




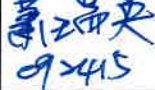
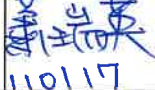
# SPECIFICATION

For

SWITCHING POWER SUPPLY

M/N : SNP-AF67

STANDARD PRODUCT

Reviewed by Product Engineer			Jim 11-2-17			
Typed by Document Assistant						
SKYNET ELECTRONIC			LAST REV. NO.			

**1.0 INTRODUCTIONS**

SNP-AF67 is a Class II input and 60W output switching mode desktop adaptor. Low no-load input power (<0.15 W) and high average efficiency in active mode ( $\geq 89\%$ ) complies with EC code of conduct for EPS version 5(Tier 2) requirements. Also, the safety conformity covers IT and Medical applications.

**2.0 INPUT SPECIFICATIONS**

**2.1 Input Voltage**

The range of input voltage is 85VAC ~ 264VAC, nominal line is 115V/230V.  
This is class II power supply.

**2.2 Input Frequency**

The range of input frequency is 47Hz ~ 63Hz.

**2.3 Input Current**

The maximum input current is 2A at 115VAC or 1A at 230VAC.

**2.4 Inrush Current**

The inrush current will not exceed 40A at 115VAC input or 80A at 230VAC input, with cold start 25°C.

**2.5 No-load input power**

<0.15W at no load output power and 115Vac/230Vac input voltage range.

**3.0 OUTPUT SPECIFICATIONS**

All specs under item 3.0 except with special notes are defined and tested at nominal line input, rated load and 25°C.

**3.1 Load range**

output	min. load	rated load	peak load	voltage range
+12V	0A	5A	7.5A	11.40V to 12.60V

At factory, +12V output is set between +11.40 V to +12.60V at 60% rated load and nominal line input.

\* Peak load is not promised to use over 5 sec. at nominal line, otherwise the life-time will be reduced.

**3.2 Ripple and noise**

The peak to peak ripple and noise for each output is less than 100mV at rated load, nominal line. Measuring is done by 20 MHz bandwidth limited oscilloscope and terminated each output with a 0.47uF +10uF capacitor.

**3.3 Line regulation**

The line regulation is less than + -0.5% while measuring at rated load and + -10% of nominal line input voltage changing.

**3.4 Load regulation**

The load regulation is less than + -3% which is measured by changing the output load + -40% from 60% rated load at nominal line input.

#### 4.0 GENERAL FEATURES

All specs under item 4.0 except with special notes are defined and tested at nominal line input, rated load and 25°C.

##### 4.1 Efficiency

The efficiency is 89% typ. while measuring at nominal line and rated load.

Also, the average efficiency in active mode is higher than 89% . while measuring at nominal line. (100%、75%、50% and 25% of rated load)

The efficiency is higher than 79% while measuring at nominal line and 10% of rated load.

##### 4.2 Hold up time

The hold up time is 16mS typ. at 115VAC input and rated load, which is measured from the end of the last charging pulse to when the main output drops down to 95% output voltage.

##### 4.3 Protection

###### 4.3.1 Over voltage protection

The built-in crowbar circuit will shut down the outputs to avoid damaging the external circuits. The trip point of over voltage protection is around +13V to +16V. To recover from over voltage protection, cycle the AC line OFF and ON is necessary.

###### 4.3.2 Short circuit and over load protection

The power supply will generate a hiccup mode to protect itself against short circuit or over load conditions, and will automatically return to normal after fault conditions are removed.

#### 5.0 ENVIRONMENT SPECIFICATIONS

##### 5.1 Operating temperature

-20°C to 60°C, 0°C to 40°C no derating, above 40°C, derate at 2.5% per degree from 40°C to 60°C.

##### 5.2 Storage temperature

-40°C to 85°C

##### 5.3 Operating humidity

10% to 95% Non-Condensing .

##### 5.4 Altitude

Will operate properly at any altitude between 0 to 5000m.

##### 5.5 MTBF

>200Khrs(based on MIL-HDBK-217F, rated load, 50°C)

## 6.0 INTERNATIONAL STANDARDS

### 6.1 Safety standards (Label Voltage:100~240Vac)

Designed to meet the following regulations :

ANSI/AMMI/CSA/EN 60601-1, 3<sup>rd</sup> edition+A1

UL/CSA/EN 60950-1, 2<sup>nd</sup> edition

### 6.2 EMI standards

Designed to meet the following limits :

FCC docket 20780 curve "B"

EN55011 Class "B"

EN55022 Class "B"

EN61000-3-2 Class A

EN61000-3-3

### 6.3 EMS standards

Designed to meet the following limits :

EN61000-4-2 8KV contact, 15KV air discharge Criterion A

EN61000-4-3 10V/M with 80% AM Criterion A

EN61000-4-4 2KV Criterion A

EN61000-4-5 Line to Line 2KV Criterion A

EN61000-4-6 10V with 80% AM Criterion A

EN61000-4-8 30A/M Criterion A

EN61000-4-11 100% dips 10mS Criterion A

100% dips 20mS Criterion B

30% dips 500mS Criterion A

60% dips 200mS Criterion B

100% dips 5000mS Criterion B

### 6.4 Energy saving standards

Designed to meet the following standard:

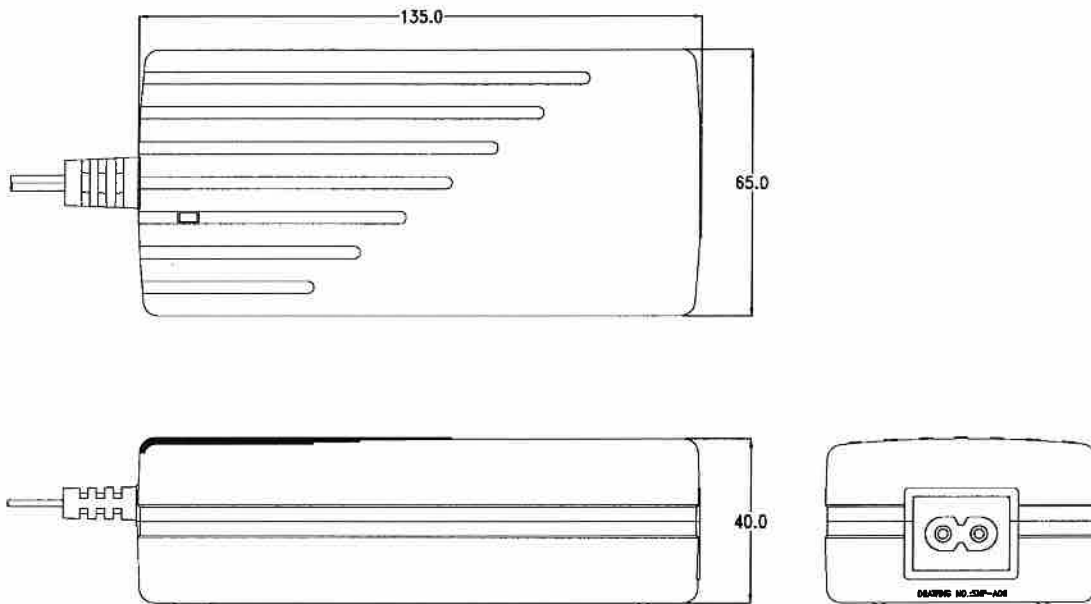
ErP : EC Code of Conduct Version 5(Tier2/2016)

(No load input power <0.15W , average efficiency >89% , 10% efficiency>79%)

DOE : EPS Efficiency Level VI

(No load input power <0.21W , average efficiency >88%)

**7.0 MECHANICAL SPECIFICATION**



**7.1 Dimensions**

Dimensions shown in mm as above.

Tolerance specified is +/-1mm (Excluding DC wire harness)

**7.2 Connectors**

AC inlet : Meet IEC320 C8 standard (without Ground)

DC output : 2.5 DIA. socket type, DC power Right Angle Plug  
(Cable length : 1.5M approx.).

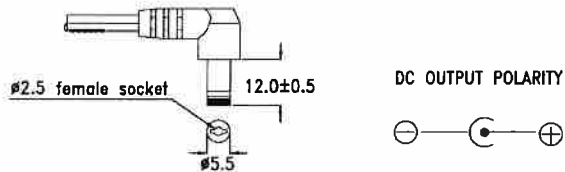
**7.3 Power on indicator**

Green light on top of Box

**7.4 Color**

Black

**7.5 DC output pin assignment : (See drawing below)**



**7.6 Packing**

Net weight : 350g approx. / unit

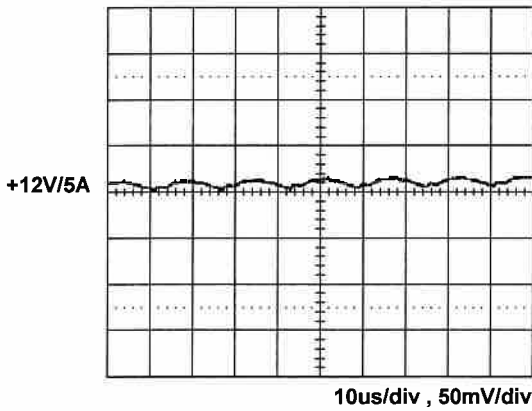
Carton size (mm) : 501 (L) x 426 (W) x 307 (H)

Quantity : 40 units / carton

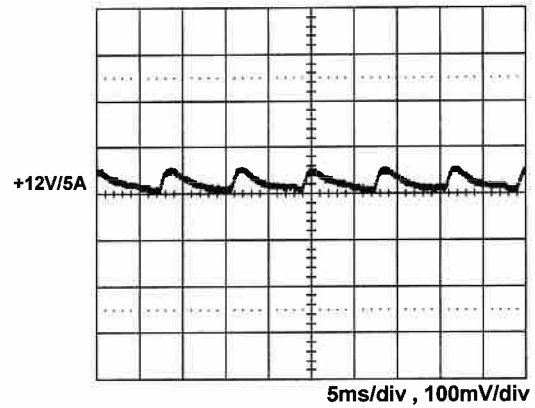
Gross weight : 18.0 kg approx. / carton

8.0 PERFORMANCE (input voltage is 115VAC, unless others specified)

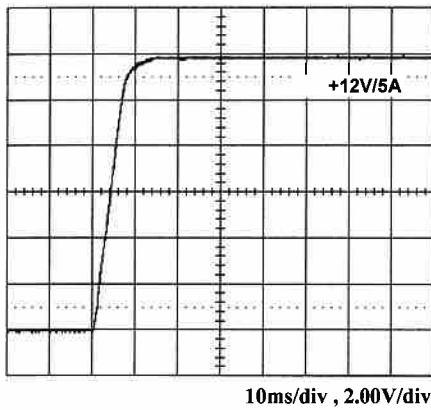
8.1 Switching frequency ripple



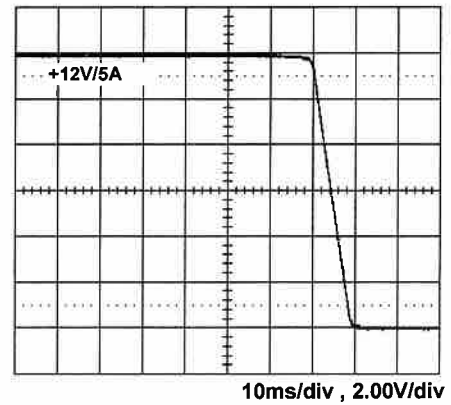
8.2 Line frequency ripple



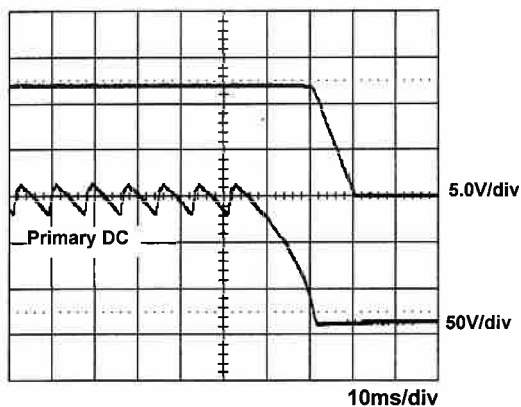
8.3 Output turn on wave form



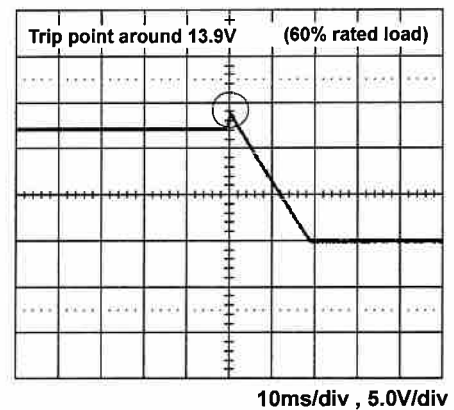
8.4 Output turn off wave form



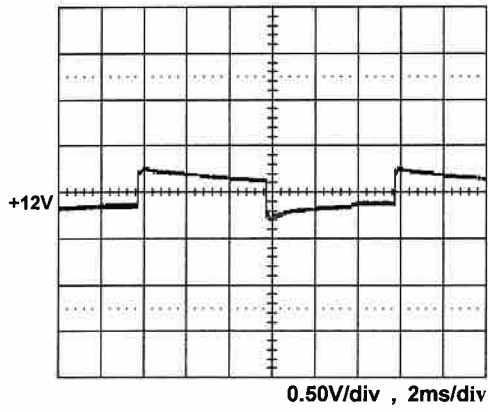
8.5 Hold-up time



8.6 Over voltage protection

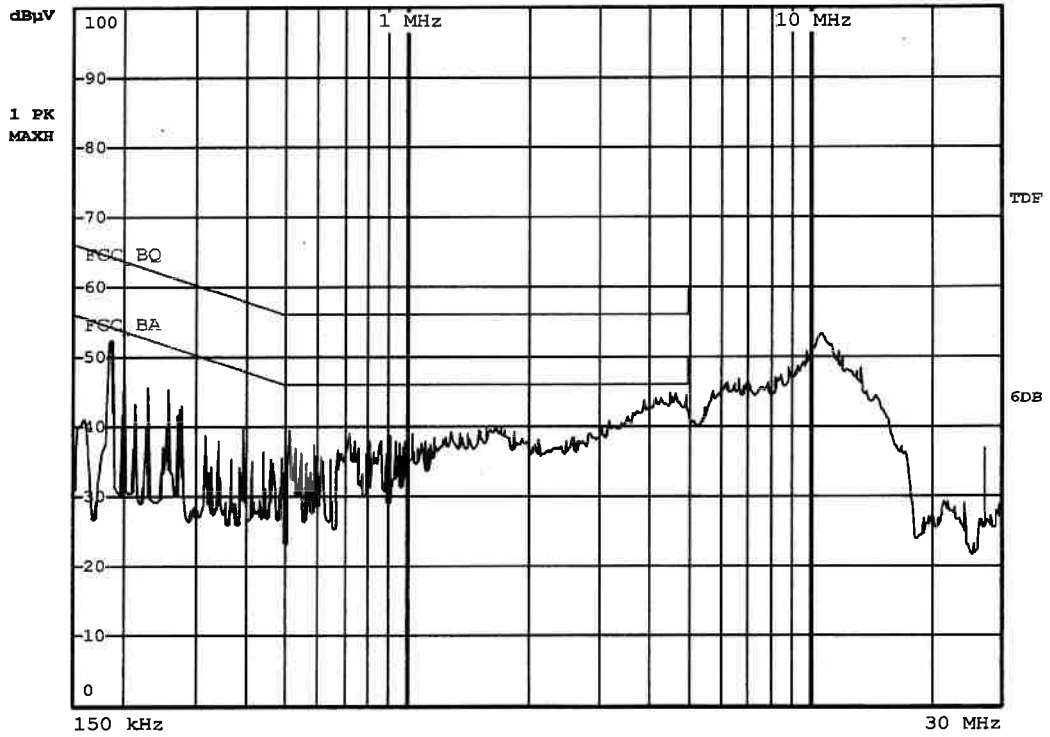


8.7 +12V Step response



+12V step from 1A to 5A

8.8 FCC B performance



8.9 EN55011/ EN55022 class "B"

