

# SPECIFICATION

300W ATX 12V

Active PFC

PS/2 Power Supply

**Model: P6300S FG**



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## 1. SCOPE

This specification defines electrical performance and characteristic of P6300S FG

Full Range series Power supplies which comply with Intel ATX12V v1.3 & AMD Athlon Requirements.

## 2. AC INPUT :

Limits	RANGE <sup>1</sup>		Unit
	Minimum	Maximum	
AC Input voltage	90	264	Vac
AC Input frequency	47	63	Hz
AC Input Current		5	Amp(rms)
Inrush current <sup>2</sup> (cold start)		100	Amp(peak)
Inrush current (warm start)	NO COMPONENT OVER STRESSED.		
	NO FUSE BLOW		
	NO DAMAGE TO THE POWER SUPPLY.		
NOTE: 1. The AC input is 90~264 Vac full range. No selectable hard switch is provided.			
2. Measured at 25 Deg C Ambient			

## 3. DC OUTPUT :

### 3.1 VOLTAGE and CURRENT LOAD RANGES

DC OUPUT		Tolerance
Group1	+3.3VDC	+5%/-5%
	+5VDC	+5%/-5%
	+12VDC	+5%/-5%
	-12VDC	+10%/-10%
Group2	+5Vsb	+5%/-5%

### Load Range 1

Output	Minimum Load	Maximum Load	Peak Load
+12V	5A	18A	20A
+5V	8A	30A	X
+3.3V	8A	28A	X
-12V	0A	0.8A	X
+5Vsb	0A	2A	2.5A

**Load Range 2**

Output	Minimum Load	Maximum Load	Peak Load
+12V	1A	10A	X
+5V	0.5A	20A	X
+3.3V	0.5A	18A	X
-12V	0A	0.5A	X
+5Vsb	0A	1A	X

1. Maximum continuous total DC output power should not exceed 300 W
2. Maximum continuous combined load on +3.3 VDC and +5 VDC outputs should not exceed 200W(46A)
3. Maximum peak total DC output power should not exceed 340 W
4. Peak power and current loading should be supported for a minimum of 1 second

**3.2 OUTPUT RIPPLE and NOISE**

Measurement is made with an oscilloscope with 20 MHz bandwidth. Output should be bypassed at the connector with a 0.1uF ceramic disk capacitor and a 10uF electrolytic capacitor to simulate system load. The length of ground wire on probe should not longer than 40mm, if a Non - differential type of scope was used.

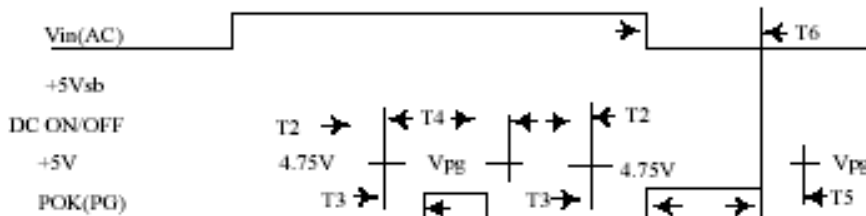
+3.3V	+5V	+12V	-12V	+5Vsb
50mV	50mV	120mV	120mV	50 mV

**3.3 DYNAMIC DC OUTPUT CHARACTERISTICS**

+/-10% Max. (tested with capacitors added at output) Excursion for 30% max. load change with return to regulation in 0.5 mS.

**3.4 DC OUTPUT ON/OFF CONTROL**

A low active PS-ON (DC ON/OFF) input signal is equipped, which provide the interface to **ENABLE** or to **DISABLE** the **GROUP1** of DC output. This signal is electrically compatible to interface with **TTL, OPEN COLLECTOR** and the **HARD SWITCH**.



SIGNAL NAME	MAXIMUM	MINIMUM
T2 +5V TURN-ON DELAY	20 mS	
T3 RESET TIME	500 mS	100 mS
T4 DC SAVE TIME		1 mS
T5 SAVE TIME		1 mS
	$V_{pg} = 4.75V$	
T6 HOLD-ON TIME (AT NOMINAL AC INPUT)		16 mS

#### 4. OUTPUT PROTECTION

##### 4.1 OVER POWER PROTECTION: ( OPP )

Total power 135% max with shut-down and latch off protection.

##### 4.2 OVER VOLTAGE PROTECTION: ( OVP )

OVER VOLTAGEAT	ACTIVE RANGE		RESULT
	Min.	Max.	
+3.3V	3.76V	4.3V	Shut down & Latch OFF The Group 1 DC Output
+5V	5.74V	7.0V	
+12V	13.4V	15.6V	

##### 4.3 SHORT CIRCUIT PROTECTION: ( SCP )

The short between any output of group 1 will shut down all group1.

The short at group 2 will Shut down both group 1 and group 2.

##### 4.4 RESET AFTER SHUTDOWN

Whenever the power supply latches into shutdown state due to fault condition on its output,

The power supply will return to normal operation only after the fault has been removed and the power switch has been cycled off/on with **A MINIMUM OFF TIME OF 20mS.** (PS-ON)

#### 5. POWER GOOD SIGNAL:

Signal Type: open collector +5DC, TTL compatible.

Logic Level: <0.4V while sinking 4 mA.

Logic Level High: between 2.4VDC and +5V output while sourcing 200 uA.

#### 6. EFFICIENCY:

##### 6.1 AT FULL LOAD:

Over 70% at normal input voltage.

74% at AC 115v 60Hz(typical)

77% at AC 230v 50Hz(typical)

##### 6.2 ENERGY STAR MODE

Over 50% at 30W max power consumption with 15W or more delivered to DC power output

### 6.3 STANDBY MODE

During measurement of the "STANDBY MODE" condition, the main converter is off (PS\_ON=High). +5Vsb converter is working and standby input power is measured.

true RMS input power (standby) +5Vsb/ 0.5A; input voltage: 230VAC 50HZ	< 5W
true RMS input power (standby) +5Vsb/ 0A; input voltage: 230VAC 50HZ	< 1.5W

## 7. COOLING OF PSU

A DC FAN was equipped to Cooling The Power Supply and system Load , The FAN will draw in AIR Through The vent Holes in DC Output Cable Side , and Exhaust it in The AC Receptacle Side.

Fan parameters

Rated voltage	12VDC
Dimensions	80*80*25 (mm)
Air flow	34 CFM min.
Noise	<35 dBA

## 8. ACTIVE POWER FACTOR CORRECTION (PFC):

8.1 Harmonic current meets IEC1000-3-2 / EN61000-3-2 standards.

8.2 PFC >0.95 at full load.

0.99 at AC 115v 60Hz(typical)

0.98 at AC 230v 50Hz(typical)

## 9. ENVIRONMENT

### 9.1 OPERATING

Temperature: 0 to 50 °C. (The rated power will derate from 100% to 80% from 40°C to 50 °C Linearly)

Relative Humidity: 20% to 80%

### 9.2 SHIPPING / STORAGE

Temperature: -40 to 85 Deg C

Relative Humidity: 10% to 95%

## 10. MTBF

Over 100,000 hours at 25 Deg C. excluding the DC Fan.

## 11. EMC

Comply to Comply to CE EN55022 , EN55024 , EN61000-6-3 , EN61000-3-2, 2000EN61000-3-3 , EN61000-6-2 , FCC part15,part2,Doc , AS/NZS 3548 , CNS 13438-1997

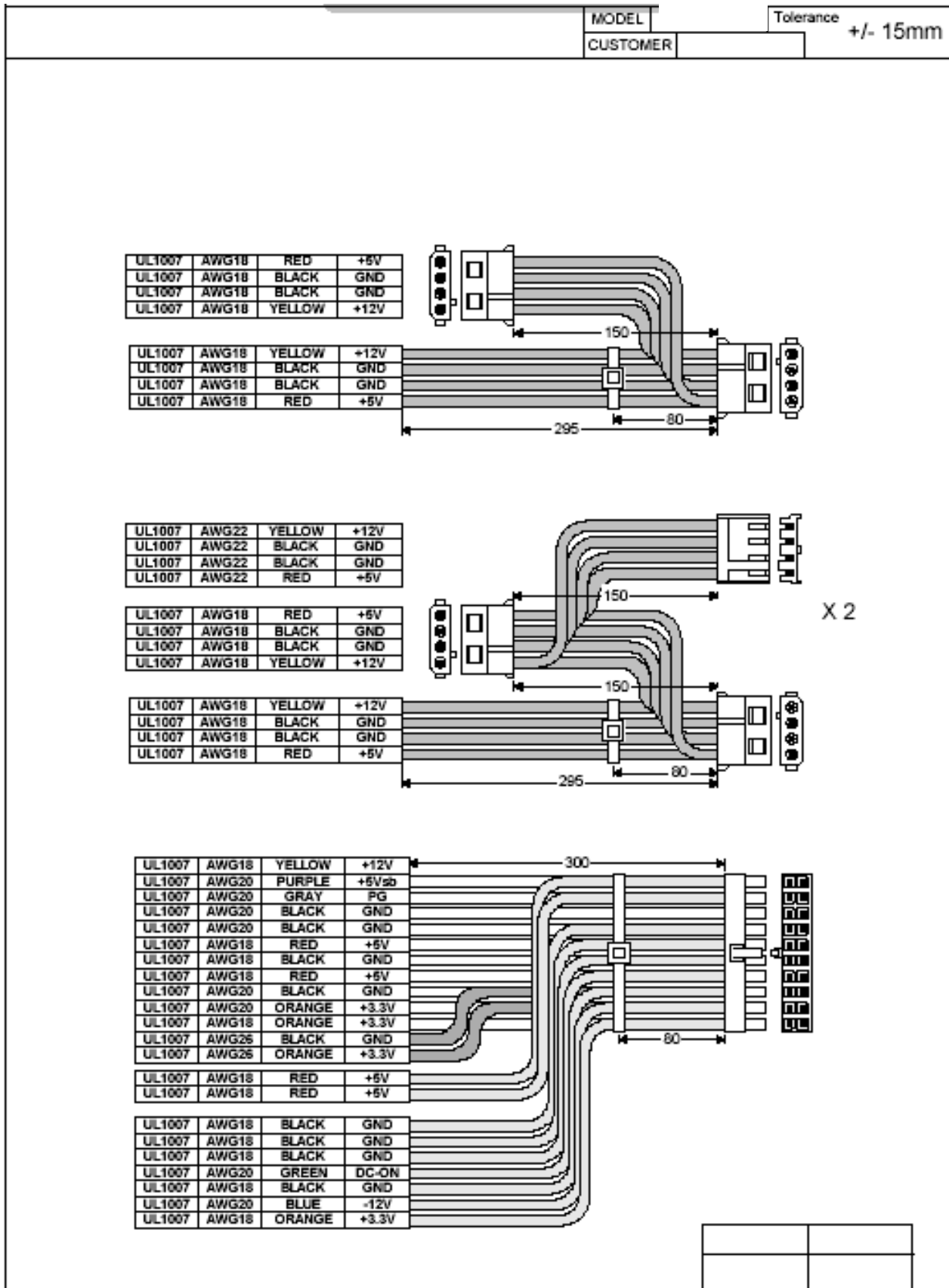
**12. SAFETY:**

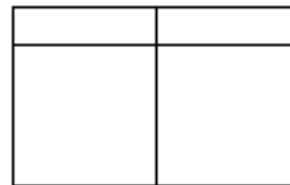
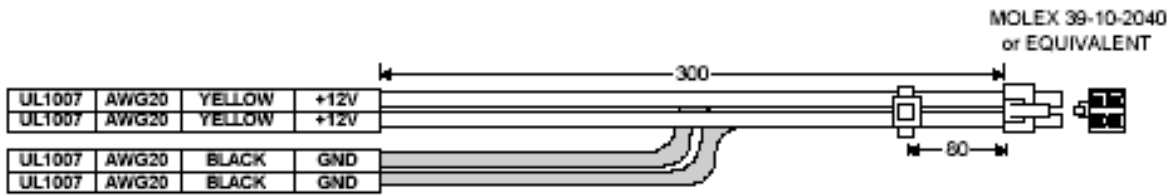
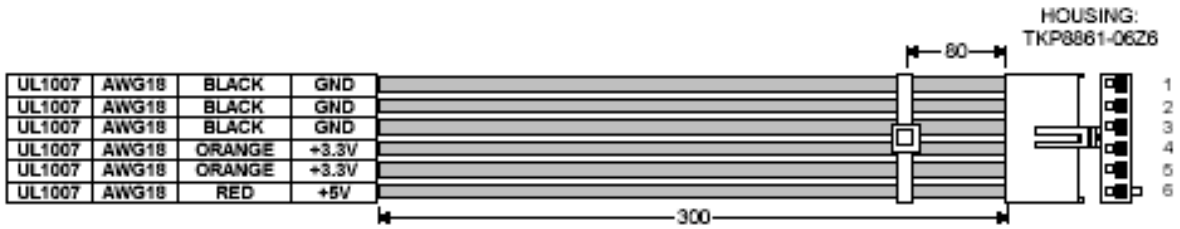
Conform to IEC 60950,IEC 60950-1,EN 60950-1,UL 60950 , CCC:GB 4943-1995,GB 9254-1998,GB 17625-1 -1998; N, D, S, F, CB, VDE,TUV

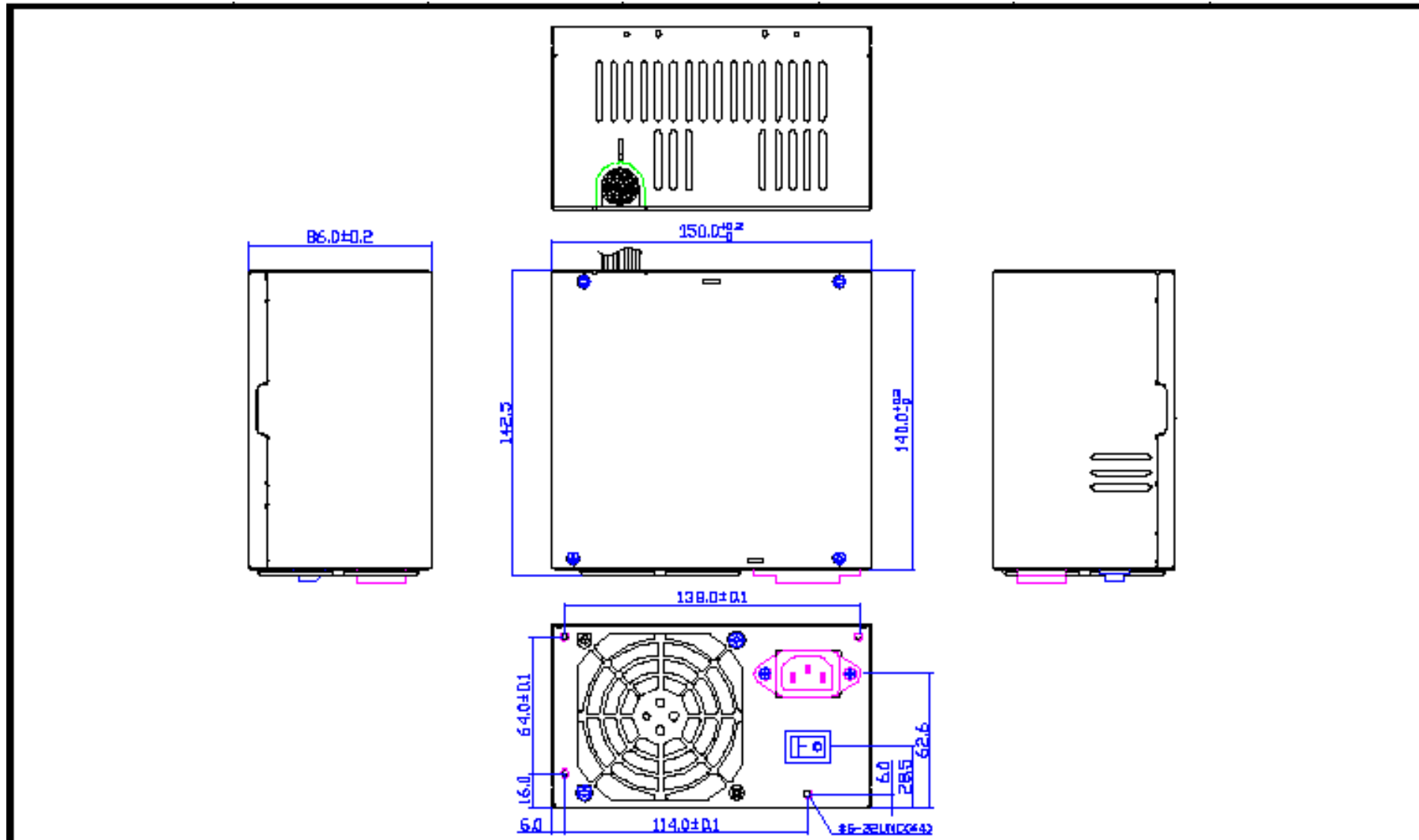
**13. MECHANICAL DRAWING:**

Dimension: 150\*140\*86 mm









DESIGN CHANGE			COMMON TOLERANCE TABLE				Top Microsystems						
ITEM	REASON OF CHANGE	DESCRIPTION	RANGE	CA	CB	CC	CD	FILE NO	GX-ASM	KEY. NO	A1	DEAW BY	Tony
			< 8	±0.05	±0.1	±0.2	±0.4	PART NO		SCALE	1 : 1	APPROVE BY	
			8-20	±0.05	±0.15	±0.2	±0.5	PART NAME	GX-ASM	UNITS	M/M	DATE	09/23/2003
			20-30	±0.12	±0.25	±0.5	±1.0	MODEL NO	GX-F3&T3	MATERIAL	SECC-0.8t	PROJECTION	
			30-40	±0.25	±0.4	±0.8	±1.5	PATH	D:\Tony\Acad\GX\機構圖				
			40-50	±0.3	±0.5	±1.0	±2.0						
			50-2500	±1.0	±1.5	±3.0	±6.0						
			ANGULAR	±0.15°	±0.3°	±0.5°	±0.8°						