

# 規格書

## SPECIFICATION

品名 SWITCHING POWER SUPPLY  
STYLE NAME :

型號 P2G-5650G  
MODEL NO. :

料號  
PART NO. :

版次 A1  
REVISION :

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# Revision

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1.0 Scope

This specification defines the performance characteristics of a grounded, AC input, 650 watts, 5 output level power supply. This specification also defines world wide safety requirements and manufactures process test requirements.

2.0 Input requirements

2.1 Voltage (sinusoidal) : 100~240 VAC full range (With ±10% tolerance).

2.2 Frequency

The input frequency range will be 47hz~63hz.

2.3 Steady-state current

10A/5A at any low/high range input voltage.

2.4 Inrush current

50/100Amps @ 115/230 VAC (at 25 degrees ambient cold start )

2.5 Power factor correction

The power supply shall incorporate universal power input with active power factor correction, which shall reduce line harmonics in accordance with the IEC61000-3-2 standards.

PFC can reach the target of 95% @115V and 90% @230V, Full load.

3.0 Output requirements

3.1 DC load requirements

Normal Output voltage	Load current(A)		Regulation tolerance	
	Min.	Max.	Max.	Min.
+5V	0.5A	25A	+5%	-5%
+12V	2A	53A	+5%	-5%
-12V	0A	0.5A	+5%	-5%
+3.3V	0.5A	25A	+5%	-5%
+5Vsb	0.05A	3A	+5%	-5%

\* +5V and +3.3V total output max : 160W \*\*\*

\*\* +5V,+3.3V and +12V total max:630W \*\*\*

\*\*\* Total power:650W

### 3.2 Regulation

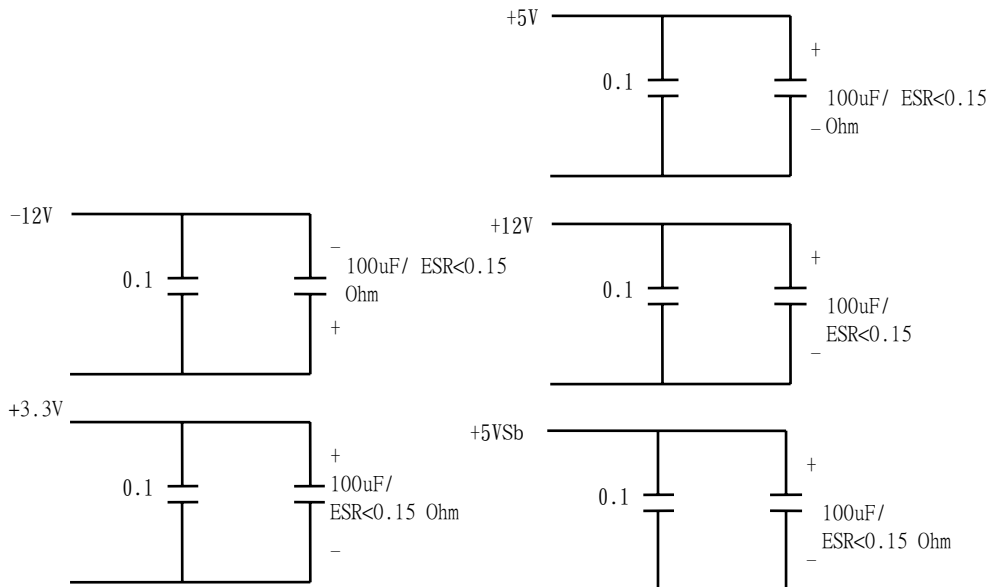
Output DC voltage	Line regulation
+5V	±50mV
+12V	±120mV
-12V	±120mV
+3.3V	±50mV
+5Vsb	±50mV

### 3.3 Ripple and noise

#### 3.3.1 Specification

Parameter	Ripple	Ripple+Noise
+5V	50mV (P-P)	60mV (P-P)
+12V	120mV (P-P)	120mV (P-P)
-12V	120mV (P-P)	120mV (P-P)
+3.3V	50mV (P-P)	60mV (P-P)
+5Vsb	50mV (P-P)	60mV (P-P)

#### 3.3.2 Ripple voltage test circuit



0.1uF is ceramic the other is tantalum.

Noise bandwidth is from DC to 20MHz

### 3.4 Overshoot

Any overshoot at turn on or turn off shall be less 12% of the nominal voltage value , all output shall be within the regulation limit of section 3.2 before issuing the power good signal of section 6.0.

3.5 Efficiency

Power supply efficiency typical 87-90% at 115V FULL LOAD

3.6 Typical Distribution of Efficiency

20% Max load, Efficiency test condition @ Ambient temperature 30 degrees							
Voltage	+12V	+5V	-12V	+3.3V	+5VSB	AC INPUT Voltage	
						115V	230V
Load	8.4A	3.07A	0.08A	3.07A	0.48A	>87%	>88%
50% Max load, Efficiency test condition @ Ambient temperature 30 degrees							
Voltage	+12V	+5V	-12V	+3.3V	+5VSB	AC INPUT Voltage	
						115V	230V
Load	21.1A	7.7A	0.2A	7.7A	1.2A	>90%	>90%
100% Max load, Efficiency test condition @ Ambient temperature 30 degrees							
Voltage	+12V	+5V	-12V	+3.3V	+5VSB	AC INPUT Voltage	
						115V	230V
Load	42.2A	15.3A	0.4A	15.3A	2.4A	>87%	>89%

P.S:

Any difference either on the DC output cable (i.e., length, wire gauge) or on the accurate of instruments will conclude different test result.

4.0 Protection

4.1 Input (primary)

The input power line must have an over power protection device in accordance with safety requirement of section 8.0

4.2 Output (secondary)

4.2.1 Over power protection

The power supply shall provide over power protection on the power supply latches all DC output into a shutdown state. Over power of this type shall cause no damage to power supply , after over load is removed and a power on/off cycle is initiated , the power supply will restart.  
Trip point total power min. 110% , max. 160%.

4.2.2 Over voltage protection

If an over voltage fault occurs , the power supply will latch all DC output into a shutdown state.

	Min	Typical	Max
+3.3V	3.6V	4.1V	4.3V
+5V	5.6V	6.1V	6.5V
+12V	13.2V	14.3V	15.0V

4.2.3 Over current protection

If an over current fault occurs , the power supply will latch all DC output into a shutdown state.

	Min	Typical	Max
+3.3V	27.5A	32.5A	40A
+5V	27.5A	32.5A	40A
+12V	58.3A	71.5A	84.8A

4.2.4 Short circuit

A: A short circuit placed on any DC output to DC return shall cause no damage.

B: The power supply shall be latched in case any short circuit is taken place at +5V,+3.3V,+12V ,-12Voutput.

C: The power supply shall be auto-recovered in case any short circuit is taken place at +5VSB.

5.0 Power supply sequencing

5.1 Power on (see Fig.1)

5.2 Hold up time

When AC source shutdown DC output must be maintain 16msec in regulation limit at. normal input voltage (AC115V)

5.3 Power off sequence (see Fig. 1)

6.0 Signal requirements

6.1 Power good signal (see Fig. 1)

The power supply shall provide a "power good" signal to reset system logic , indicate proper operation of the power supply.

At power on , the power good signal shall have a turn on delay of at least 100ms but not greater than 500ms after the output voltages have reached their respective minimum sense levels.

7.0 Environment

7.1 Temperature

Operating temperature: 0 to 50 degrees centigrade(90~264 VAC)

Non-Operating temperature: -20 to 80 degrees centigrade

7.2 Humidity

Operating humidity 20% to 80%

Non-operating humidity 10% to 90%



7.3 Insulation resistance

Primary to secondary : 100 meg. Ohm min. 500 VDC  
Primary to FG : 100 meg. Ohm min. 500VDC

7.4 Dielectric withstanding voltage

Primary to secondary : 3K VAC for 60 Second.  
Primary to FG : 1500 VAC for 60 Second.

7.5 Leakage current

3.5 mA max. at nominal voltage VAC

8.0 Safety

8.1 Underwriters laboratory (UL).

The power supply designed to meet UL 60950.

8.2 Canadian standards association (CUL)

The power supply designed to meet CSA 1402C & CSA 950.

8.3 TUV

The power supply shall be designed to meet TUV EN-60950.

8.4 CCC Standards

The power supply shall be designed to meet GB4943-1995,GB9254-1998,  
GB17625.1-1998.

9.0 Reliability

9.1 Burn in

All products shipped to customer must be processed by burn-in. The burn- in shall be performed for 1 hour at full load.

10.0 Mechanical requirements

10.1 Physical dimension : 240mm (D) x 100mm (W) x 70mm (H)

