

# SS-2U50ES 500W switching PSU for 2U



## MODEL : SS-2U50ES (> 80%)

### 1. Specification

- 1.1. AC Input Voltage Range: 100VAC ~ 240VAC,  $\pm 10\%$ , 47 to 63 Hz.
- 1.2. INPUT CURRENT: 8.0 A ( RMS ) FOR 115VAC / 4.0 A ( RMS ) FOR 230VAC.
- 1.3. Input Power Factor: The minimum power factor at full load shall be 0.98/115V 60 Hz and 0.95/230V 50 Hz.
- 1.4. Inrush current: 35A MAX. FOR 115 VAC / 55A MAX. FOR 230 VAC.
- 1.5. DC Output: 500W maximum.

	Output-1	Output-2	Output-3	Output-4	Output-5
Output Voltage	+5V DC	+12V DC	-12V DC	+3.3V DC	+5VSB
Output Current(Max)	25A	40A	0.8A	25A	3.5A
Output Current(Min.)	0.5A	2A	0A	0.5A	0.1A
Ripple/Noise Max.(P-P)	60mv	120mv	120mv	60mV	60mV
Line Regulation	$\pm 1\%$	$\pm 1\%$	$\pm 1\%$	$\pm 1\%$	$\pm 1\%$
Load Regulation	$\pm 5\%$	$\pm 5\%$	$\pm 5\%$	$\pm 5\%$	$\pm 5\%$

#### Note:

1. Noise Test – Noise bandwidth is from DC to 20 MHz.
2. Ripple frequencies greater than 1MHz shall be attenuated by the measurement system.
3. Add 0.1uF/10uF capacitor at output connector terminals for ripple and noise measurements.
4. The combined total power from 5V & 3.3V shall not exceed 170W.

### 1.6. PS-ON

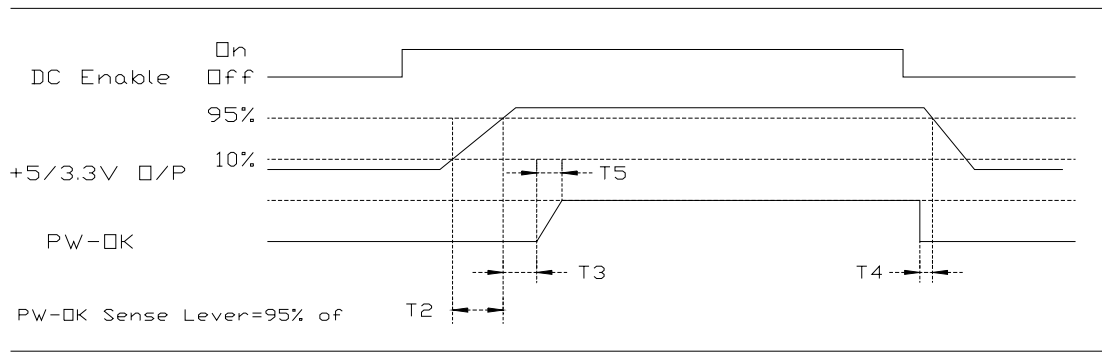
#### Remote On/Off Control:

When PS-ON is pulled to TTL Low, the DC output is to be enabled.

When PS-OFF is pulled to TTL high, the DC output is to be disabled.

### 1.7. PW-OK

PW-OK is power good signal and should be asserted high by the power supply to indicate that +5VDC and +3.3VDC output are above the under voltage thresholds of the power supply TTL. compatible signal out with 100ms to 500ms.



## Timing of PS-ON, PW-OK, and Germane Voltage Rails

Although there is no requirement to meet specific timing parameters, The following signal timings are recommended:

$$2\text{ms} \leq T2 \leq 200\text{ms}$$

$$100\text{ms} \leq T3 \leq 500\text{ms}$$

$$T4 > 1\text{ms}$$

$$T5 \leq 10\text{ms}$$

1.8. Efficiency: TYPICAL >80% AT 115VAC , FULL LOAD.

1.9. Hold-Up Time: 16ms at maximum load & normal input voltage.

## 2. PROTECTIONS

### 2.1 OVER-VOLTAGE PROTECTION

OUTPUT	Min	Max
+3.3V	3.7V	4.1V
+5V	5.7V	6.5V
+12V	13.1V	14.5V

### 2.2 SHORT CIRCUIT PROTECTION

A short circuit placed between the DC Return and the output shall cause No damage and the power supply shall shutdown.

### 2.3 OVER POWER PROTECTION

The power supply shall shut down when output power exceeds 110% to 160% of full load and require a power on cycle be performed by the operate

### 2.4 NO LOAD OPERATION

No parts shall be damaged on the power supply.

## 3. ENVIRONMENT TEMPERATURE

3.1 Operation Temperature: 0°C to 45°C

3.2 Cooling: ONE 60mm DC FANS.

3.3 Storage Temperature:-20°C to 70°C

3.4 Humidity: 5 to 90% non-condensing.

#### 4. Mean Time Between Failure (MTBF)

Using MIL - HDBK -217F the calculated MTBF=100,000 hours at 25°C 75% loading.

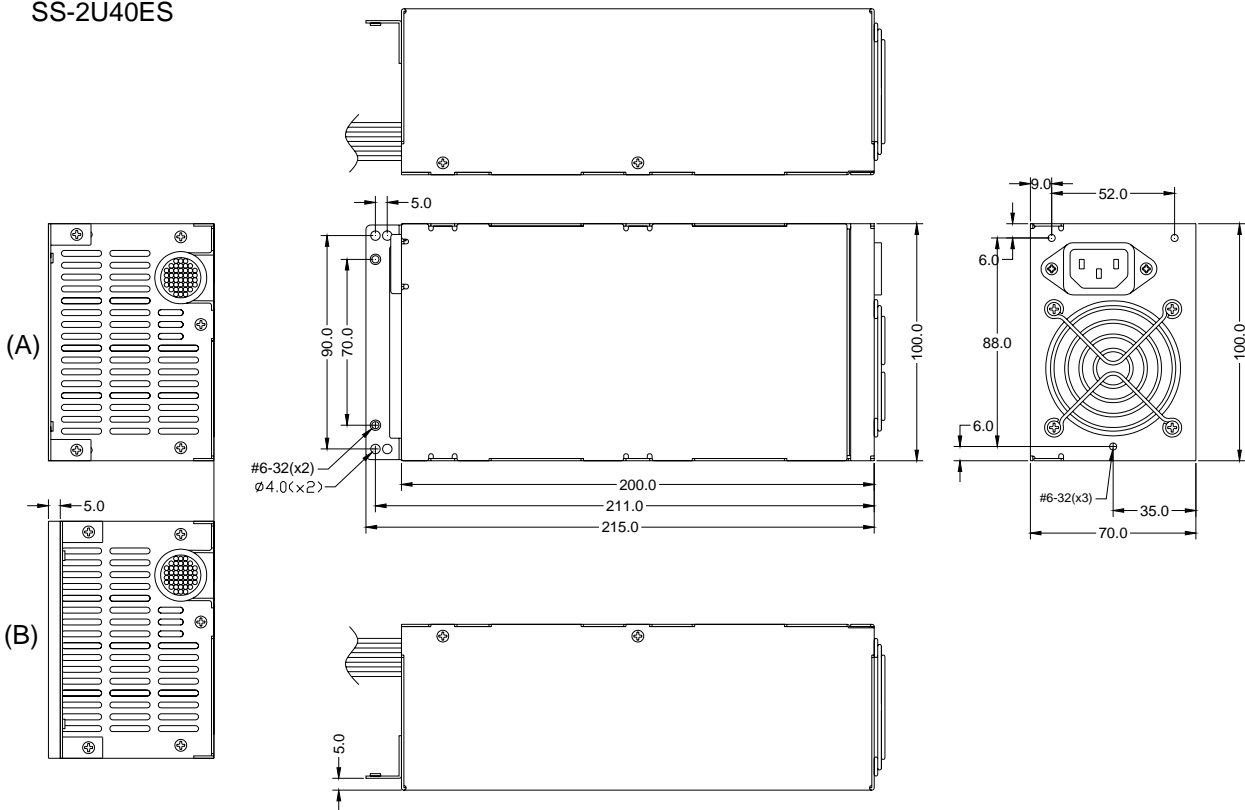
#### 5. SAFETY: TO MEET UL, CUL, TUV.

#### 6. EMI NOISE FILTER: FCC CLASS B, CISPR22 CLASS B.

#### 7. DIMENSION

L 200 x W 100 x H 70 mm

SS-2U50ES  
SS-2U40ES



#### 8. PINOUTS OF CONNECTORS

ATX or EPS (20+4)Pin x 1 ,

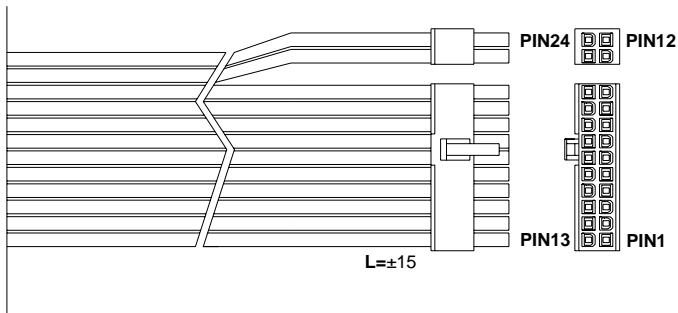
M8P +12V Power Connector x 1 ,

M4P +12V Power Connector x 1 ,

H.D.D. x 9 ,

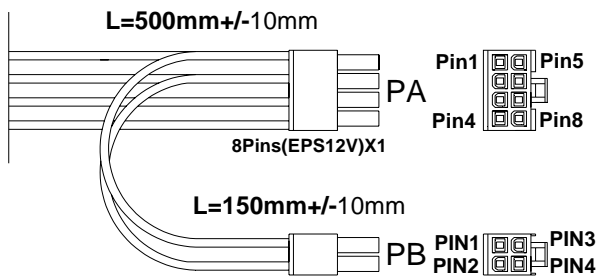
Floppy x 1

SATA x 2.



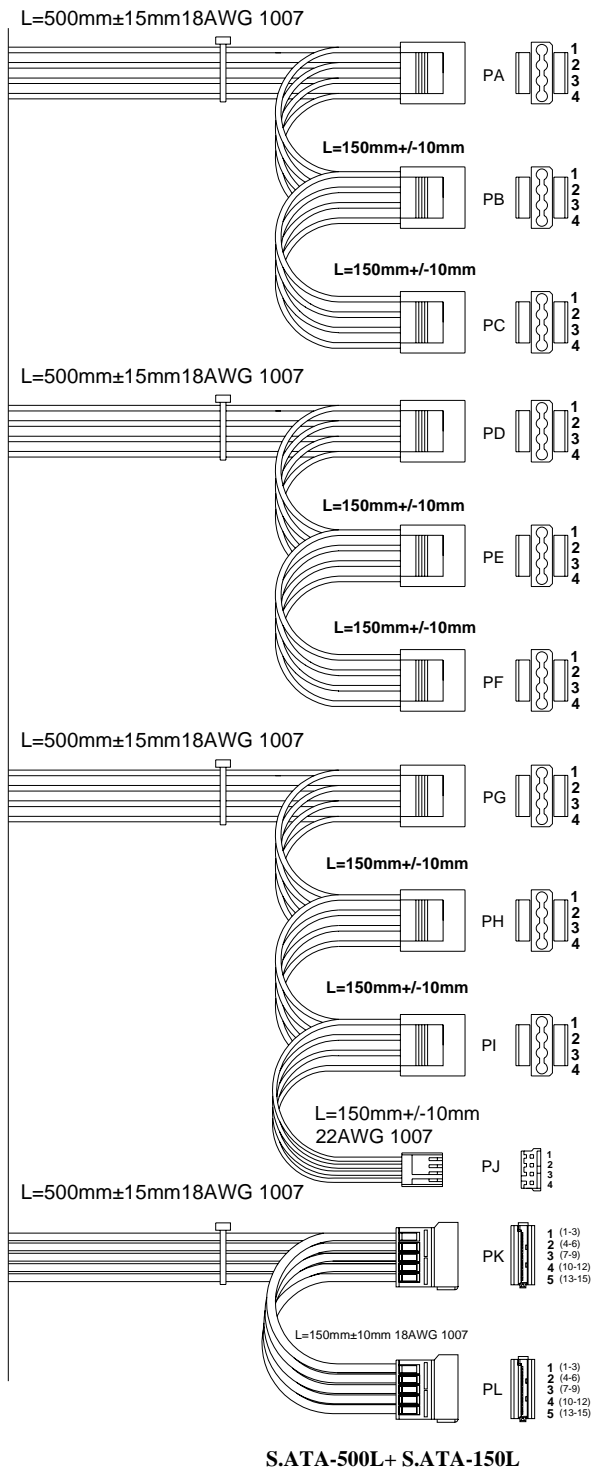
**24Pins(EPS12V)**  
**Connector HOUSING: MOLEX 39-01-2240 or equivalent**  
**TERMINAL: MOLEX 39-00-0039 or equivalent**

Housing	Pin No.	WIRE COLOR	LENGTH	Pin No.	WIRE COLOR	LENGTH
P24	1	ORANGE(+3.3V)	500mm/18AWG	13	ORANGE(+3.3V)	500mm/18AWG
	2	ORANGE(+3.3V)	500mm/18AWG	14	ORANGE(+3.3Vs)	500mm/22AWG
	3	BLACK(GND)	500mm/18AWG	15	BLUE(-12V)	500mm/18AWG
	4	RED(+5V)	500mm/18AWG	16	BLACK(GND)	500mm/18AWG
	5	BLACK(GND)	500mm/18AWG	17	GREEN(PS-ON)	500mm/20AWG
	6	RED(+5V)	500mm/18AWG	18	BLACK(GND)	500mm/18AWG
	7	BLACK(GND)	500mm/18AWG	19	BLACK(GND)	500mm/18AWG
	8	GRAY(PG)	500mm/20AWG	20	N/C	
	9	PURPLE(+5VSB)	500mm/18AWG	21	RED(+5V)	500mm/18AWG
	10	YELLOW(+12V)	500mm/18AWG	22	RED(+5V)	500mm/18AWG
	11	YELLOW(+12V)	500mm/18AWG	23	RED(+5V)	500mm/18AWG
	12	ORANGE(+3.3V)	500mm/18AWG	24	BLACK(GND)	500mm/18AWG



HOUSING	Pin	WIRE COLOR	LENGTH	Pin	WIRE COLOR	LENGTH
PA	1	Black/Black	500mm / 18AWG	5	Yellow/Yellow	500mm / 18AWG
	2	Black/Black	500mm / 18AWG	6	Yellow/Yellow	500mm / 18AWG
	3	Black	500mm / 18AWG	7	Yellow	500mm / 18AWG
	4	Black	500mm / 18AWG	8	Yellow	500mm / 18AWG
PB	1	Black	150mm / 18AWG	3	Yellow	150mm / 18AWG
	2	Black	150mm / 18AWG	4	Yellow	150mm / 18AWG

Connector HOUSING: MOLEX 39-01-0280 or equivalent  
 Connector HOUSING: MOLEX 39-01-0240 or equivalent



HOUSING	Pin No.	WIRE COLOR	LENGTH	Pin No.	WIRE COLOR	LENGTH
PA	1	Yellow / Yellow	500mm/18AWG	3	Black / Black	500mm/18AWG
	2	Black / Black	500mm/18AWG	4	Red / Red	500mm/18AWG
PB	1	Yellow / Yellow	150mm/18AWG	3	Black / Black	150mm/18AWG
	2	Black / Black	150mm/18AWG	4	Red / Red	150mm/18AWG
PC	1	Yellow	150mm/18AWG	3	Black	150mm/18AWG
	2	Black	150mm/18AWG	4	Red	150mm/18AWG

Connector HOUSING: Easy Plug

HOUSING	Pin No.	WIRE COLOR	LENGTH	Pin No.	WIRE COLOR	LENGTH
PD	1	Yellow / Yellow	500mm/18AWG	3	Black / Black	500mm/18AWG
	2	Black / Black	500mm/18AWG	4	Red / Red	500mm/18AWG
PE	1	Yellow / Yellow	150mm/18AWG	3	Black / Black	150mm/18AWG
	2	Black / Black	150mm/18AWG	4	Red / Red	150mm/18AWG
PF	1	Yellow	150mm/18AWG	3	Black	150mm/18AWG
	2	Black	150mm/18AWG	4	Red	150mm/18AWG

Connector HOUSING: Easy Plug

HOUSING	Pin No.	WIRE COLOR	LENGTH	Pin No.	WIRE COLOR	LENGTH
PG	1	Yellow / Yellow	500mm/18AWG	3	Black / Black	500mm/18AWG
	2	Black / Black	500mm/18AWG	4	Red / Red	500mm/18AWG
PH	1	Yellow / Yellow	150mm/18AWG	3	Black / Black	150mm/18AWG
	2	Black / Black	150mm/18AWG	4	Red / Red	150mm/18AWG
PI	1	Yellow / Yellow	150mm/18AWG	3	Black / Black	150mm/18AWG
	2	Black / Black	150mm/18AWG	4	Red / Red	150mm/18AWG
PJ	1	Yellow	150mm/22AWG	3	Black	150mm/22AWG
	2	Black	150mm/22AWG	4	Red	150mm/22AWG

Connector HOUSING: Easy Plug

HOUSING	Pin No.	WIRE COLOR	LENGTH
PK	1	Orange / Orange	500mm/18AWG
	2	Black / Black	500mm/18AWG
	3	Red / Red	500mm/18AWG
	4	Black / Black	500mm/18AWG
	5	Yellow / Yellow	500mm/18AWG
PL	1	Orange	150mm/18AWG
	2	Black	150mm/18AWG
	3	Red	150mm/18AWG
	4	Black	150mm/18AWG
	5	Yellow	150mm/18AWG

HOUSING: MOLEX 675820000 or equivalent  
 TERMINAL: MOLEX 675810000 or equivalent