

**SPECIFICATION**

and

**PERFORMANCE**

for

SWITCHING POWER SUPPLY

**M/N : SNP-A087-3**

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Reviewed by Project Manager	Jim, 9-22-19					
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<b>SKYNET ELECTRONIC</b>			<b>LAST REV. NO.</b>			

## 1.0 INTRODUCTIONS

SNP-A087-3 is a Class I input and 72W rated / 108W peak output switching mode desktop adaptor. Low no-load input power (<0.3W) and high average efficiency in active mode ( $\geq 85\%$ ) complies with the EPA energy star stage IV requirements. Also, the safety conformity covers IT and Medical applications.

## 2.0 INPUT SPECIFICATIONS

### 2.1 Input Voltage

The range of input voltage is 90VAC ~ 264VAC, nominal line is 115V/230V. (Label 100 ~ 240VAC). This is class I power supply.

### 2.2 Input Frequency

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

### 2.3 Input Current

The maximum input current is 3A at 115VAC or 1.5A at 230VAC.

### 2.4 Inrush Current

The inrush current will not exceed 35A at 115VAC input or 70A at 230VAC input, with cold start 25°C.

### 2.5 No load input power

No-load input power is less than 0.3W at 230VAC input.

## 3.0 OUTPUT SPECIFICATIONS

### 3.1 Load range

output	min. load	rated load	peak load	voltage accuracy
+12V	0A	6A	9A	+11.4V to +12.6V

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

\* Peak load is not promised to use over 10 sec. at nominal input, 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 1.0% of output voltage at rated load, nominal line. Measuring is done by 20MHz bandwidth limited oscilloscope and terminated each output with a 0.47uF 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 and nominal line input.

## 4.0 GENERAL FEATURES

### 4.1 Efficiency

The efficiency is 84% typ. while measuring at nominal line and rated load.

Also, the average efficiency in active mode is 85% typ. while measuring at nominal line. (100、75、50、25% of rated load)

### 4.2 Hold up time

The hold up time is 20mS 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

0°C to 40°C

### 5.2 Storage temperature

-40°C to 80°C

### 5.3 Operating humidity

10% ~ 95% Non-Condensing .

### 5.4 Altitude

Will operate properly at any altitude between 0 to 6000 ft.

## 6.0 INTERNATIONAL STANDARDS

### 6.1 Safety standards

Designed to meet the following regulations :

2rd Edition :

UL 60601-1 : 2003

CAN/CSA C22.2 NO.601.1-M90 with updates 1 and 2

EN 60601-1 : 1990 + A1 + A2

IEC 60601-1 : 1988 + A1 + A2

3rd Edition :

ANSI/AAMI ES60601-1: 2005

CSA C22.2 NO.60601-1: 08

EN 60601-1 : 2006

IEC 60601-1 : 2005

### 6.2 EMI standards

Designed to meet the following limits :

FCC docket 20780 curve "B"

EN55011 Class "B"

EN61000-3-2 Class A

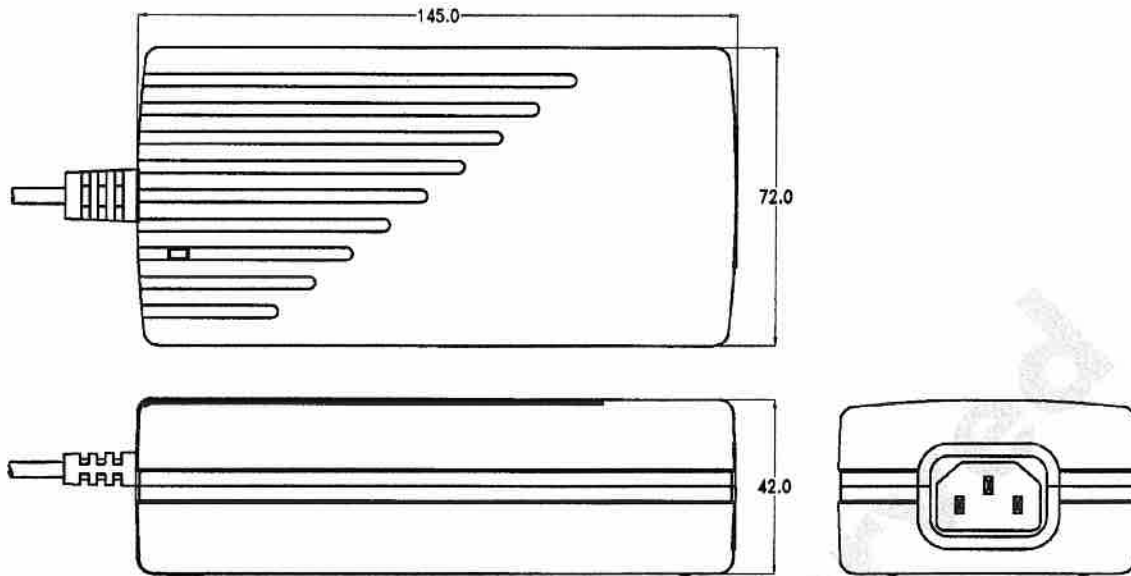
EN61000-3-3

### 6.3 EMS standards

Designed to meet the following limits :

EN61000-4-2	4KV contact, 8KV 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 1KV	Criterion A
	Line to Ground 2KV	Criterion A
EN61000-4-6	3V with 80% AM	Criterion A
EN61000-4-8	3A/M	Criterion A
EN61000-4-11	30% dips 10ms	Criterion A
	60% dips 100ms	Criterion C
	100% dips 5000ms	Criterion C

**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 C14 standard

DC output : 4PIN HOSIDEN PLUG or equivalent  
(Cable length : 1.8M approx.)

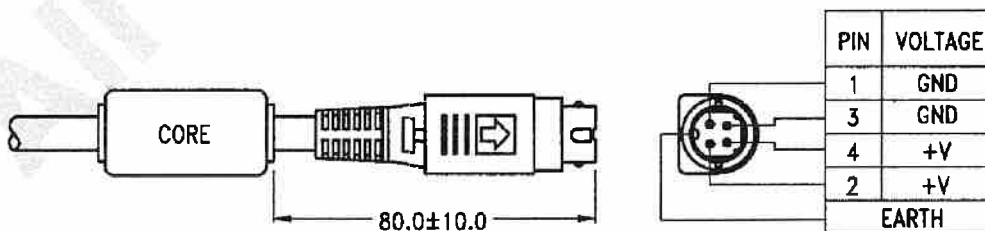
**7.3 Power on indicator**

Green light on top of Box

**7.4 Color**

Black

**7.5 DC power pin specification : (See drawing below)**



**7.6 Packing**

Net weight : 490g approx. / unit

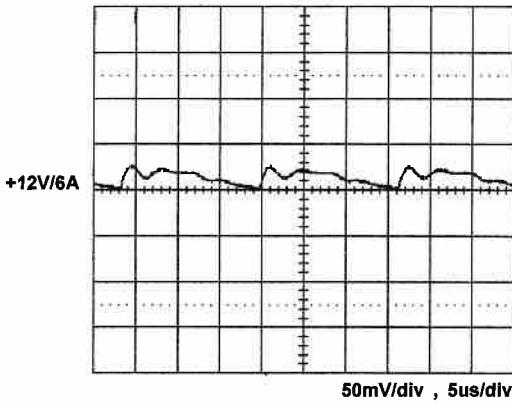
Carton size(mm) : 503 (L) x 362 (W) x 300 (H)

Quantity : 20 units / carton

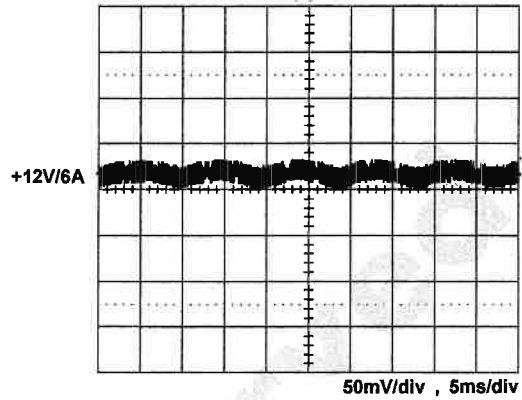
Gross weight : 12.0kg approx. / carton

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

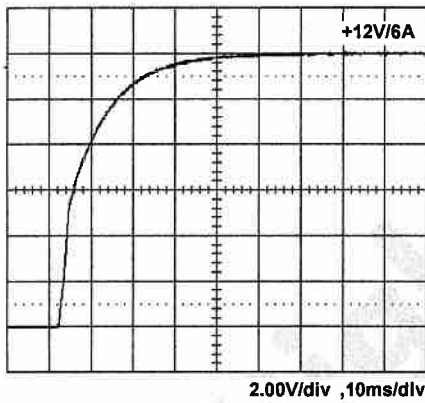
**8.1 Switching frequency ripple**



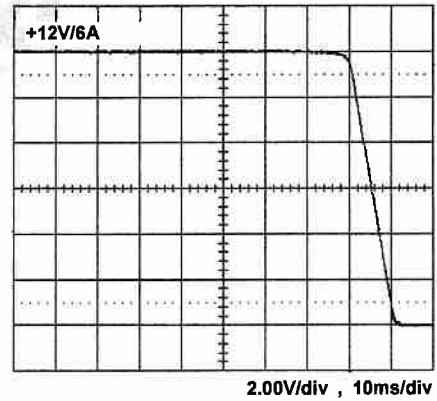
**8.2 Line frequency ripple**



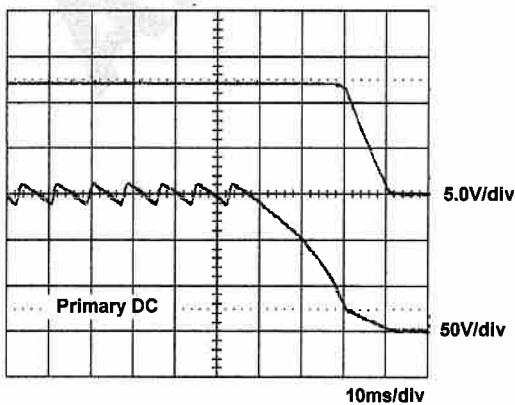
**8.3 Output turn on wave form**



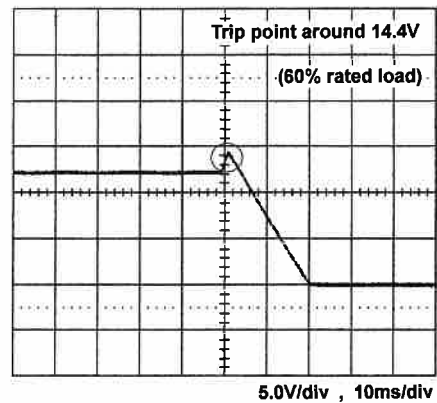
**8.4 Output turn off wave form**



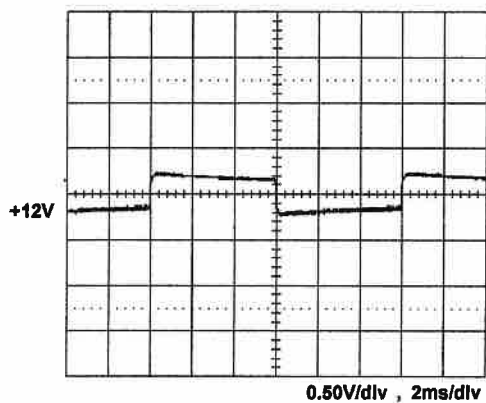
**8.5 Hold-up time**



**8.6 Over voltage protection**



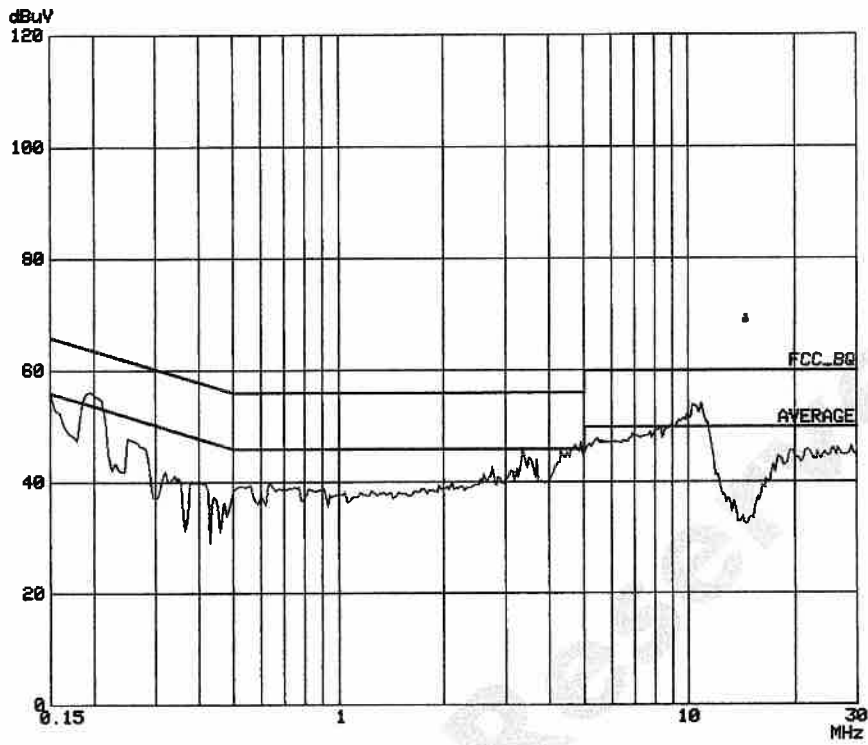
8.7 +12V step response



+12V step from 1.2A to 6A

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8.8 FCC B performance



8.9 EN55011 class "B"

