規格書
SPECIFICATION

品名 STYLE NAME：SWITCHING POWER SUPPLY

型號 MODEL NO.：P1S-5180V

料號 PART NO.：

版次 REVISION：A7

APPROVE 核准	張銘燃 DEC.09.2009	正式資料用章	正式資料 DEC 09 2009 研發本部
CHECK BY 審核	王英偉 DEC.09.2009		
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Revision

Rev.	Page	Item	Date	Description
A2	9	10.0	2008/08/27	Physical dimension : 81.5mm(D) * 150mm(W) *40.3mm(H)
A3	8	5.2	2008/12/22	Hold up Time spec. change to 20ms
A4	5	3.1	2009/05/05	+12V MIN. Load change to 0.3A
A4	5	2.3	2009/05/05	2.5A/1A at any low/high range input voltage.
A4	8	7.1	2009/05/05	Operating temperature: 0~40 Degree
A4	7	4.2.1	2009/05/05	OPP change to 110%~170%
A5	5	3.1.4	2009/10/19	Derating curve modify
A5	8	7.1	2009/10/19	Operating temperature update : 0~50 Degree
A6	5-6	3.0	2009/10/30	Add -5V output load requirement description
A7	9 10	8.0 10.0	2009/12/9	Update safety Physical dimension : 150mm(D) * 81.5mm(W) *40.3mm(H)

MODEL NO.P1S-5180V

1.0 Scope

This specification defines the performance characteristics of a grounded, AC input,180 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) : 90～264 VAC full range.

2.2 Frequency

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

2.3 Steady-state current

2.5A/1A at any low/high range input voltage.

2.4 Inrush current

35/70Amps @ 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% @115/230VAC,Full load.

3.0 Output requirements

3.1 DC load requirements

Normal	Load current(A)		Regulation tolerance	
Output voltage	Min.	Max.	Max.	Min.
+5V	0A	14A	+5%	-5%
+12V	0.3A	14A	+5%	-5%
-12V	0A	0.3A	+10%	-10%
+3.3V	0A	12A	+5%	-5%
+5Vsb	0A	2.5A	+5%	-5%
-5V	0A	0.3A	+5%	-5%

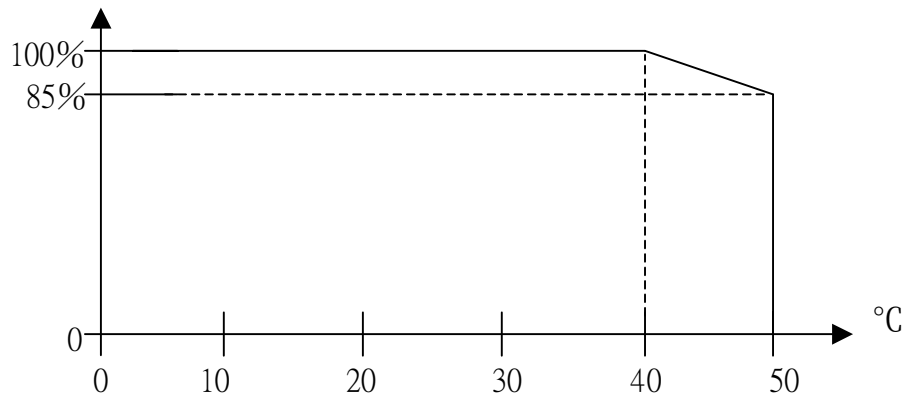
*-5V is option and we did not put -5V in our standard model.

3.1.1 +5V and +3.3V total output max : 70W

3.1.2 +5V ,+3.3V ,+12V,-12V total output max : 168W

3.1.3 Total power:180W

3.1.4 Power output derating curve : Total power - Temperature



3.2 Regulation

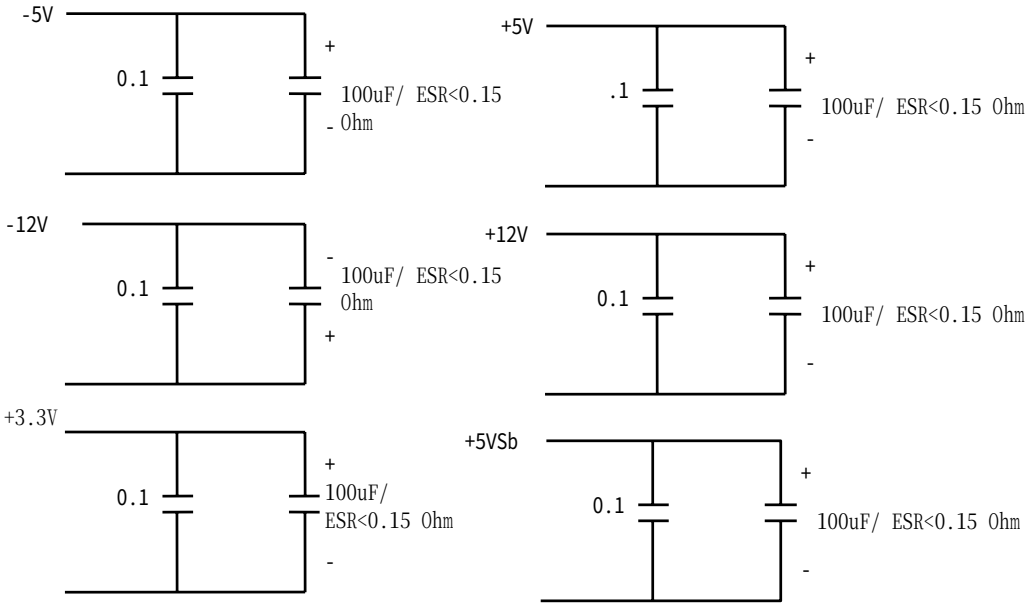
Output DC voltage	Line regulation
+5V	±50mV
+12V	±120mV
-12V	±120mV
+3.3V	±50mV
+5Vsb	±50mV
-5V	±100mV

3.3 Ripple and noise

3.3.1 Specification

+5V	50mV (P-P)
+12V	120mV (P-P)
-12V	120mV (P-P)
+3.3V	50mV (P-P)
+5Vsb	50mV (P-P)
-5V	100mV (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 10% 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 80%(+/-2%) at 230Vin and Load condition : 12V/9.92A;5V/6.33A;3.3V/5.43A;-12V/0.21A;5Vsb/1.77A

3.6 Typical Distribution of Efficiency

AC 115V FULL LOAD(100%)					
Output	+5V	+3.3V	+12V	-12V	5VSB
Load Current	6.33A	5.43A	9.92A	0.21A	1.77A
Voltage(Rms)	5.11V	3.34V	12 V	-12V	4.97V
P in(AC in 115V)	230.2W				
EFF.	80.01%				

AC 230V FULL LOAD(100%)					
Output	+5V	+3.3V	+12V	-12V	5VSB
Load Current	6.33A	5.43A	9.92A	0.21A	1.77A
Voltage(Rms)	5.1V	3.34V	12.11V	-11.8V	5.09V
P in(AC in 230V)	223.6W				
EFF.	82.2%				

P.S: 1.Anydifference either on the DC output cable (i.e., length, wire gauge) or on the accurate of instruments will conclude different test result.

2.Efficiency calculation: When calculating output power, internal fan current shall be included with 12V output current.

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. 170%.

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 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 20msec 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 550ms 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) Please refer to PAGE 5 Power output derating curve.
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 264VAC.

8.0 Safety

The power supply must be certified to the safety standard listed following:

8.1 UL & CUL

Recognized to U.S. and Canadian requirements under the component recognition program of Underwriters Laboratories Inc.
The power supply shall be designed to meet UL 60950.

8.2 TUV

TUV meet TUV EN-60950.
CB meet IEC-60950.

8.3 CCC

Certificate for China compulsory product certification
GB4943-2001,GB9254-1998,GB17625.1-2003

8.4 Power Line Transient.

The power supply shall be designed to meet the following standards

1. EN 61000-4-2(ESD) Criterion B, ± 4KV by contact, ± 8KV by air.
2. EN 61000-4-4(EFT) Criterion B, ± 1KV.
3. EN 61000-4-5(SURGE) Criterion B, Line-Line ± 1KV
   Line-Earth ± 2KV.

8.5 RFI / EMI Standards

The power supply shall comply with the following radiated and conducted Emissions standards,

1. FCC part 15. class B.
2. CISPR 22 (EN 55022:2006). class B

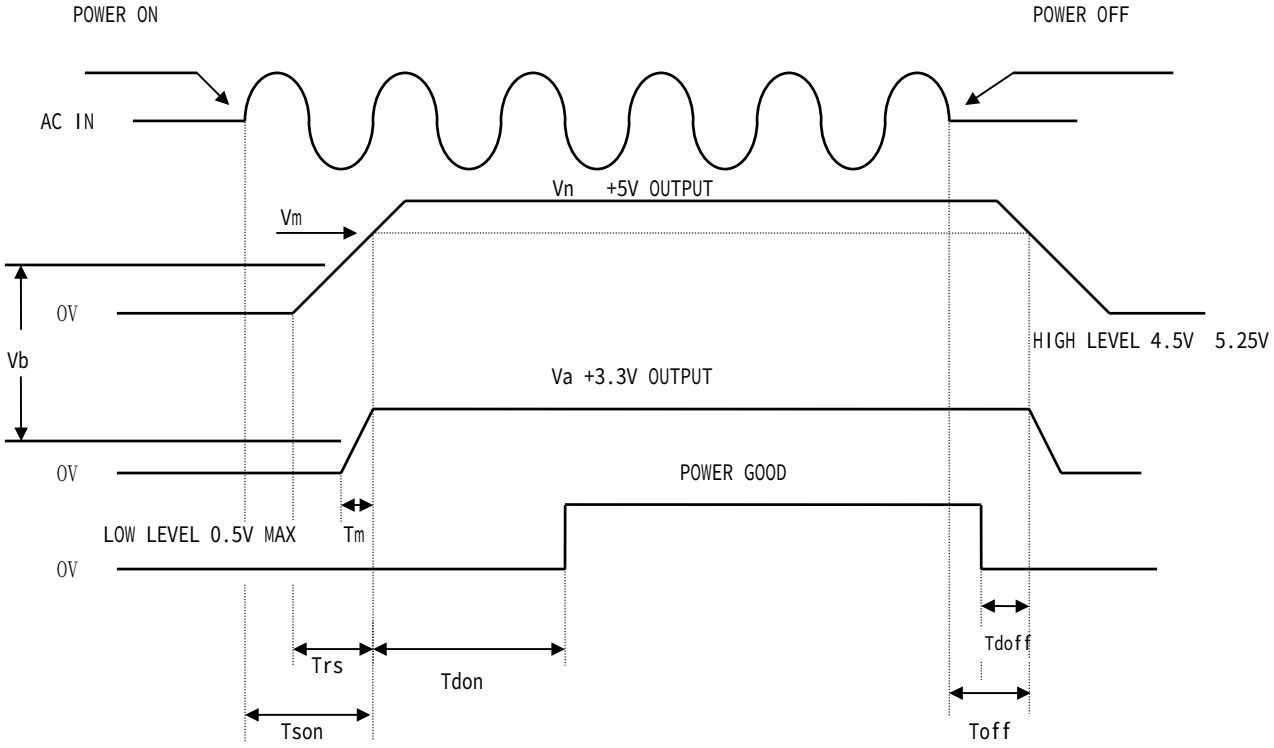
9.0 Reliability

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 : 150mm mm(D) *81.5 (W) *40.3mm(H)



Vn	Nominal voltages +5V
Vm	Minimum voltages +4.5V
Va	Nominal voltages +3.3V
Vb	+2.0V max
Tson	Switch on time (2000 ms. max.)
Trs	+5V rise time (50ms. max.)
Tdon	Delay turn-on (100ms. < Tdon < 550ms.)
Tdoff	Delay turn-off (1 ms. min.) at 115V
Toff	Hold up time (16ms Min) at 115V full load
Tm	Delay time off +3.3V (1 ms. min.)

《Figure 1》