

# **SPARKLE POWER INT'L LTD.**



**FSP065-AAB**

**19V@3.42A**

**Adapter**

**Switching Power Supply**

**San Jose Office**

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**08/27/2007**



全漢企業股份有限公司

SPI Electronic Co., Ltd.

# Electrical Specification

## Electrical Requirements

### 1. Input Characteristics:

| ITEM                                      | CONDITION                                  | SPECIFICATION          |
|---|--|------------------------|
| 1.1 Rated Input Voltage                   |  | 100V / 240V            |
| 1.2 Input Voltage Range                   |  | 90VAC to 264VAC        |
| 1.3 Input Frequency Range                 |  | 47Hz to 63Hz ( ± 1Hz ) |
| 1.4 Input Voltage Harmonic Distortion     |  | ≤ 8%                   |
| 1.5 Input Current                         | 100Vac, 240Vac / 3.42A load                | ≤ 1.5A                 |
| 1.6 Efficiency: (Warm up 10minutes later) | 100Vac / 3.42A<br>240Vac / 3.42A           | ≥ 84%<br>≥ 84%         |
| 1.7 No Load Power Consumption             | 240Vac / 0A load                           | ≤ 0.5W                 |
| 1.8 Input Inrush Current                  | 100Vac (cold start)<br>240Vac (cold start) | ≤ 50A<br>≤ 100A        |

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## 2. Output Characteristics:

※Measured at the end of DC cable.

| ITEM   | CONDITION  | SPECIFICATION   |
|--|--|-----------------|
| 2.1 Output Rated Voltage   |  | 19V             |
| 2.2 Output Current   | at constant voltage mode   | 0A to 3.42A     |
| 2.3 Output Voltage Setting   | at the output end of DC cable  | 19V $\pm$ 5%    |
| 2.4 Output Voltage Ripple and Noise:<br>(0.1uF Ceramic Cap. and 35V 47uF Aluminum Cap. Paralleled between the end of output cable) | 90Vac / 3.42A<br>264Vac / 3.42A  | $\leq$ 300mVp-p |
| 2.5 Output Overshoot Voltage:  | From 65W load to no load, the output Overshoot voltage.  | $\leq$ 8% of Vo |
| 2.6 Turn-On Delay Time:  | At 100Vac / 65W load, output voltage shall remain regulation   | $\leq$ 2Sec.    |
| 2.7 Hold Up Time:  | At 100Vac or 240Vac / 65W load, output voltage shall remain regulation   | $\geq$ 6 mS     |
| 2.8 Rise Time:   | At 100Vac / 65W load, DC output rise time from 5% to 95% of Vo   | $\leq$ 50mS     |
| 2.9 Dynamic Load Change:   | Output load step is 50% of full load, S/R=0.5A/us, frequency is 100Hz and 10KHz, the output regulation will be | 19V $\pm$ 5%    |



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## 3. Protection Characteristics:

| ITEM                             | CONDITION   | SPECIFICATION                                |
|----------------------------------|---|--|
| 3.1 Short Circuit Protection:    | The adapter can withstand continuous short at DC output and no damage, it will enter into normal condition if the fault condition is removed.   | No broken, no smoke.<br>(Auto-recovery mode) |
| 3.2 Over-Voltage Protection      | The adapter will enter into shut down that means no output while over voltage happened at output terminal that caused by internal fault. the output trip voltage will be less than <u>25V</u> . That might be return to normal state by AC reset, reset $\leq$ 2 minutes. | (Latch mode)                                 |
| 3.3 Over Current Protection:     | The max. Output current will be 5.5A while output is constant resistor mode.  | (CC mode)                                    |
| 3.4 Over Temperature Protection: | No deformation and no discoloration on case and will be shut down. That will be return to normal state by AC reset, reset $\leq$ 2 minutes.   | (Auto-recovery mode)                         |

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## 4. Environmental Characteristics:

| ITEM  | CONDITION   | SPECIFICATION                                 |
|---|---|---|
| 4.1 Electric Fast Transients : Refer to IEC1000- 4-4 level 3  | Impulse: $\pm 1\text{kV}$ applied to L,N and chassis, pulse duration 50nS period 5 mintes. Input voltage 110Vac and 65 W load.<br><br>Impulse: $\pm 2\text{kV}$ applied to L, N and chassis, pulse duration 50nS period 5 minutes. Input voltage 110Vac and 65W load.               | No function error<br><br>No damage            |
| 4.2 Lightning Surge: Refer to IEC1000-4-5 level 3   | $\pm 1\text{kV}$ applied between line and line, pulse rise time 1.2us and duty time 50uS, 10 times test each one.<br><br>$\pm 2\text{kV}$ applied between line and line or line and power ground (signal ground), pulse rise time 1.2us and duty time 50uS, 10 times test each one. | No function error<br><br>No damage            |
| 4.4 Electron Static Discharge:<br>(Refer to IEC1000-4-2 Energy Storage Capacitor 150pF; Discharge Resistor 330 $\Omega$ ) | Air Discharge: $\pm 15\text{KV}$ min.<br><br>Contact Discharge: $\pm 8\text{KV}$ min.   | No function error<br><br>No function error    |
| 4.5 Cooling   | Natural air cooling   |   |
| 4.6 EMI: Adapter comply with the following national standards:<br><br>EMI Conducted Emission<br><br>EMI Radiated Emission | FCC. DOCKET 20780. PART 15J. CLASS B<br><br>CISPR22 : 1993/EN55022(1994):CLASS B<br><br>VCCI CLASS II   | Test with system.                             |
| 4.7 Safety conforming:  | UL, c-UL, TUV/GS, NEMKO+CB  | Depends on customer's requirement.            |
| 4.8 Leakage Current   | 240Vac / 60Hz<br>100Vac / 60Hz  | $\leq 100\mu\text{A}$<br>$\leq 60\mu\text{A}$ |

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# Electrical Specification

| ITEM                               | CONDITION   | SPECIFICATION             |
|------------------------------------|---|---------------------------|
| 4.9 Insulation Resistance:         | Between AC input and secondary applied 500Vdc for 1 minute.   | $\geq 30M\Omega$          |
| 4.10 Dielectric Strength: (Hi-Pot) | Between AC input and secondary AC 3KV, test time 1 minute, and cut off current shall be less than 10mA<br>AC 3kV, test time 1 sec. In production line |                           |
| 4.11 Temperature:                  | Operating<br>Storage  | 0 to 40°C<br>-20 to +80°C |
| 4.12 Humidity:                     | Operating<br>Storage  | 20% ~ 80%<br>10% ~ 90%    |

# Electrical Specification

## 5. Mechanical Characteristics:

| ITEM   | CONDITION | SPECIFICATION              |
|--|-----------|----------------------------|
| 5.1 Dimension (Length x Width x Height)                        |           | 114.5x49.5x29.5 mm         |
| 5.2 Adapter weight<br>Case material                            |           | 280g (typical)             |
| 5.3 Input AC socket Type                                       |           | IEC 320 C6 Type            |
| 5.4 Output DC Cable<br>Length<br>Wire style                    |           | 1800±50mm<br>UL 1571 18AWG |
| 5.5 Color<br><br>Case<br><br>DC Cable (including Molding Core) |           | Black<br><br>Black         |