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# SPECIFICATION



ESD09014162

FSP150-5DD01

Released Date:2009/3/16-10:42:37

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# SPECIFICATION

## FSP150-5DD01

## (9OCXXXXXXX)

DATE: DEC,30, 2008

REV：1

表單編號：7000P－0105

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## 1. GENERAL DESCRIPTION AND SCOPE

This is the specification of Model FSP150-5DD01; DC-DC open frame switching power supply designed and manufactured by FSP GROUP.
This specification describes a 150watts DC-DC powered switch power supply.
With + 5V stand-by , remote ON/OFF control for ATX system.

## 2.0 INPUT REQUIREMENTS

### 2.1 INPUT VOLTAGE RANGE

| PARAMETER | MIN | NOM | MAX | UNITS |
|---|---|---|---|---|
| V-in Range | 11.8 | 12 | 12.6 | Vdc |

### 2.2 INPUT LINE CURRENT

| | |
|---|---|
| 12Vdc | 13.5Amps – rms maximum |

### 2.3 EFFICIENCY

| | |
|---|---|
| 12Vdc@Full Load | 88%minimum |

### 2.4 INPUT OVER VOLTAGE PROTECTION

When Input voltage exceed 14.2Vdc, the open frame shall shut down. The power supply shall return to normal operation only after the fault is removed and PS/ON has been cycled OFF/ON.

## 3. OUTPUT REQUIREMENTS

### 3.1 OUTPUT VOLTAGE AND CURRENT

| M | INIMUM LOAD | NORMAL LOAD | MAXIMUM LOAD | PEAK LOAD | LOAD REG. | LINE REG. | RIPPLE & NOISE |
|---|---|---|---|---|---|---|---|
| +3.3V | 0A | 2.5A | 7A | 10A | ±5% | ±1% | 50mV P-P |
| +5V | 0A | 2.5A | 7A | 10A | ±5% | ±1% | 50mV P-P |
| +12V | 0A | 2.5A | 7A | 10A | ±5% | ±6% | 120mV P-P |
| -12V | 0.0A | 0.05A | 0.1A | 0.15A | ±10% | ±1% | 120mV P-P |
| +5Vsb | 0.0A | 0.8A | 1.8A | 2.2A | ±5% | ±1% | 5 0mV P-P |

(1).+3.3V &+5V total output not exceed 56W.
(2).Peak current may last up 3seconds with not more than one occurrence per minute.At peak loading, regulation at all outputs can go to +/-10%,and peak loading can't coincide.
(3).Voltages and ripple are measured at the load side of mating connectors with a 0.1 uF monolithic ceramic capacitor paralleled by a 10 uF electrolytic capacitor across the measuring terminals

**3.2 REMOTE ON/OFF CONTROL**

The power supply shall accept a logic open collector level which will disable / enable all the output voltage (exclude + 5V standby).

A s logic level is low, outputs voltages were enable.

A s logic level is high, outputs voltages were disable.

Note: 1. Logic high Level: 2.0-5.25V while sourcing 0.4mA maximum.
2. Logic low level: 0-0.8V while sinking 4mA maximum.
3. Rise Time: 15ms maximum (10%-90%).

**3.3 SHORT CIRCUIT PROTECTION**

A short circuit at any output shall cause no damage to the power supply nor blow the primary fuse. The supply may shut down in the event of a short circuit and require power-on restart. A short circuit consists of application of a test resistance of less than 0.05 ohms at each output with maximnm load on all outputs.

+5Vsb short circuit protection can be auto-recovery.

**3.4 OVER-CURRENT PROTECTION**

There shall be protection from an output over-current event. The supply may shutdown from such an event and require power-on restart. Testing consists of application of the listed over-current value
Over-current test values:
+5V over-current protection range: 13~25A
+3.3V over-current protection range:13~ 25A
+12V: will be protected through the adapter.
-12V over-current protection range:0.2~ 0.4A
5Vsb over-current protection range:2.2~3.2A

**3.5 OVER VOLTAGE PROTECTION**

In the event of an over-voltage condition on +3.3 & +5Vdc &+12V the power supply shall shutdown and require remote control or remove the AC mains input to reset the system.

\+ 5V: 5.74~7.0V (external superimposed)
+3.3V: 3.76~4.3V (external superimposed)

+12V: 13.4~15.6V (external superimposed)

**3.6 TURN-ON DELAY TIME**

The cold-start enable output voltage rise time of all outputs shall be measured with maximum load on all outputs.

R ise time: + 3.3V 0 .2~20ms
( 10-90%) + 5V 0 .2~20ms
+ 12 V 0 .2~20ms

**3.7 OPERATION AT NO LOAD**

The power supply shall be capable of being operated with no load on any or all outputs without damage. For no load on all output, output regulation should be within ±10% of rating voltage.

**3.8 DYNAMIC LOAD REGULATION&LINE REGULATION**

Output Load Change Maximum step size is 50%(% of rated output amps), slew rate is 0.5~1.0A/uS. Frequency is 100Hz~5 kHz, output regulation should be within ±5% of rating voltage.

**3.9 OVERSHOOT**

No output voltage shall overshoot/undershoot or generate spikes at turn-on or turn-off, during momentary power loss, output short, or realistic input voltage or output load changes, Overshoot/undershoot is defined as any output that exceeds the voltage tolerance plus or minus an additional 10%.

**3.10 POWER GOOD SIGNAL**

Input/12V: 100-500mS

**3.11 POWER FAIL SIGNAL**

Input/12V : 1mS minimum**(only PS/ON control)**

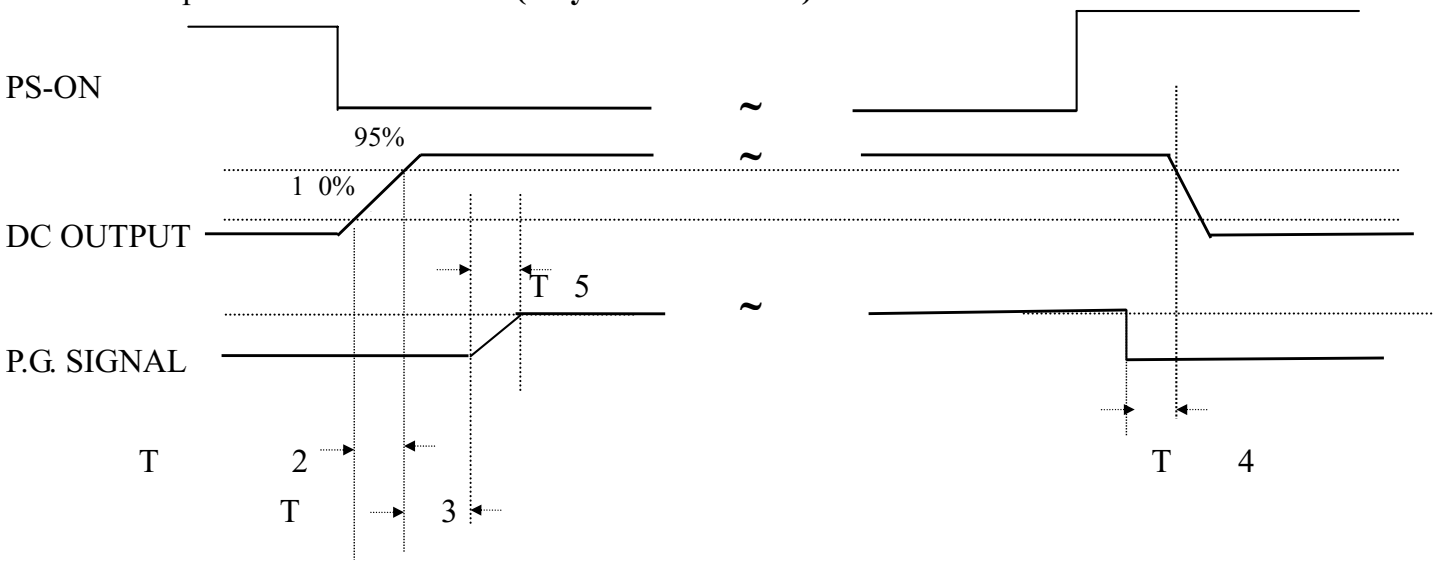

Figure 1

T2: RISETIME < 20mS

T 3: POWER GOOD DELAY TIME 100mS-500mS

T 4: POWER FAIL DELAY TIME > 1mS

T5 : POWER GOOD RISETIME ≦10mS

**4.0 *ENVIRONMENTAL REQUIREMENTS***

The power supply will be compliant with each item in this specification for the following environmental conditions.

**4.1 TEMPERATURE RANGE**

| | |
|---|---|
| **Operating** | **-5 to + 45 deg.C** |
| **Storage** | **-20 to +65 deg.C** |

**4.2 HUMIDITY**

| | |
|---|---|
| **Operating** | **20 -80%RH,Non-condensing** |
| **Storage** | **10 -90%RH,Non-condensing** |

**5.0 RELIABILITY**

**5.1 MTBF**

The subject adapter have a minimum predicted MTBF (Bellcore SR332) of 50000 hours of continuous operation at 25℃, maximum-output load, and nominal input voltage.