

**SNP-G16G-MA SPECIFICATION**


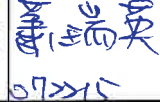
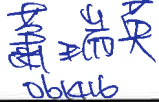
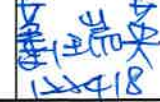
**SPECIFICATION**

**For**

**SWITCHING POWER SUPPLY**

**M/N : SNP-G16G-MA**

**STANDARD PRODUCT**

|                                 |   |   |   |  |  |  |
|---------------------------------|---|---|---|--|--|--|
| Reviewed by<br>Product Engineer | <br>06/25/15 | Hui<br>072315   | Jim<br>6-14-16  | Jim<br>12-25-18  |  |  |
| Typed by<br>Document Assistant  | <br>042415   | <br>072315 | <br>062416 | <br>122418 |  |  |
| <b>SKYNET ELECTRONIC</b>        |   |   |   | <b>LAST REV. NO.</b>   |  |  |

## 1.0 INTRODUCTIONS

SNP-G16G-MA is a 3"×5" open frame, general purpose, rated 160W SMPS. It also features in Medical safety and nonaudible noise green power.

## 2.0 INPUT SPECIFICATIONS

### 2.1 Input Voltage

Input voltage range : 90Vac to 264Vac

Nominal line voltage : 115Vac/230Vac

### 2.2 Input frequency

47Hz to 63Hz

### 2.3 Input current

4A<sub>rms</sub> max/115Vac, 2A<sub>rms</sub> max/230Vac

### 2.4 Inrush current

30A max/115Vac, 60A max/230Vac (EMI capacitors excluded, cold start at 25°C)

### 2.5 Test Condition

All specs except international standards or specs with special notes are defined and tested at nominal line input, rated load and 25°C.

## 3.0 OUTPUT SPECIFICATIONS

### 3.1 Load range

| Vo   | min. load | rated load | max. load | peak load |
|------|-----------|------------|-----------|-----------|
| +28V | 0A        | 5.7A       | 8.55A     | 11.4A     |

#### 3.1.1 Factory adjustment

+27.9V to +28.1V (60% rated load, 115Vac)

#### 3.1.2 Peak load max duration

5sec. (duty cycle < 10%, average power < 160W)

### 3.2 Ripple and noise

< 160mV (20MHz bandwidth limited, 1X probe with 0.47uF parallel capacitor)

### 3.3 Line regulation

< ±0.5% (90Vac to 264Vac, comparing with 115Vac)

### 3.4 Load regulation

< ±1% (20% to 100% rated load, comparing with 60% rated load)

### 3.5 Capacitive load start-up capability

< 7000uF

## 4.0 GENERAL FEATURES

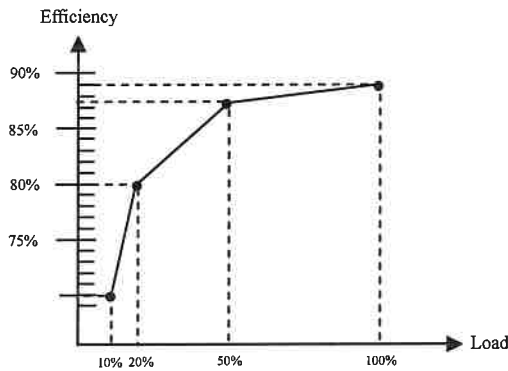
### 4.1 Average efficiency

>87% typ.(Average from 20%, 50%, and 100% efficiency)

**4.2 step efficiency**

- >70% at 10% rated load
- >80% at 20% rated load
- >87.5% at 50% rated load
- >89% at 100% rated load

**4.3 Efficiency Curve**



**4.4 Hold up time**

25ms typical

**4.5 No load input power**

<5W (without FAN connection)

**4.6 Protection**

**4.6.1 Over-voltage protection**

Trip point : +33V to +40V (60% rated load)

Protection mode : Latch-off

**4.6.2 Short circuit and over-load protection**

Protection mode : Auto-recovery

**5.0 ENVIRONMENT SPECIFICATIONS**

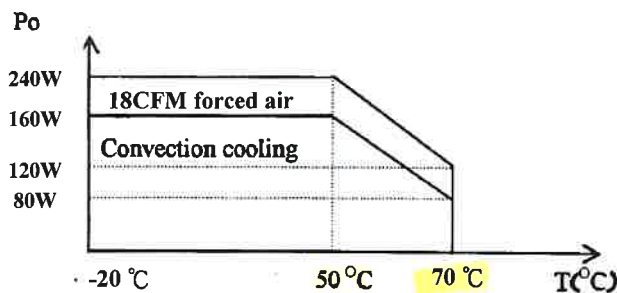
**5.1 Operating temperature**

-20°C to 70°C

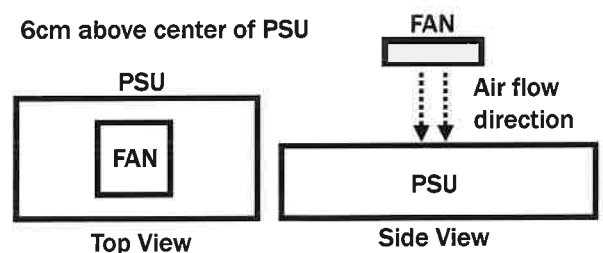
(For both rated and max load. output load derates linearly to 50% from 50°C to 70°C)

(Rated load with convection cooling; max load with 18 CFM forced air cooling)

Output derating curve



Max load fan location



**5.2 Storage temperature**

-40°C to 85°C

**5.3 Operating humidity**

5% to 95% RH, non-condensing

**5.4 Altitude**

0 to 5000m

**5.5 MTBF**

&gt; 180Khrs (based on MIL-HDBK-217F, rated load, 50 °C)

**6.0 INTERNATIONAL STANDARDS****6.1 Safety standards**

Label Voltage : 100Vac to 240Vac

UL 60601-1

CSA 22.2 NO.60601-1

EN 60601-1

**6.2 EMI standards**

FCC docket 20780 curve "B"

CISPR 22 "B"

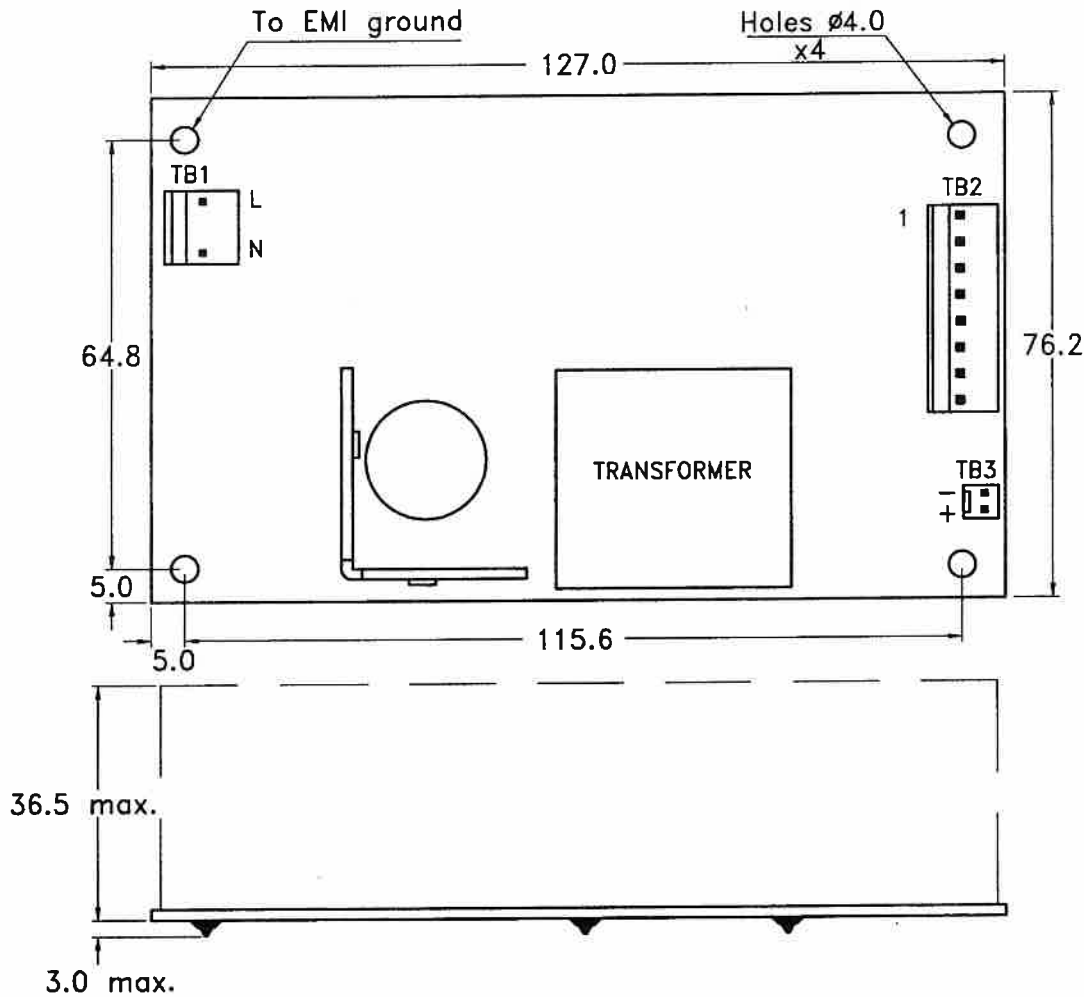
EN 61000-3-2 class "D"

EN 61000-3-3

**6.3 EMS standards**

|              |   |             |
|--------------|---|-------------|
| EN61000-4-2  | 8kV/contact discharge, 15kV/air discharge | Criterion A |
| EN61000-4-3  | 10V/M with 80% AM                         | Criterion A |
| EN61000-4-4  | 2kV (100KHz)                              | Criterion A |
| EN61000-4-5  | 1kV/Line-Line, 2kV/Line-Earth             | 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 |

**7.0 MECHANICAL SPECIFICATION**



**7.1 Dimensions**

Dimensions shown in mm as above. Tolerance is specified  $\pm 0.4$ mm dimension.

**7.2 Connectors**

- TB1-- AC Input : Molex 5277-02A or equivalent , mating with Molex 5239-03 or equivalent
- TB2-- DC Output : Molex 5273-08A or equivalent , mating with Molex 5239-08 or equivalent
- TB3-- For +12V Fan use only : Molex 5045-02A or equivalent , mating with Molex 5051-02 or equivalent

**7.3 DC Output pin assignment**

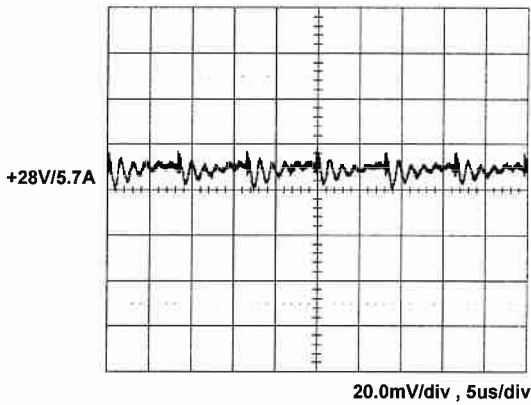
- Pin 1 +V 5 GND
- 2 +V 6 GND
- 3 +V 7 GND
- 4 +V 8 GND

**7.4 Packing**

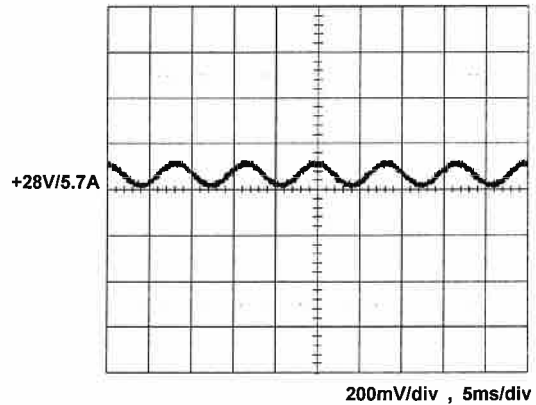
- Net weight : 339 g approx. / unit
- Carton size(mm) : 384 (L) x 339 (W) x 327(H)
- Quantity : 36 units / carton
- Gross weight : 14.4 kg approx. / carton

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

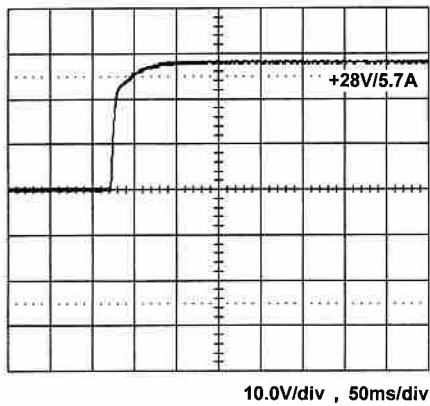
**8.1 Switching frequency ripple**



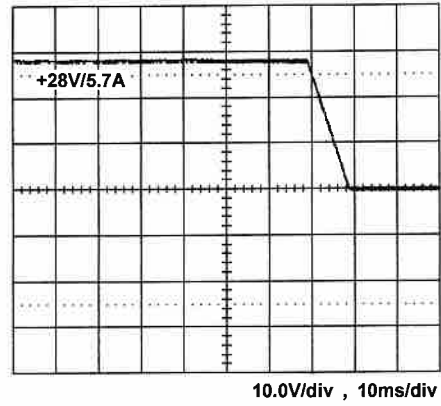
**8.2 Line frequency ripple**



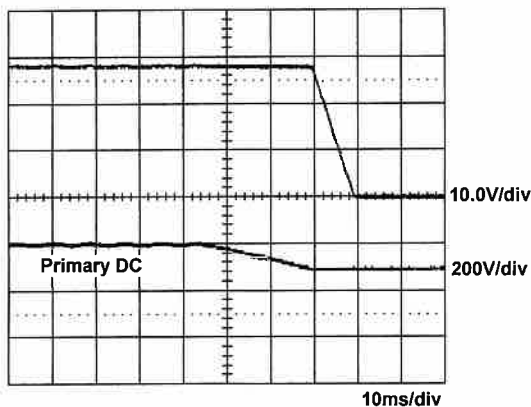
**8.3 Output turn on wave form**



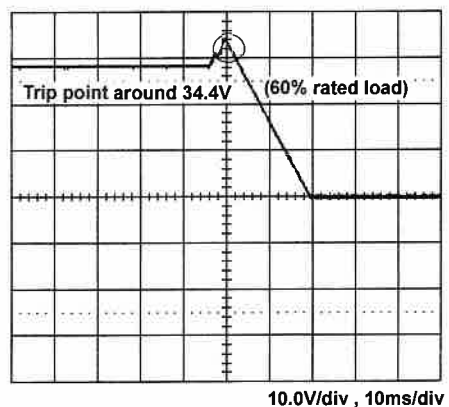
**8.4 Output turn off wave form**



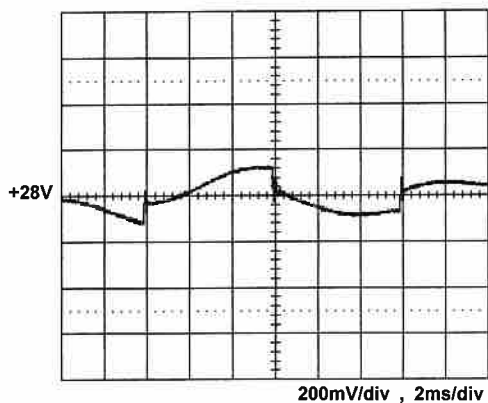
**8.5 Hold-up time**



**8.6 Over voltage protection**

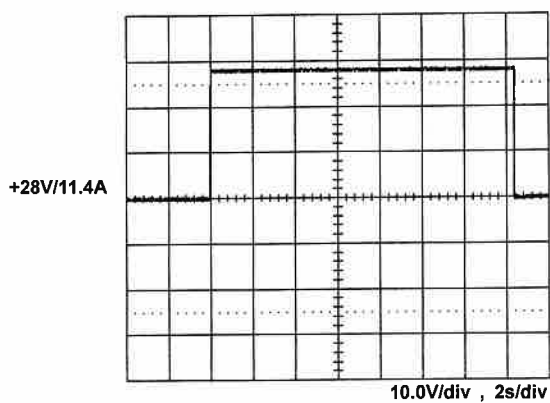


8.7 +28V Step response

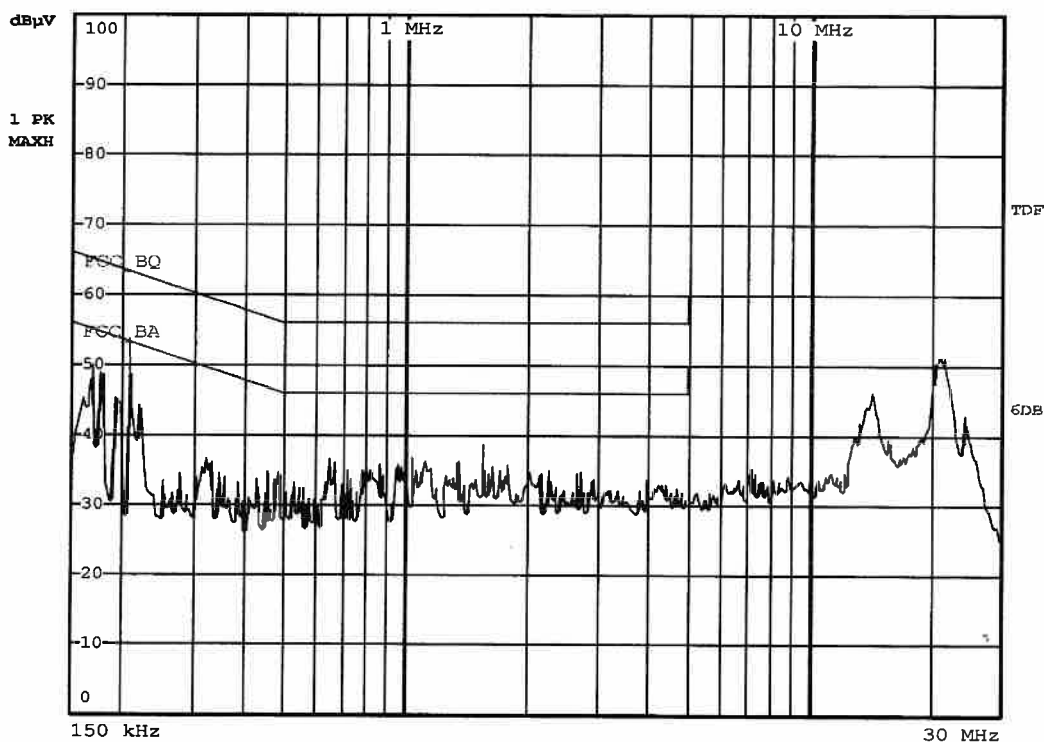


+28V step from 1.14A to 5.7A

8.8 Peak Load



### 8.9 FCC "B" QP performance



### 8.10 EN55022 "B" QP performance

