全漢企業股份有限公司
FSP Technology Co.,Ltd.

台灣 桃園市建國東路 22 號
NO.22,jianguo E,Rd.,Taoyuan City, Taiwan,R.O.C.
TEL:+886-3-375-9888 FAX:+886-3-375-6966

SPECIFICATION

FSP 045-1S35-05

R&D	CHECK	APPROVED	REV.
JOGE			01

The Spec. Change List

Item	Revision	Descriptions	Date
1	1	Initial spec. release.	3/19’2012

1. SCOPE

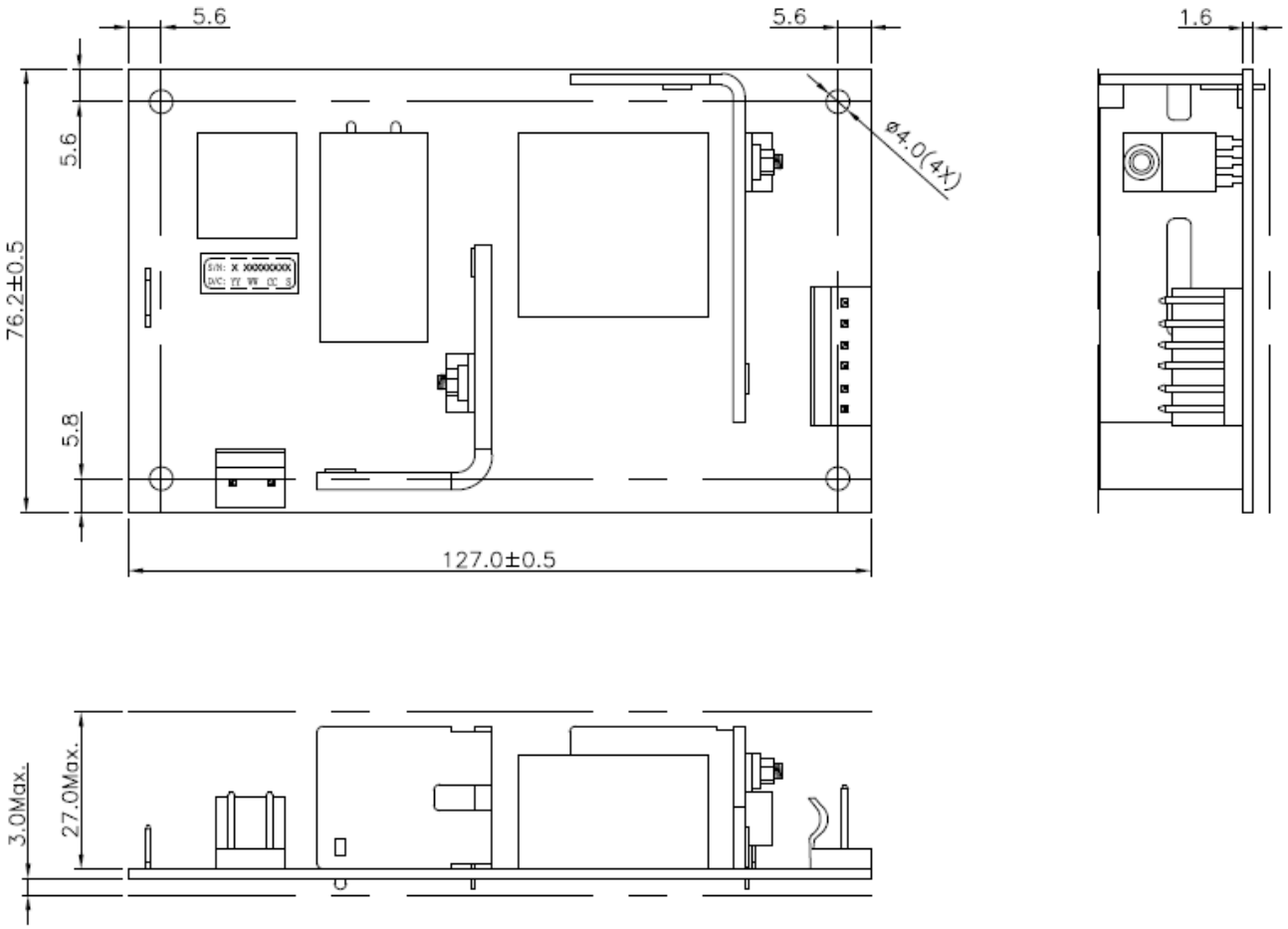
The FSP045-1S35-05 is a 45 Watts Single Output, **Full range input** switching power supply, which power saving function, which could use on many kinds of products .

2. MECHANICAL REQUIREMENTS

2.1 Power supply Dimension Constraints

127.0(L) *76.2(W) * 27.0(H)(Height above the PCB) mm.

Note : Detail mechanic dimension please check the outline drawing.



2.2 Power Supply Connectors

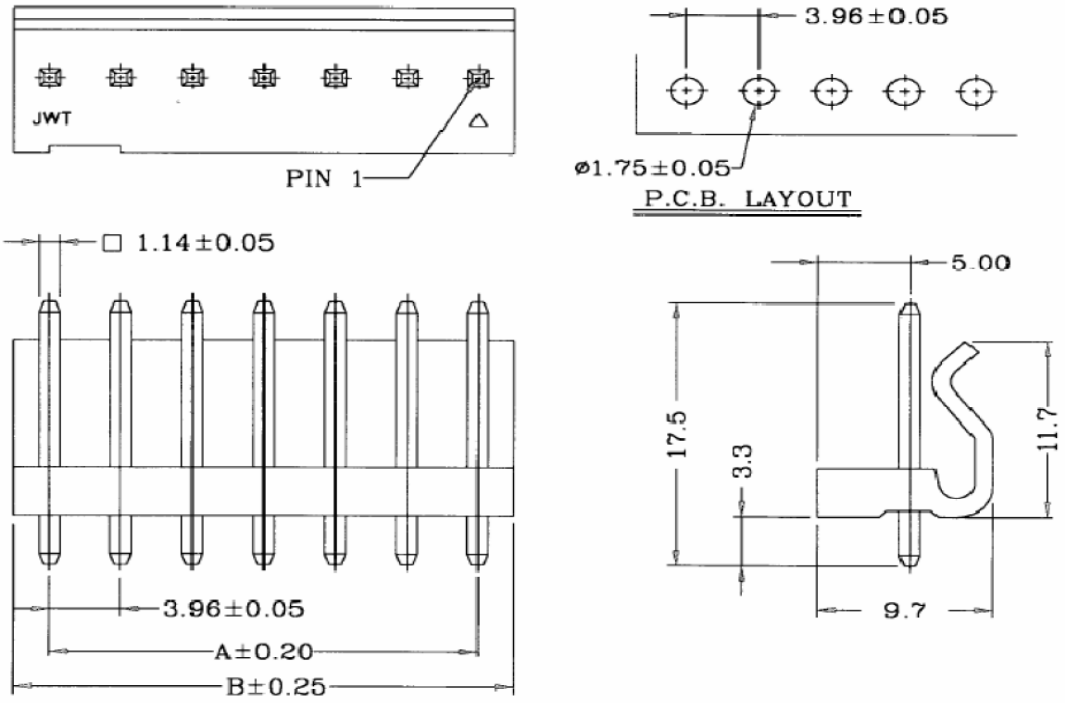
Output Pin-Out

Pin assignment

Pin number	Output Name	Wire Color	Wire AWG
1	+5V		
2	+5V		
3	+5V		
4	GND		
5	GND		
6	GND		

Note: connector spec. list below.

Material: *Insulator:Nyion 66 UL94V-2
*Contact: 1.14mm Tin Plated Square Pin

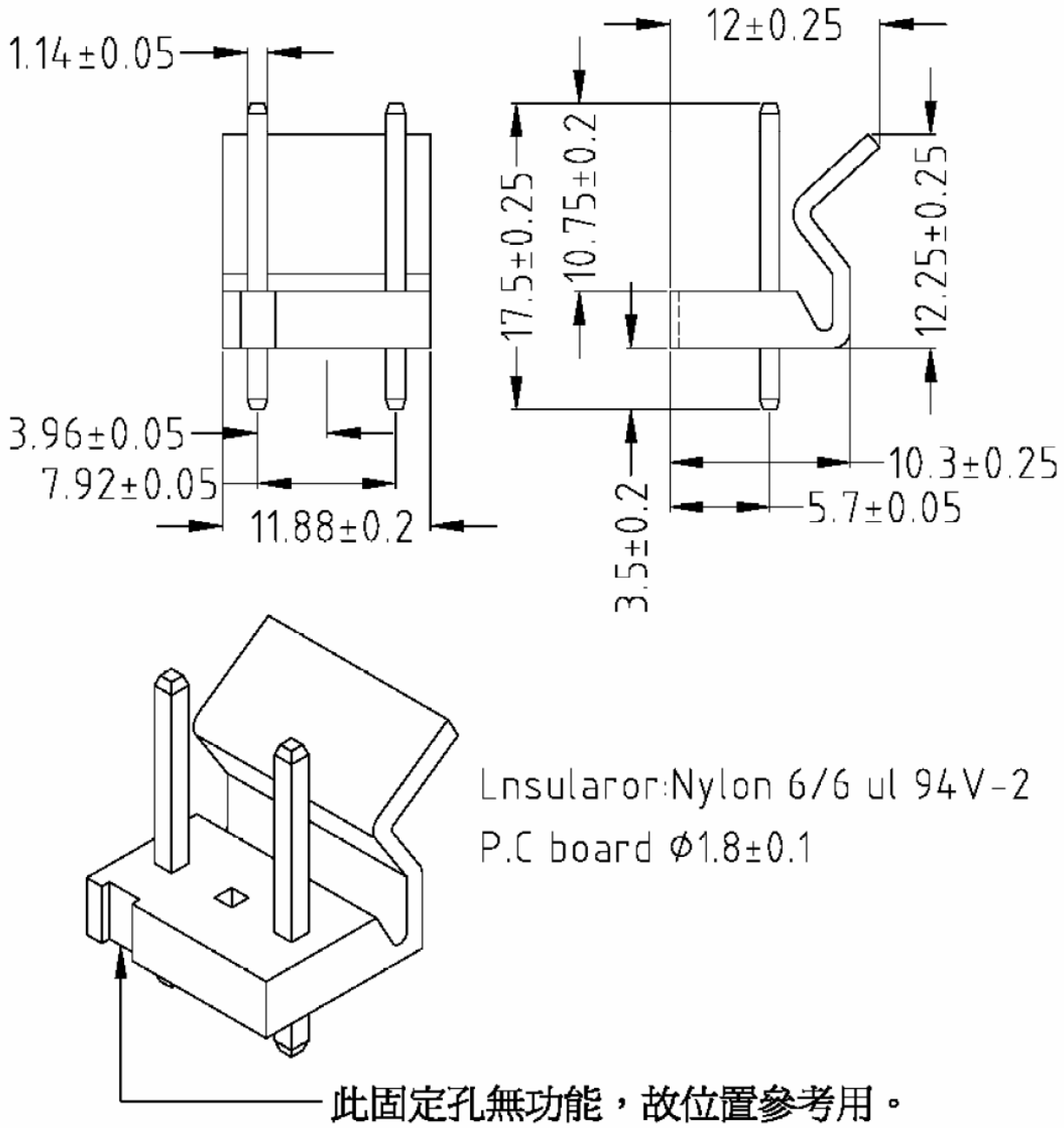


Dimensional & Ordering Information:

Circuits	Part No	Dimensions A	Dimensions B	PCS/BAG
2	A3961WV2-2P	3.96	7.92	1000
3	A3961WV2-3P	7.92	11.88	1000
4	A3961WV2-4P	11.88	15.84	1000
5	A3961WV2-5P	15.84	19.80	1000
6	A3961WV2-6P	19.80	23.76	1000
7	A3961WV2-7P	23.76	27.72	500
8	A3961WV2-8P	27.72	31.68	500
9	A3961WV2-9P	31.68	35.64	500
10	A3961WV2-10P	35.64	39.60	300
11	A3961WV2-11P	39.60	43.56	300
12	A3961WV2-12P	43.56	47.52	200
13	A3961WV2-13P	47.52	51.48	200
14	A3961WV2-14P	51.48	55.44	200
15	A3961WV2-15P	55.44	59.40	200

AC Input Pin

Pin number	Output Name	Wire Color	Wire AWG
1	LINE		
2	NC		
3	NEUTRAL		



3. ELECTRICAL REQUIREMENTS

3.1 Input AC

3.1.1 Input voltage

Minimum	Nominal	Maximum	Unit
90	**110 / 220**	**264**	VAC

3.1.2 Input Frequency

Min	Nominal	Max	Unit
47	50 / 60	63	Hz

3.2 Output voltages and loads

Output voltage was measured at the load end of connected cables.

Table.1 SMPS load and regulation limits.

Signal Name	**Voltage (Volts)**				**Current (A)**	
	Min	Typ	Max		I max.	I min..
+5V	4.75	5.00	5.25	+/-5%	9.0	0.0

Note:

1. The output voltage shall keep within the following limits under all of load conditions, input line conditions and temperature variation.

3.3 Ripple and Noise

3.3.1 Ripple and Noise required specification

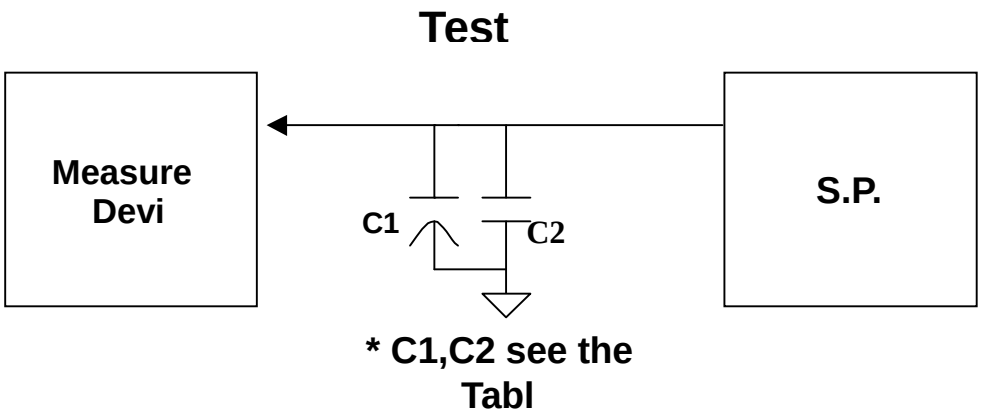
Table.2 lists the Ripple and Noise limitations of switching power supply unit only under all operating conditions including the input line voltage range and over all the full load range.

Table.2 Ripple and Noise Limitations

Signal Name	**Ripple & Noise (mV)**
+5V	70

Note:

1. The measuring is done by 20MHz bandwidth limited oscilloscope while operating at loads between minimum to maximum load rating.
2. While test ripple noise of the output the probe shall avoid any coupling from other circuit or equipment .or the test result will not show power supply's actual ripple / noise.
3. Output shall be by passed at connector with C1 10uF/50V electrolytic capacitor and C2 0.1uF/50V ceramic disk capacitor.



3.4 Protection

3.4.1 Over voltage protection

When fault condition in feedback circuit cause power supply output voltage rise. The over voltage protection will shut down the power.

Signal Name	Upper Limit	Protection Condition
+5V	9V	Latch

3.4.2 Short circuit protection

Each DC output shall have short circuit protection. A short condition on any of DC outputs shall cause **no damage** to the power supply. The unit shall recover and function automatically as soon as the short condition is removed.

3.4.3 Fuse protection

The Fuse inside the power supply shall open when the AC input current is over the rated current of fuse. This Fuse protection will cause switching power supply to fail.

3.5 Efficiency

Efficiency: >85 % in AC input 220V/50Hz and max. load.

No load power consumption: 0.3Watts under AC 220V input

Note: Power supply shall burn in at least 3 min. to get the correct data of efficiency.

3.6 Hold up

The power supply shall maintain voltage regulation within the specified limits in table 1 for at least **20.0** milliseconds after losing of input voltage under the following conditions:

Input voltage: 220Vac

Loading: max output load

3.7 Mean Time Between Failure (MTBF)

100,000 hrs at 25℃ centigrade when calculated using MIL-HDBK-217F. The VENDOR can use agreed upon F.I.T. (failure – in - time) number in place of MTBF.

3.8 Feedback reliability

The power supply feedback circuit system shall be test under all the line and load condition .For the reliability consideration the gain margin shall be large 6db or phase margin large than 45 degree.

That's mean if power supply meet the spec. describe above the feedback loop is in stably condition. There is no any oscillation phenomenon will occur.

4. ENVIRONMENTAL REQUIREMENTS

4.1 Operating Temperature

Power operating	0°C to +50 °C
Storage	-20℃ to +65 °C

Note: Thermal test must be done at nom. AC and at I max. load.

4.2 Humidity (Non-condensing)

Operating	0% to 90% RH
Storage	5% to 95%

4.3 Hi-pot test

100% Hi-pot tested, Primary to second: 4242VDC 3 Second

5. INTERNATIONAL STANDARDS

5.1 EMI standards

Designed to meet the following conducted & radiation limits: CISPR 22 Class B

5.2 EMS standards

- 5.2.1 Electrostatic Discharge Immunity Test: IEC-1000-4-2

  ±4KV Contact Discharge

  ±8KV Air Discharge

- 5.2.2 Surge Immunity Test : IEC-1000-4-5 Criteria B

  Line to line: ±1KV

  Line to earth: ±2KV

  Each phase applies 5 times and keeps 35sec at least.

- 5.2.3 EFT/Burst Immunity Test: IEC-1000-4-4 1KV, Criteria B

5.3 Safety Compliance

IEC60950

IEC60065

5.4 RoHS Compliant

All the component of the power supply have to be RoHS compliant.