

MBU250 series

V4.1

The MBU250 series of AC/DC switching mode power supplies provide 250 Watts of continuous output power. All models meet FCC Part-18, CISPR-11 and EN55011 class B emission Limits, IEC 60601-1-2 and are designed to comply with UL/cUL, TUV T-mark and conformity assessment in CE marking. All units pass burn-in test at full load condition.



APPROVALS:



Electrical Characteristics:

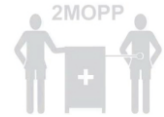
Characteristic	Condition	Min.	Typ.	Max.	Unit
Safety Approval Input Voltage Range	Safety Approval & Specification in Label	100		240	VAC
Input Operate Voltage Range	Detail to See Fig.1	90		264	VAC
Input Frequency	Sine Wave	47		63	Hz
Power Factor Correction		0.90		1	
Output Power Range	See Rating Chart			250	W
Low Line Input Current	Full Load, Vin=100VAC		3		A
High Line Input Current	Full Load, Vin=240VAC		1.5		A
Low Line Input Inrush Current	Full Load, 25°C, Cool Start, Vin=100VAC			75	A
High Line Input Inrush Current	Full Load, 25°C, Cool Start, Vin=240VAC			150	A
Safety Ground Leakage Current	Vin=264VAC, Fi=63Hz			0.30	mA
Efficiency	Full Load, Vin=230VAC, Detail to See Rating Chart	See Rating Chart			
Line Regulation	Full Load, Vin=100~120VAC or 200~240VAC			1	%
Over Voltage Protection	Recovers Automatically After Fault Condition is Removed	112		132	%
Over Load Protection	Recovers Automatically After Fault Condition is Removed	105		130	%
Time of Transient Response	Io=Full Load to Half Load, Vin=110VAC			4	ms
Hold-Up Time	Full Load, Vin=110VAC	See Rating Chart			
Start-up time	Full Load, Vin=100~240VAC			2	s
Insulation Resistance		50			MΩ
Temperature Coefficient	All Condition			±0.04	%/°C
Dielectric Withstanding Voltage (P-S)	Primary to Secondary, Limit Current <10mA	4000			VAC
Dielectric Withstanding Voltage (P-G)	Primary to PE, Limit Current <10mA	1500			VAC
Dielectric Withstanding Voltage (S-G)	Secondary to PE, Limit Current <10mA	1500			VAC
EMC Emission	Compliance to EN55011 (CISPR11), EN60601-1-2	B			Class

Environmental:

Characteristic	Condition	Min.	Typ.	Max.	Unit
Operating Temperature	Detail to See Fig.2	-40		70	°C
Storage Temperature	10 ~ 95% RH	-40		85	°C
Operating Humidity	Non-Condensing	0		95%	RH
Storage Humidity		0		95%	RH
Electro Static Discharge	Air Discharge, IEC61000-4-2			15	kV
Electro Static Discharge	Contact Discharge, IEC61000-4-2			8	kV
Mean Time Between Failure	Operating Temperature at 25°C, Calculated per MIL-HDBK-217F	200k			h
Operating Altitude (Elevation)	All Condition			3000	m
Vibration	10 ~ 500Hz, 10min./1cycle, 60min. Each Along X, Y, Z Axes			5	G
Surge Voltage	Line-Neutral			1	kV
Surge Voltage	Line-PE & Neutral-PE			2	kV

FEATURES:

- * Wide Operating Voltage, 90 to 264 VAC, 47 to 63 Hz
- * Single Output
- * Protection: OVP, OLP, OTP
- * Size: 3"x5"x1.46"
- * Input to Output: 2MOPP
- * High ESD Immunity
- * Suitable Professional Healthcare Facility
- * 5-Year Warranty



APPLICATIONS:

- * Patient Monitor
- * Ultrasound System
- * Portable Medical Device
- * Blood Chemistry Analyzer
- * Medical Image

GENERAL SPECIFICATION:

- * **Short Circuit Protection:** Auto Recovery
- * **Cooling:** Free Air Convection
- * **Protection Classes:** Class I
- * **Safety:** IEC 60601-1 Edition 3.2, ANSI/AAMI ES60601-1, CSA-C22.2 NO.60601-1, EN 60601-1

MBU250 series

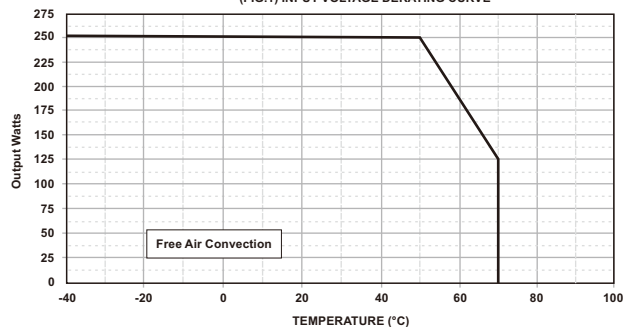
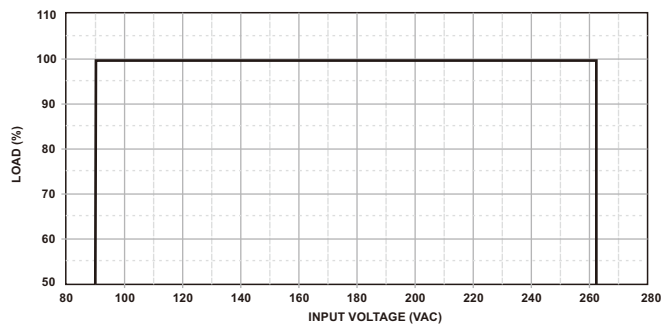
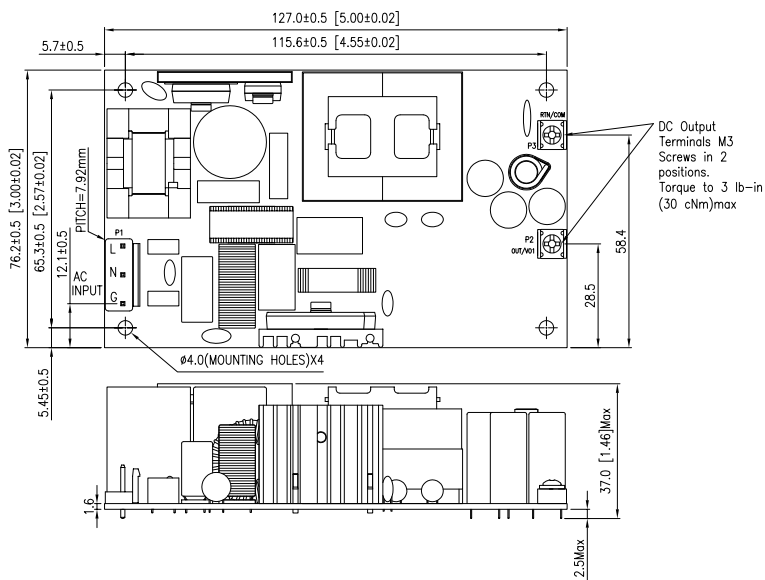
V4.1

250W Open Frame Medical Grade Power Supply

SPECIFICATION NOTE :

1. Output can provide up to peak load when the power supply starts up. Continuous staying in more than rated load is not allowed.
2. At factory, in 60% rated load condition, each output is checked to be within voltage accuracy.
3. Line regulation is defined by changing $\pm 10\%$ of input voltage from nominal line at rated load.
4. Load regulation is defined by changing $\pm 40\%$ of measured output load from 60% rated load.
5. The ripple is measured from peak to peak with a bandwidth-limit of 20MHz (Measured at the output connector with a 0.1uF ceramic capacitor and a 47uF electrolytic capacitor).
6. Hold up time is measured from the end of the last charging pulse to the time which the main output drops down to low limit of main output at rated load and nominal line.
7. Efficiency is measured at rated load, and nominal line.

MECHANICAL DIMENSIONS: (UNIT: mm [inch])



PIN CHART

Output

MODEL	Screw Terminal	P2	P3
MBU250-1XX	OUT	RTN	

PACKING :

1. Net weight: 330g approx.
2. Input connector mates with JST housing VHR-5N and JST SVH series crimp terminal.
3. Output connector mates with M3 screws in 2 positions torque to 3 lb-in (30 cNm) max.

Rating Chart:

MODEL NO.	Output Voltage	Output Current	Maximum Output Power	Ripple & Noise	Total Regulation	Typ. Efficiency	Typ. No Load Consumption	Hold-Up Time
	(VDC)	(A)	(W)	(mVp-p)	(%)	(%)	(W)	(ms)
MBU250-105	12.0	20.83	250	120	± 5	91	0.21	16
MBU250-106	15.0	16.66	250	150	± 5	92	0.21	16
MBU250-107	19.0	13.15	250	190	± 5	93	0.21	16
MBU250-108	24.0	10.41	250	240	± 3	94	0.21	16
MBU250-109	30.0	8.33	250	300	± 2	94	0.21	16
MBU250-110	36.0	6.94	250	300	± 2	94	0.21	16
MBU250-111	48.0	5.20	250	480	± 2	94	0.21	16