



**Description:**

Open frame size of 3" X 5" has become an industrial standard for more than 10 years. The power density is around 2.0 watts/cu.in. at very beginning and then stays at 3.0 watts/cu.in. for a long time. Now, the SNP-Z10 series can offer 6.0 watts/cu.in. plus active PFC in 3" X 5" X 1.2" size. Undoubtedly the SNP-Z10 series is the state-of-the-art at the moment. The patent was granted for this circuit.

**Model available:**

- SNP-Z106 for 5V/20A
- SNP-Z107 for 12V/9A
- SNP-Z108 for 15V/7A
- SNP-Z109 for 24V/4.5A
- SNP-Z10T for 48V/2.3A
- SNP-Z101 for 5V/11.5A, 12V/3A, -12V/0.5A
- SNP-Z103 for 5V/7A, 12V/8A
- SNP-Z10D for 3.3V/10A, 5V/8A, 12V/0.5A
- SNP-Z10B for 3.3V/25A

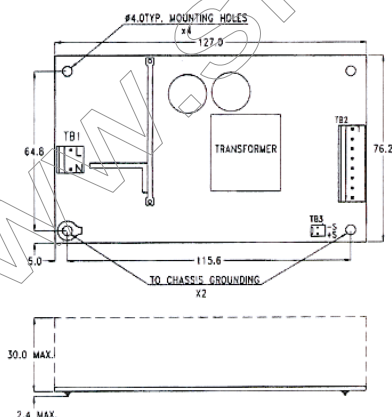
### General Specifications:

|                                |                                                              |
|--------------------------------|--------------------------------------------------------------|
| Input voltage .....            | 90 VAC to 264 VAC                                            |
| Input frequency .....          | 47 Hz to 63 Hz                                               |
| Inrush current .....           | less than 30A at 115VAC<br>less than 60A at 230VAC           |
| Efficiency .....               | 80%~90% depends on models                                    |
| Hold up time .....             | cold start, 25°C<br>20mS typical<br>at rated load and 115VAC |
| Over load protection .....     | auto recovery                                                |
| Short circuit protection ..... | auto recovery                                                |
| Over voltage protection .....  | latch off                                                    |

|                                  |                                                                     |
|----------------------------------|---------------------------------------------------------------------|
| Max. capacitive load .....       | SNP-Z106 / 30000uF,<br>SNP-Z107 / 10000uF, SNP-Z109 / 2700uF        |
| Remote Sense .....               | Compensates for 0.5V load drop                                      |
| min. Operating temperature ..... | 0°C to 50°C convection                                              |
| Cooling .....                    | Free air convection for 100W<br>with 18CFM forced air flow for 130W |
| Storage temperature .....        | -20°C to +85°C                                                      |
| EMI .....                        | EN55022 "B", FCC "B"                                                |
| Harmonics .....                  | EN61000-3-2                                                         |
| EMS .....                        | EN61000-4-2, -3, -4, -5, -6, -11                                    |
| Safety .....                     | UL 60950                                                            |
|                                  | CSA 22.2 No. 234, EN60950                                           |

### Mechanical Specifications:

SNP-Z106



**Notes:**

1. Dimensions shown in mm as above.  
Tolerance: +/-0.4mm.
2. Size:
  - 2.1 SNP-Z106, Z107, Z108, Z109, Z10T, Z10B  
127.0mm X 76.2mm X 32.4mm  
5" X 3" X 1.28"
  - 2.2 SNP-Z101, Z103, Z10D  
127.0mm X 76.2mm X 34.4mm  
5" X 3" X 1.35"
3. Connectors:  
AC input : Molex 5277-02A or equivalent  
DC output : Molex 5273 or equivalent  
Remote Sense : Molex 5045-02A or equivalent



## General Purpose (Universal)

**PFC + 100W  
SNP-Z10 Series**

### Output Specifications:

| MODEL NO. | OUTPUT RAIL | LOAD |       |       | VOLTAGE ACCURACY | RIPPLE NOISE | LINE REG. | LOAD REG. |
|-----------|-------------|------|-------|-------|------------------|--------------|-----------|-----------|
|           |             | MIN. | RATED | MAX   |                  |              |           |           |
| SNP-Z106  | +5V         | 0A   | 20A   | 26A   | +4.95V~+5.05V    | 50mVpp       | ±0.5%     | ±1%       |
| SNP-Z107  | +12V        | 0A   | 9A    | 10.8A | +11.90V~+12.10V  | 120mVpp      | ±0.5%     | ±1%       |
| SNP-Z108  | +15V        | 0A   | 7A    | 8.7A  | +14.90V~+15.10V  | 120mVpp      | ±0.5%     | ±1%       |
| SNP-Z109  | +24V        | 0A   | 4.5A  | 5.4A  | +23.80V~+24.20V  | 200mVpp      | ±0.5%     | ±1%       |
| SNP-Z10T  | +48V        | 0A   | 2.3A  | 2.7A  | +47.60V~+48.40V  | 200mVpp      | ±0.5%     | ±1%       |
| SNP-Z101  | +5V         | 0A   | 11.5A | 15A   | +4.95V~+5.05V    | 50mVpp       | ±0.5%     | ±1%       |
|           | +12V        | 0A   | 3A    | 5A    | +11.40V~+12.60V  | 100mVpp      | ±0.5%     | ±5%       |
|           | -12V        | 0A   | 0.5A  | 0.5A  | -11.40V~-12.60V  | 100mVpp      | ±0.5%     | ±5%       |
| SNP-Z103  | +5V         | 0A   | 7A    | 10A   | +4.95V~+5.05V    | 50mVpp       | ±0.5%     | ±1%       |
|           | +12V        | 0A   | 8A    | 10A   | +11.40V~+13.20V  | 120mVpp      | ±0.5%     | ±5%       |
| SNP-Z10D  | +3.3V       | 0A   | 10A   | 15A   | +3.20V~+3.40V    | 50mVpp       | ±0.5%     | ±1%       |
|           | +5V         | 0A   | 8A    | 10A   | +4.75V~+5.25V    | 50mVpp       | ±0.5%     | ±5%       |
|           | +12V        | 0A   | 0.5A  | 0.5A  | +11.40V~+12.60V  | 100mVpp      | ±0.5%     | ±5%       |
| SNP-Z10B  | +3.3V       | 0A   | 25A   | 30A   | +3.20 ~+3.40V    | 50mVpp       | ±0.5%     | ±1%       |

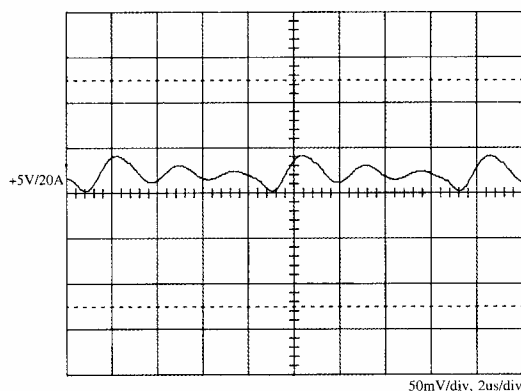
#### Note:

1. The total output current is rated load with free air convection and max. load with 18CFM of forced air flow over the unit.
2. At factory, in 60% rated load condition, each output is checked to be within voltage accuracy.
3. Line regulation is defined by changing  $\pm 10\%$  of input voltage from nominal line at rated load.
4. Load regulation is defined by changing  $\pm 40\%$  of measured output load from 60% rated load at another output set to 60% rated load.
5. Ripple & noise is measured by using 15MHz bandwidth limited oscilloscope and terminated each output with a 0.47 $\mu$ F capacitor and a 47 $\mu$  electrolytic capacitor at rated load and nominal line.
6. Hold up time is measured from the end of the last charging pulse to the time which the main output drops down to low limit of main output at rated load and nominal line.
7. Efficiency is measured at rated load and nominal line.

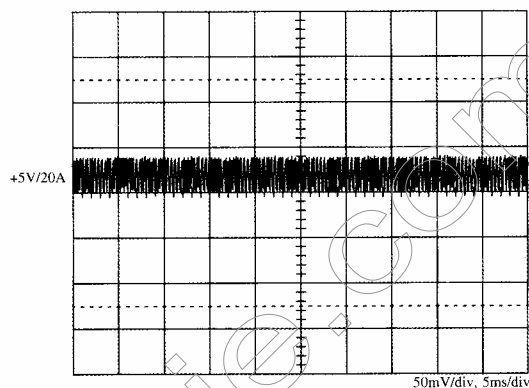


## Performance for SNP-Z106:

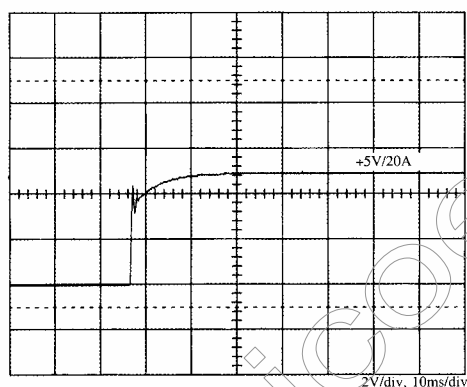
### 1. Switching frequency ripple



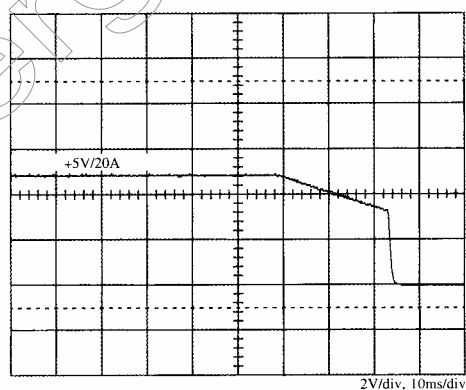
### 2. Line frequency ripple



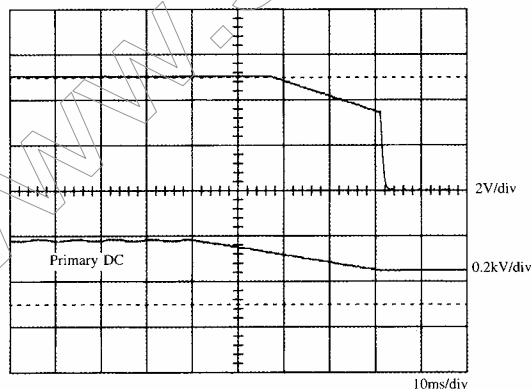
### 3. Output turn on wave form



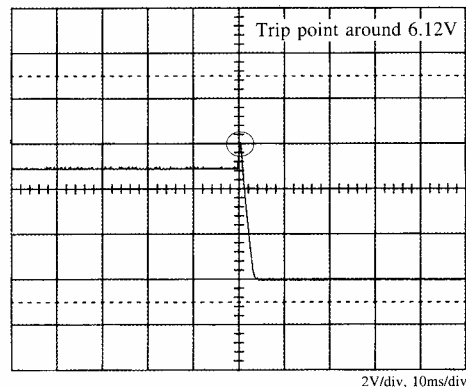
### 4. Output turn off wave form



### 5. Hold-up time



### 6. Over voltage protection

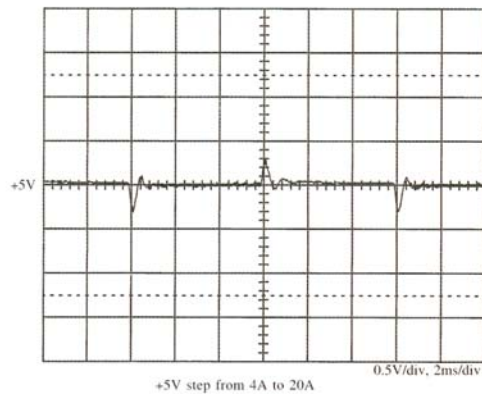




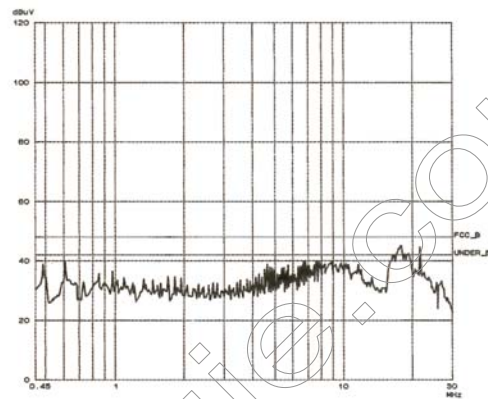
## General Purpose (Universal)

PFC + 100W  
SNP-Z10 Series

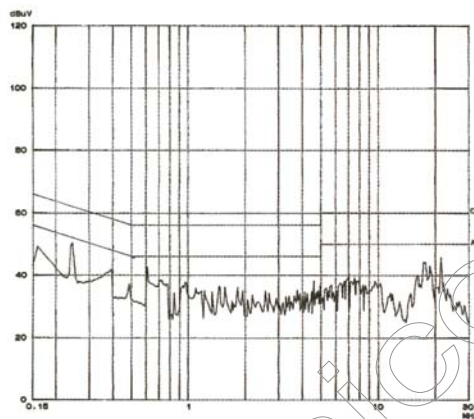
7. +5V step response



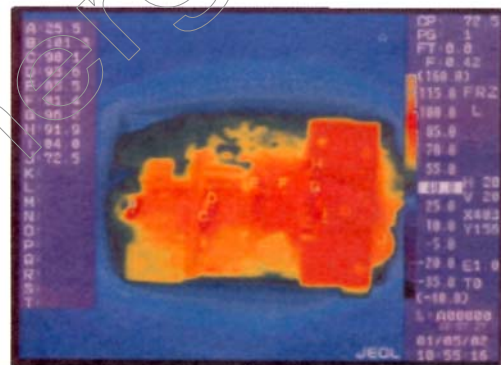
8. FCC B



9. EN55022 B



10. Thermal profile



Test condition:

M/N : SNP-Z106, Input : 104V

Output : 5V/20A, Ambient : 25.5°C