



Zecks Power Co., Ltd.

2F, NO.111-33, Sec. 4, San Ho Rd., San Chung City, Taipei, Taiwan, R.O.C.  
Tel: 886-2-22870818 Fax: 886-2-22801351 E-Mail: [zecks@tpts4.seed.net.tw](mailto:zecks@tpts4.seed.net.tw)

# Specification of Redundant ATX Switching Power Supply

⊗ ATX 12V For Pentium 4 ⊗

**Model No. ZKS-450SX-2X**

⌋ Total Wattage 450W + 450W ⌋

Prepared By	Designed By	Approved By	Issued By

## 1. INPUT

1.1 AC Input;  $\ominus$ 5V (90V ~ 135V) ; F230V (180V ~ 265V)

Voltage selector by slide switches

>>> Optional Active PFC 115V / 230V automatic sense <<<

1.2 AC Input Current;  $\ominus$ 5Vrms / 10A ; F230Vrms / 5.5A

(@ without AC Outlet)

1.3 Brown Out Voltage;  $\ominus$ 5VAC max. @ 60Hz.

1.4 Inrush Current;  $\ominus$ 50A max. / 115V , 100A max. / 230V

(at 25 $\circ$  Jambient cold start)

## 2. DC OUTPUT; G

i p p p p p »	V1	V2	V3	V4	V5	V6
Output Voltage	+3.3V	+5V	+12V	-5V	-12V	+5Vsb
Max. Current	30A (I1)	45A (I2)	15A	1A	1A	3A
Min. Current	3.5A	4.5A	1.5A	0A	0A	0.3A
Load Regulation	5%	5%	5%	10%	10%	5%
Line Regulation	1%	1%	1%	2%	2%	1%
Ripple & Noise	50mv	50mv	50mv	150mv	150mv	50mv
i i i i i i -	Total 245W Max.		i i i -	i i i -	i i i -	i i i -

$$(V1 \cdot I1) + (V2 \cdot I2) < 245W$$

Note;  $\ominus$  low pass filter shall be added to outputs during measurement. (EXP.;  $\ominus$ 47uF Tan-cap. & 0.1uF Ceramic-cap.)

## 3. OVERALL PERFORMANCE

3.1 Total Output Power;  $\ominus$ 50W @ 40 $\circ$  J

3.2 Efficiency;  $\ominus$ 70% min. at full load (AC input 230V)

3.3 Power Up Time;  $\ominus$ 20ms for +5V output voltage.

3.4 Hold Up Time;  $\ominus$ 6 ms min.

3.5 Power Good Time;  $\ominus$  The PWR-GOOD signal will not be higher than 100 - 500 ms after the +5V output stabilizes at its operating value when the unit is turn on.

3.6 Power Fail Signal;  $\ominus$  The TTL compatible signal will go down at least 1 ms before +5V below 4.75V

3.7 Switching Frequency;  $\ominus$ 30KHz Typical.

3.8 Temperature coefficient;  $\ominus$ 0.05% per $\circ$  J

3.9 PS on Signal; TTL compatible signal (active low)

#### 4. PROTECTION FEATURES

4.1 Over Voltage Protection; G

DC +3.3V output from 3.8V ~ 4.3V

DC +5V output from 5.7V ~ 7.0V

DC +12V output from 13.4V ~ 15.6V

4.2 Over Load Protection : Total output 120% Min. ~ 160% Max.

4.3 Short Circuit; Catch off

#### 5. ENVIRONMENTAL

5.1 Operation Temperature; 0°C J~ 45°C J(at 75% load, input 230V)

5.2 Cooling; Forced air ventilation by DC fan.

5.3 Fan type; Ball Bearing FAN

5.4 Fan status monitoring; Optional.

5.5 Humidity; 0% ~ 90% RH

5.6 Storage Temperature; -20°C J~ 80°C J

5.7 Storage Humidity; 5% ~ 90% RH

5.8 Altitude; 0,000 ft max.

#### 6. SAFETY APPROVAL

a. UL 1950 / cUL 1950 D3

b. TUV EN60950

c. Nemko 60950

d. CB IEC 60950

e. CE Test Report

#### 7. ELECTROMAGNETIC COMPATIBILITY; G

7.1 Electromagnetic Interference (EMS); G

FCC Part 15, subjecting, class B ; FCISPR-22, class B

7.2 Electrostatic Discharge (ESD); G comply with IEC801-2.

7.3 Radiated Susceptibility (RS); G comply with IEC801-2.

7.4 Harmonics; Meet EN61000-3-2 class A (@ PC system)

>>> Optional Active PFC Harmonics class D at full load <<<

#### 8. DIELECTRIC WITHSTAND ( HI-POT ) TEST

8.1 Primary to Secondary; 000VAC -- 3 Sec. ( 5mA cut - off )

8.2 Primary to Ground; 000VAC -- 3 Sec. ( 5mA cut - Off )

8.3 Leakage Current < 3.5mA at INPUT 230V~ 60Hz

8.4 Ground Continuity;  $\leq 100m\Omega$  ( max. when the test current is at 25A

## 9. INSULATION RESISTANCE

9.1 Input to output;  $\geq 20M\Omega$  ( min.

9.2 Input to Ground;  $\geq 20M\Omega$  ( min.

10. RELIABILITY;  $\geq$  MTBF 100,000 hours @ 25 $^{\circ}$  Jambient.

## 11. SHOCK AND VIBRATION

The power supply will withstand the following imposed conditions without experiencing non-recoverable failure or deviation from specified output characteristics.

Storage –40G, 11mSec. half-sine wave pulse in both directions on three mutually perpendicular axes.

Operating –10G, 11mSec. half-sine wave pulse in both directions on three mutually perpendicular axes.

Vibration Operation-Sine wave excited, 0.25G maximum acceleration, 10 - 250Hz swept at one octave/minute. Fifteen-minute dwell at all frequencies at which the device under test experience excursions two times large than non-resonant excursions.

12. MECHANICAL;  $\approx 2.5 \times 185 \times 153.5$ mm (See drawing)

