUM LOAD (A) (4)	RIPPLE & NOISE	TOTAL REGULATION	OVP THRESHOLD
MBC60-1005G	5.1	10.0	0	1%	$\pm 0.8\%$	130% Typical
MBC60-1012G	12	5.0	0	1%	$\pm 0.8\%$	130% Typical
MBC60-1015G	15	4.0	0	1%	$\pm 0.8\%$	130% Typical
MBC60-1024G	24	2.5	0	1%	$\pm 0.8\%$	130% Typical
MBC60-1048G	48	1.25	0	1%	$\pm 0.8\%$	130% Typical
MBC60-3000G	5.2	8.0	0.5	1%	$\pm 0.8\%$	130% Typical
	12.5	3.0	0.1	1%	$\pm 5.3\%$	
	-12.8	0.5	0.0	1%	$\pm 5.3\%$	
MBC60-3001G	5.2	8.0	0.5	1%	$\pm 0.8\%$	130% Typical
	24.0	1.5	0.1	1%	$\pm 5.3\%$	
	-12.8	0.5	0.0	1%	$\pm 5.3\%$	
MBC60-3002G	5.2	8.0	0.5	1%	$\pm 0.8\%$	130% Typical
	14.6	2.5	0.1	1%	$\pm 5.3\%$	
	-14.8	0.5	0.0	1%	$\pm 5.3\%$	
MBC60-3003G	3.3	8.0	1.0	1.5%	$\pm 0.8\%$	130% Typical
	5.2	3.0	0.1	1%	$\pm 5.3\%$	
	-12.8	0.5	0.0	1%	$\pm 5.3\%$	

**Notes:**

1. Maximum outputs for each output. Max power rating should not be exceeded.
2. Output noise measurement is made with a 20 MHz bandwidth using a 6" twisted pair, terminated with a 10 uF tantalum capacitor in parallel with a 0.1 uF ceramic capacitor.
3. Safety Approved: 47 to 63 Hz.
4. Minimum load specified to meet cross regulation.
5. Specifications are for nominal input voltage, 25°C and max load unless otherwise stated.
6. Class 1 models have Earthing tab J4. Class 2 models (-2 suffix) have no Earthing tab.
7. Specifications subject to change without notice.
8. Warranty 2 years.

**General Specifications**

PARAMETER	DESCRIPTION/CONDITION	
Hold Up Time	6 mSec	120 Vac input
MTBF	>100 khrs	MIL-HDBK-217F
Switching Frequency	67 kHz typical	
Isolation Voltage	Input to Output: Min 4242 Vdc	Input to Ground 2120 Vdc
Weight	150 g (0.33 lbs)	

**Environmental**

PARAMETER	DESCRIPTION/CONDITION	
Operating Temperature	Operating	-20 to +70°C. See derating chart below.
	Storage	-40 to +85°C
Altitude	Operating 10,000 ft.	Non-operation 40,000 ft.
Relative Humidity	95%	Non-condensing
Conducted Emissions	EN55022, FCC part 15 Level B	
Radiated Emissions	EN55022, FCC part 15 Level B	To be controlled in end system
Electromagnetic Susceptibility	EN61000-4	2, 3, 4, 5 Level 3
Harmonic Current	EN61000-3-2, Class A	

**Safety**

PARAMETER	DESCRIPTION/CONDITION
EN / UL / CSA	60601-1 3rd Edition

Figure 1 Output Power Vs. Temperature

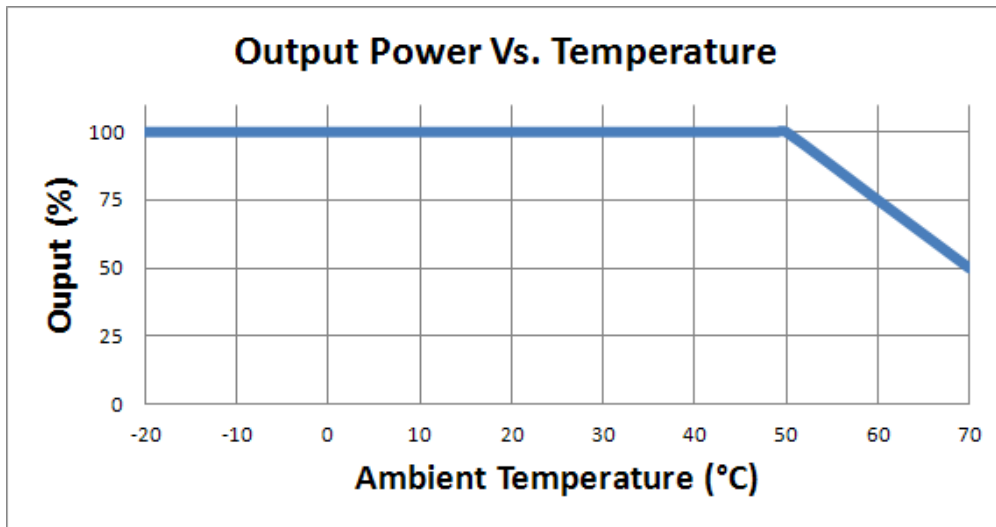
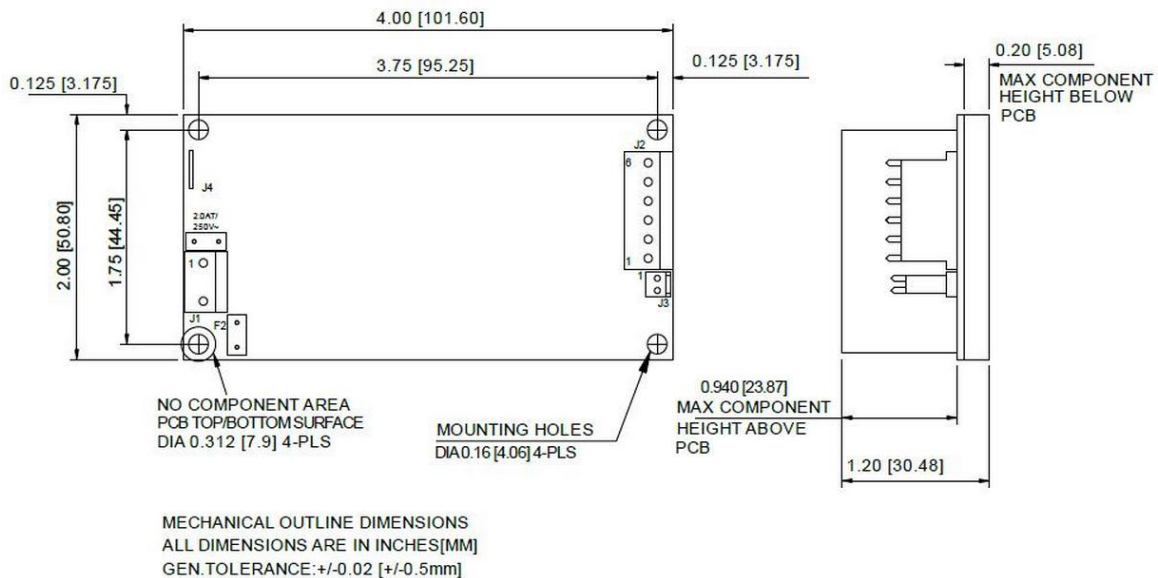


Figure 2 Dimension Drawing (Top and Side View)



**Mechanical**

INPUT = J1	EARTHING TAB = J4	DC OUTPUT = J2		REMOTE SENSE = J3
Pin 1: AC Neutral Pin 2: Removed Pin 3: AC Line	Molex: 19705-4301	Pin 1 = V1 Pin 2 = V1 Pin 3 = RTN	Pin 4 = RTN Pin 5 = V3 Pin 6 = V2	Pin 1 = +V1 Sense Pin 2 = -V1 Sense
Mating Connector: Molex: 09-50-3031 Pins: 08-50-0106	Mating Connector: Molex: 190030001	Mating Connector: Tyco: 647402-6; Pins: 3-647409-1		Mating Connector: Molex: 22-01-2021

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