



# CB

## FEATURES

- 1U 150W convection cooling with ATX
- Input Active PFC for Medical purpose
- Power Good / Power Fail signal
- +5V Standby & Remote On/Off
- MTBF>130,000 hr. Mil-217F at 50°C
- Thermal Protection

## 1. Description

The MATX-150U is a 150W ATX power supply with active PFC for medical applications. This unit utilizes a thermally efficient U channel chassis design for convection cooling.

Output Voltage	Mini. Output Current	Rated Output Current	Max output Current <sup>(Note 1)</sup>	Line Regulation	Load Regulation	Ripple & Noise p-p <sup>(Note 2)</sup>	Initial Setting Accuracy <sup>(Note 3)</sup>
<b>+5V</b>	1A	11A	14A	±1%	±2%	50mV	5.05V to 5.15V
<b>+12V</b>	0A	5A	10A	±1%	±4%	100mV	11.6V to 12.6V
<b>-12V</b>	0A	0.5A	1A	±1%	±5%	150mV	-11.4V to -12.6V
<b>+3.3V</b>	0A	7.5A	12A	±1%	±4%	50mV	3.20V to 3.40V
<b>+5Vsb</b>	0A	0.75A	1.5A	±1%	±4%	100mV	4.80V to 5.20V

**Total Output Power: 150W at 50°C environment temperature**<sup>(Note 4)</sup>.

Note: 1) The maximum total combined output power on the +3.3V and +5V rails is 90W.

2) Measured by a 20MHz bandwidth limited oscilloscope when each output is connected with a 10µF Electrolytic Capacitor and a 0.1µF Ceramic Capacitor.

3) Initial Setting Accuracy is at Input 110VAC and all output at 60% rated load.

4) The total DC continuous power is 150W at input voltage of 110-264VAC. With input voltage 90-109VAC the total DC continuous power is 120W max. The maximum total combined output power on the +3.3V and +5V rails is 90W. On condition of with the option cover, the maximum 150W is at 30°C environment temperature (Please see part 6 of operating temperature).

## 2. Input Specification

Parameter	Conditions/Description	Min.	Nom.	Max.	Units
Input Voltage	Continuous input range.	90	115/230	264	VAC
Input Frequency	AC input.	47		63	Hz
Hold Up Time	Nominal AC Input Voltage (115VAC), rated load.	16			ms
Input Current	Nominal AC Input Voltage (115VAC/230VAC), rated load.			4/2	A
Inrush Current	Nominal AC Input Voltage (115VAC/230VAC), one cycle at 25°C.			30/60	A
Input Protect	Non-user serviceable internally located AC input line fuse.				

## 3. Output Specification

Parameter	Conditions/Description	Min.	Nom.	Max.	Units
Efficiency	Rated load, 115VAC. Varies with distribution of loads among output.		75		%
Minimum load			See Description		
Ripple & Noise	Rated load, 20MHz bandwidth		See Description		
Output Power	Continuous output power.		See Description		
Line Regulation	Less than ±1% at rated load with ±10% changing in input voltage.		See Description		
Load Regulation	Measured from 60% to 100% rated load and from 60% to 20% rated load (60% ±40% rated load) for each output, and others voltage setting at 60%.		See Description		
Turn-on Delay	Time required for initial output voltage stabilization	0.3		6	Sec

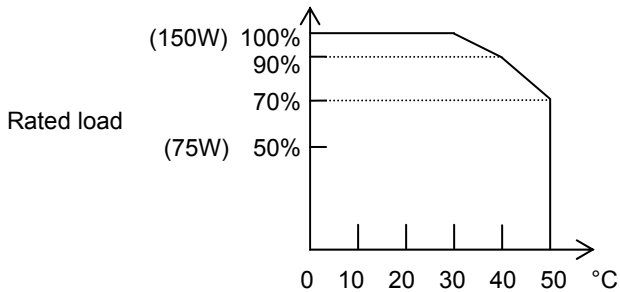
#### 4. Interface Signals and Internal Protection

Parameter	Conditions/Description
Power On/Off	The power supply will be turned on when the power On/Off pin is connected to secondary Ground.
Power Good Signal	When power is turned on, the power good signal will go high 100ms to 500ms after all output DC voltages are within regulation limits.
Power Fail Signal	The power fail signal will go low at least 1 mS before any of the output voltages fall below the regulation limits.
Short Circuit Protection	Fully protected against short circuit. Latch off mode upon removal of short circuit condition.
Over Voltage Protection	Built in over voltage protection circuit will shut down the outputs to prevent damage to external circuits. The trigger point is 5.8~6.4 at +5V.
Over Temperature Protection	When the power supply is operating over the temperature or load limit, the power supply will shut down automatically to protect itself. The protection point is set at HS1 over 110°. When temperature returns to normal, the power supply will restart automatically.

#### 5. Safety Approvals, EMI and EMS Specification

Parameter	Conditions/Description	Min.	Nom.	Max.	Units
Approvals	UL, UL 60601-1 CB, IEC 60601-1 TUV, EN 60601-1			Approved	
EMI	EN 60601-1-2: 2001	B			Class
PFC	EN 61000-3-2: 2000 & EN 610003-3: 2001	D			
EMS	IEC 61000-4-2: 2001, 8KV air discharge, 6KV contact discharge	3			Level
	IEC 61000-4-3: 2002, 3V/m	3			
	IEC 61000-4-4: 2004, 2KV line & PE	3			
	IEC 61000-4-5: 2001, 1KV line to line, 2KV line to PE	3			
	IEC 61000-4-6: 2004, 3V/m	3			
	IEC 61000-4-8: 2001, 3A/m	3			
	IEC 61000-4-11: 2004				

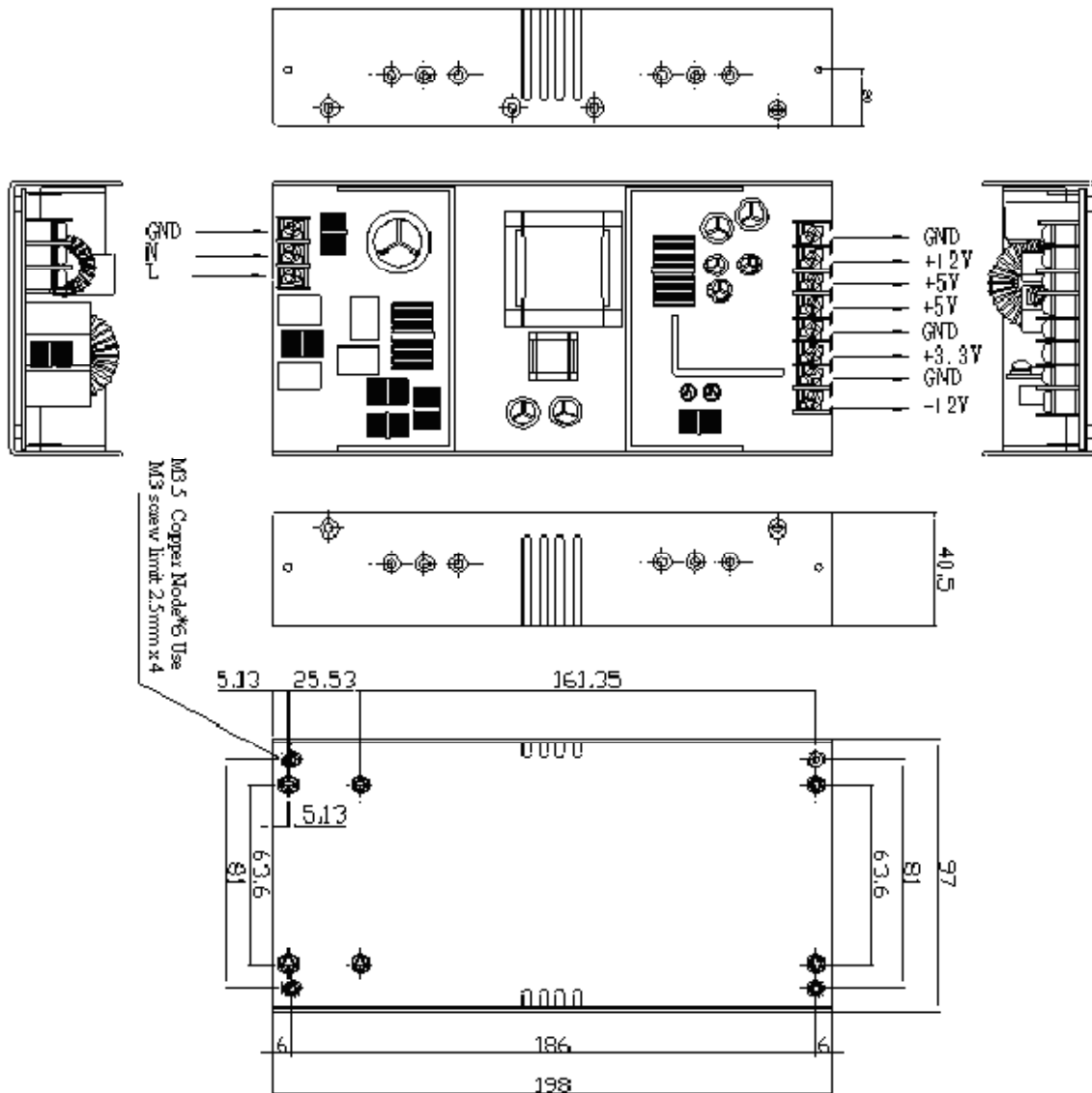
#### 6. Environment Specification

Parameter	Conditions/Description	Min.	Nom.	Max.	Units
Operating Temperature without the optional cover (open frame)	Derate linearly above 50°C by 2.5% per °C At 100% load: to a maximum temperature of 70°C At 50% load:	0		50	°C
Operating Temperature with the optional cover (order no. 831-815U)	30°C at 100% rated load, 40°C at 90% rated load and 50°C at 70% rated load as derating curve below:				
	 <p>(150W) 100% 90% 70% Rated load (75W) 50%</p> <p>0 10 20 30 40 50 °C</p>	0		50	°C
Storage Temperature		-20		+70	°C
Relative Humidity	Non-condensing.	5		95	%RH
Altitude	Operating			10K	Feet
	Non-operating			40K	

## 7. Mechanical Specification

Parameter	Conditions/Description				
Dimension	198 (L) x 97 (W) x 40 (H) mm, Tolerance +/- 0.4mm.				
Connector	CN1 --- AC input:	3 Positions Terminal blocks.			
	CN3 --- DC output:	8 Positions Terminal blocks.			
	CN4 --- Fan output:	Molex 5045-02A or equivalent			
	CN5 --- PG/PF:	Molex 5045-02A or equivalent			
	CN6 --- PS ON/OFF:	Molex 5045-02A or equivalent			
	CN7 --- +5Vsb output:	Molex 5045-02A or equivalent			
Pin Assignment	CN1	Pin	1. L	2. N	3. GND
	CN3	Pin	1. -12V	4. GND	7. +12V
			2. GND	5. +5V	8. GND
			3. 3.3V	6. +5V	
	CN4	Pin	1. +12V	2. GND	
	CN5	Pin	1. +5V	2. GND	
	CN6	Pin	1. +5V	2. GND	
CN7	Pin	1. +5Vsb	2. GND		

## Mechanical



## 8. Option

Parameter	Conditions/Description	DIMENSIONS (mm)
Cable (No. 866-815H)	ATX connector, HDD connector x 2, FDD connector x 1	
Cover (No. 831-815U)	Cover assembling with MPM-815H	