

# 規格書

## SPECIFICATION

品名 SWITCHING POWER SUPPLY

STYLE NAME :

型號 P2G-6460P


MODEL NO. :

料號

PART NO. :

版次 A4

REVISION :

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# Revision

Rev.	Page	Item	Date	Description
A2	4	2.3	OCT-09-2001	Update input voltage
A3	4	2.5	DEC-19-2002	Add the description of 2.5 power factor
A3	4	3.1	DEC-19-2002	Update +12V Current Rating
A3	6	4.2.3	DEC-19-2002	Update +12V Current Rating
A4	7	7.1 7.2	DEC-25-2009	Add Non-Operating temperature Add 7.2 Humidity

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## 1.0 Scope

This specification defines the performance characteristics of a grounded, Ac input, 460 watts, 6 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) : 90~264 VAC full range.

### 2.2 Frequency

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

### 2.3 Steady-state current

8.0/4.0A at any low/high range input voltage.

### 2.4 Inrush current

55/110 Amps @ 110/220 VAC

### 2.5 Power factor correction

PFC can reach the target of 95% @115, full load, following the standard of ICE 1000-3-2

## 3.0 Output requirements

### 3.1 DC load requirements

Normal Output voltage	Load current(A)		Regulation tolerance	
	Min.	Max.	Min.	Max.
+5V	5.0	33.0	-5%	+5%
+12V	2.5	25.0	-5%	+5%
-5V	0.05	0.8	-5%	+5%
-12V	0.1	1.0	-5%	+5%
+3.3V	1.0	28.0	-5%	+5%
+5Vsb	0.1	2.0	-5%	+5%

\*\*\* +5V and +3.3V total output max : 45A \*\*\*

\*\*\* +5V,+3.3V and +12V total output max : 435W \*\*\*

When doing the cross regulation test(one output channel at high load and the other output channels at low load), it is requested to set the higher output channel at 90% max. of its spec., and the lower output channels at 20% min. of theirs.

### 3.2 Regulation and protection

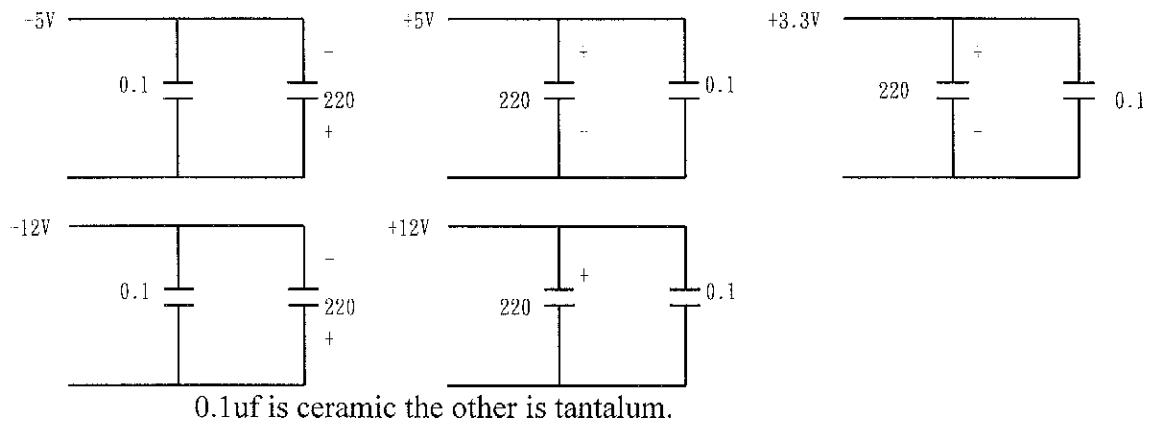
Output DC voltage	Line regulation	Load regulation	Cross regulaion
+5V	±50mV	±250mV	±250mV
-5V	±50mV	±250mV	±250mV
+12V	±50mV	±600mV	±600mV
-12V	±50mV	±600mV	±600mV
+3.3V	±50mV	±165mV	±165mV
+5Vsb	±50mV	±250mV	±250mV

### 3.3 Ripple and noise

#### 3.3.1 Specification

+5V	Ripple 60mV, Noise 80Mv
+12V	100mV (P-P)
-5V	120mV (P-P)
-12V	150mV (P-P)
+3.3V	50mV (P-P)
+5Vsb	60mV (P-P)

#### 3.3.2 Ripple voltage test circuit



#### 3.4 Overshoot

Any overshoot at turn on or turn off shall be less 15% 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 71% at 115V , full load.

### 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. 150%.

#### 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	3.9V	4.1V	4.3V
+5V	5.7V	6.1V	6.5V
+12V	13.6V	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	30.8A	36.4A	42A
+5V	36.3A	42.9A	49.5A
+12V	35.2A	41.6A	48A

#### 4.2.3 Short circuit

A short circuit placed on +5V,+3.3V,+12V,-5V,-12V output to DC return shall cause no damage and power supply latch.

### 5.0 Power supply sequencing

#### 5.1 Power on (see fig.1)

#### 5.2 Hold up time

When power shutdown DC output 5V must be maintain 16msec in regulation limit at full load under 90VAC input voltage.

#### 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 Operation

Temperature 0 to 40 degrees centigrade  
 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 : 30 meg. Ohm min. 500 VDC
  - Primary to FG : 30 meg. Ohm min. 500VDC
- 7.4 Dielectric withstanding voltage
  - Primary to secondary : 1800 VAC for 60 Second.
  - Primary to FG : 1800 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.

9.0 Reliability

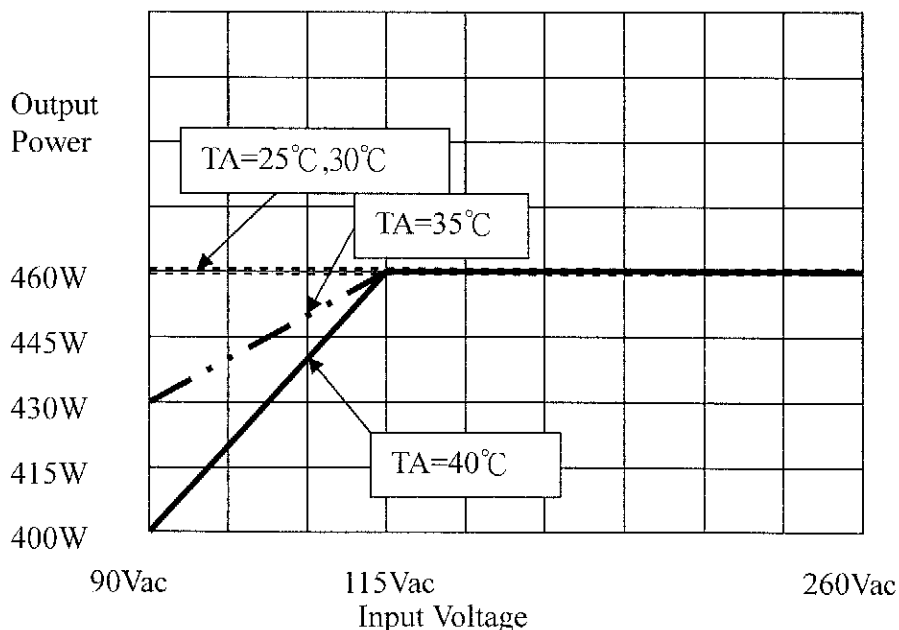
- 9.1 Burn in  
All products shipped to customer must be burn in. The burn in shall be performed at high line voltage.

10.0 Mechanical requirements

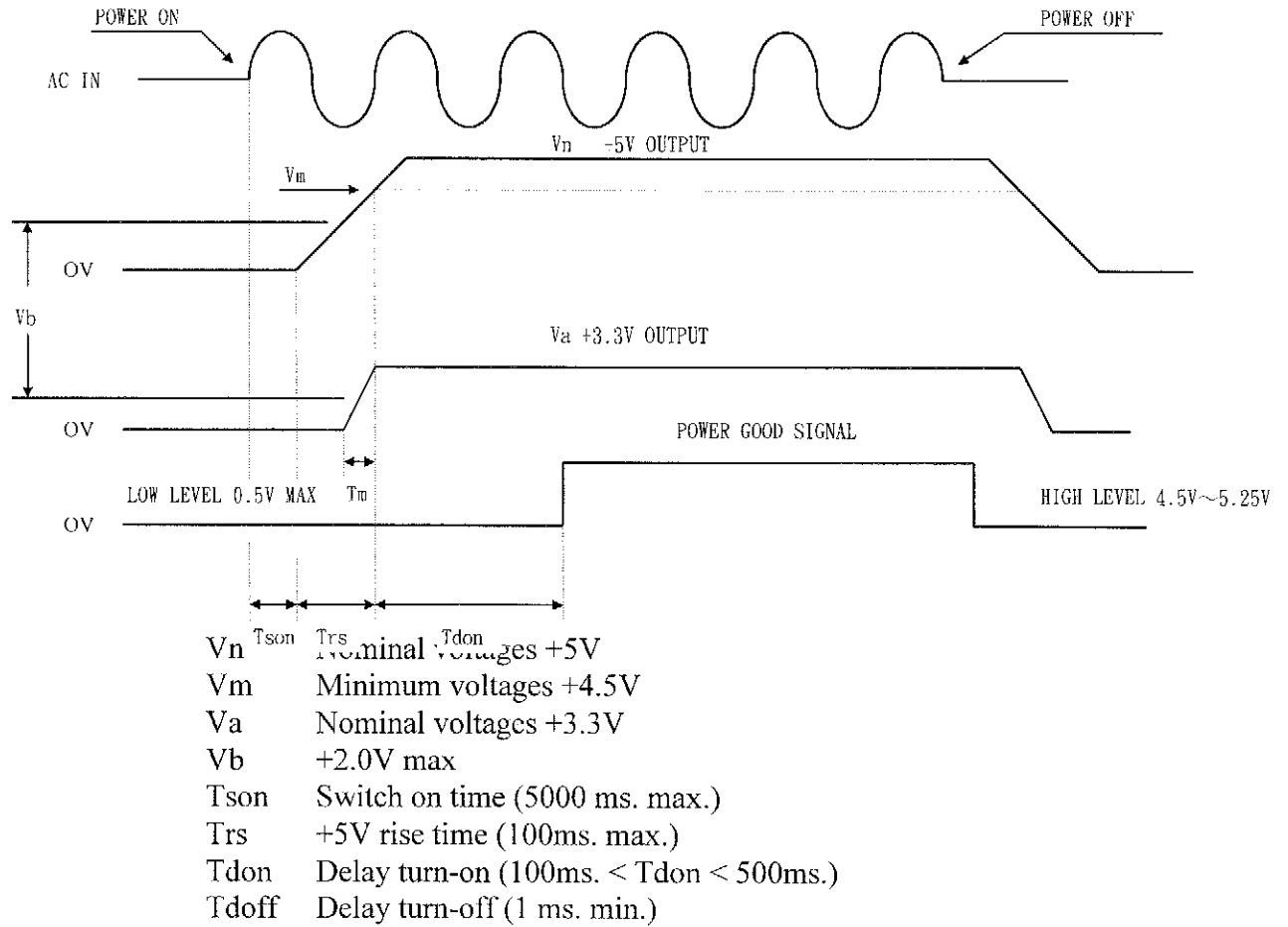
- 10.1 Physical dimension : 240 mm(D) \* 100 mm(W) \* 70 mm(H)

11.0 Output power derating characteristics

Output Power Derating Characteristics







《Figure 1》