



**3.8" x 6.8" x 1.5"**

## General Specifications:

Input voltage ..... 90 VAC to 264 VAC  
 Input frequency ..... 47 Hz to 63 Hz  
 Power factor ..... > 0.93  
 Inrush current ..... < 30A at 115VAC  
 (cold start at 25°C) or < 60A at 230VAC  
 Efficiency ..... 82%~88% depends on models  
 Hold up time ..... 20 ms typical  
 at rated load and 115VAC  
 Over load protection ..... auto recovery  
 Short circuit protection..... auto recovery

## Features:

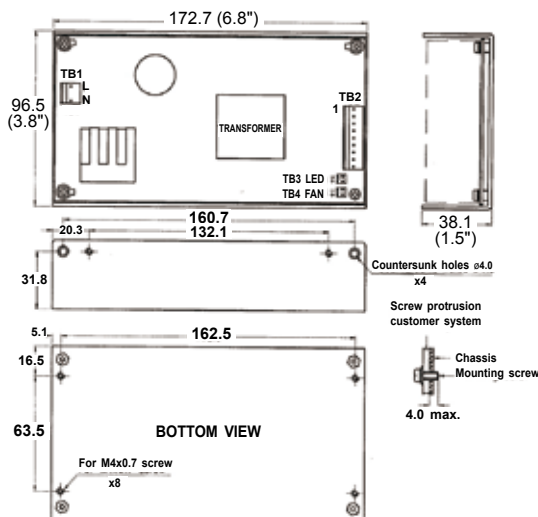
- With built-in PFC
- Only 1.5 inch height
- With ITE & Medical safety
- Efficiency between 82% to 88%
- Operation from 0°C to 70°C by convection

## Applications:

- For dental, laboratory products, pumps, monitors, sleep apnea devices and many other uses.

Over voltage protection ..... latch off  
 Operating temperature ..... 0°C to 70°C convection  
 derating: 2.5% / °C > 50°C  
 Cooling ..... free air convection  
 Storage temperature ..... -40°C to +85°C  
 EMI ..... FCC "B"  
 EN55022"B", EN55011"B"  
 EMS..... EN61000-4-2,-3,-4,-5,-6,-8,-11  
 Safety .....UL 60950-1, UL 60601-1  
 CSA C22.2 No. 60950-1, No. 601.1  
 EN 60950-1, EN 60601-1

## Mechanical Specifications:



### Notes:

1. Size:  
3.8" x 6.8" x 1.5"
2. Mounting Hole:  
63.5 x 162.5 (mm)
3. Connectors  
(a) TB1-AC input : Molex 5277-02A or equivalent  
(b) TB2-DC output : Molex 5273-12A and Molex 5273-09A  
(c) TB3-LED : Molex 5045-02A or equivalent for all models  
(d) TB4-FAN : Molex 5045-02A or equivalent for all models  
(e) TB4-Remote sense : Molex 5045-02A or equivalent for SNP-Z156
4. Output Pin assignment:

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12
SNP-Z151	-12V	+5V	+5V	+5V	GND	GND	GND	GND	GND	+12V	+12V	+12V
SNP-Z15E	+12V	-12V	+3.3V	+3.3V	+3.3V	GND	GND	GND	GND	GND	+5V	+5V
SNP-Z153	NC	+5V	+5V	+5V	GND	GND	GND	GND	GND	+12V	+12V	+12V
SNP-Z156	+5V	+5V	+5V	+5V	+5V	+5V	GND	GND	GND	GND	GND	GND
SNP-Z157	+5V	GND	GND	GND	GND	+12V	+12V	+12V	+12V			
SNP-Z157-1	NC	GND	GND	GND	GND	+12V	+12V	+12V	+12V			
SNP-Z158	+5V	GND	GND	GND	GND	+15V	+15V	+15V	+15V			
SNP-Z158-1	NC	GND	GND	GND	GND	+15V	+15V	+15V	+15V			
SNP-Z159	+5V	GND	GND	GND	GND	+24V	+24V	+24V	+24V			
SNP-Z159-1	NC	GND	GND	GND	GND	+24V	+24V	+24V	+24V			
SNP-Z15T	NC	GND	GND	GND	GND	+48V	+48V	+48V	+48V			
SNP-Z15F	+12V	-12V	+5V	+5V	+5V	GND	GND	GND	GND	GND	GND	+24V

5. Packing:  
Net weight: 555 g / unit  
Gross weight: 13.7 kg / carton, 20 units / carton  
Carton size (mm): 453 (L) x 362 (W) x 279 (H)

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**10 years Warranty (contact Skynet's Distributors for details)**

## Output Specifications:

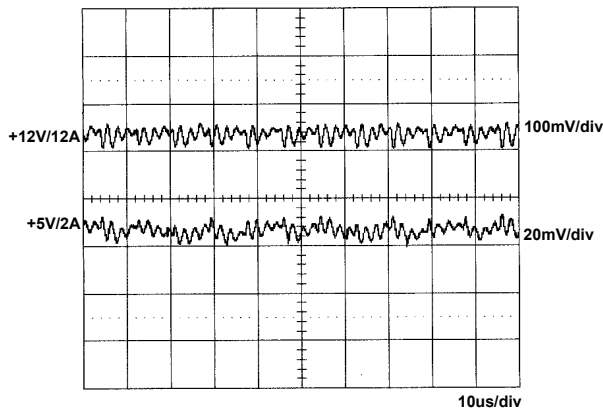
MODEL NO.	OUTPUT RAIL	LOAD				VOLTAGE ACCURACY	RIPPLE NOISE	LINE REG.	LOAD REG.	EFFICIENCY TYPICAL
		MIN.	RATED	MAX.	PEAK					
SNP-Z151	+5V	0A	10A	13A	15A	+4.9V~+5.1V	1%	±0.5%	±3%	83%
	+12V	0A	7A	10A		+11.4V~+12.6V	1%	±0.5%	±3%	
	-12V	0A	0.5A			-11.4V~-12.6V	1%	±0.5%	±5%	
SNP-Z15E	+3.3V	0A	10A			+3.2V~+3.4V	50mV	±0.5%	±3%	81%
	+5V	0A	8A			+4.75V~+5.25V	1%	±0.5%	±3%	
	+12V	0A	3.5A			+11.4V~+12.6V	1%	±0.5%	±5%	
	-12V	0A	0.5A			-11.2V~-12.6V	1%	±0.5%	±5%	
SNP-Z153	+5V	0A	10A	13A	15A	+4.9V~+5.1V	1%	±0.5%	±3%	83%
	+12V	0A	7A	10A		+11.4V~+12.6V	1%	±0.5%	±3%	
SNP-Z156	+5V	0A	28A			+4.95V~+5.05V	1%	±0.5%	±1%	82%
SNP-Z157	+12V	0A	12A		17.5A	+11.8V~+12.2V	1%	±0.5%	±1.5%	84%
	+5V	0A	2A			+4.9V~+5.1V	1%	±0.5%	±1.5%	
SNP-Z157-1	+12V	0A	13A		17.5A	+11.8V~+12.2V	1%	±0.5%	±1.5%	85%
SNP-Z158	+15V	0A	9.6A		14A	+14.85V~+15.15V	1%	±0.5%	±1.5%	85%
	+5V	0A	2A			+4.9V~+5.1V	1%	±0.5%	±1.5%	
SNP-Z158-1	+15V	0A	10A		14A	+14.85V~+15.15V	1%	±0.5%	±1.5%	85%
SNP-Z159	+24V	0A	6A		8.8A	+23.76V~+24.24V	1%	±0.5%	±1.5%	86%
	+5V	0A	2A			+4.9V~+5.1V	1%	±0.5%	±1.5%	
SNP-Z159-1	+24V	0A	6.5A		8.8A	+23.76V~+24.24V	1%	±0.5%	±1.5%	86%
SNP-Z15T	+48V	0A	3.2A		4.6A	+47.6V~+48.4V	1%	±0.5%	±1%	88%
SNP-Z15F	+5V	0A	8A	12A	7A	+4.9V~+5.1V	1%	±0.5%	±3%	84%
	+24V	0A	3A	4A		+22.8V~+25.2V	100mV	±0.5%	±3%	
	+12V	0A	2A			+11.4V~+12.6V	100mV	±0.5%	±5%	
	-12V	0A	0.5A			-11.4V~-12.6V	100mV	±0.5%	±5%	

### Note:

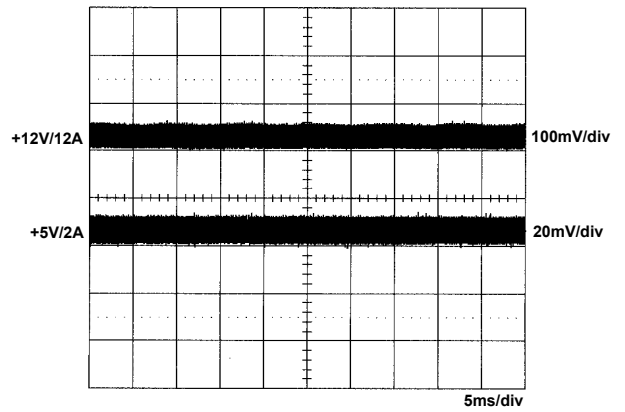
- Each output can last for 8 seconds without shut down.
- At factory, all outputs in 60% rated load condition, each output is checked to be within voltage accuracy range while the main output is setting to within the specified accuracy range at rated load.
- Line regulation is defined by changing ±10% of input voltage from nominal line at rated load.
- Load regulation is defined by changing ±40% of measured output load from 60% rated load at another output set to 60% rated load.
- Ripple & noise is measured by using 15MHz bandwidth limited oscilloscope and terminated each output with a 0.47uF capacitor at rated load and nominal line.
- 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.
- Efficiency is measured at rated load and nominal line.
- Model Selection:  
SNP-Z15x is for both of ITE application and medical application.

## Performance for SNP-Z157:

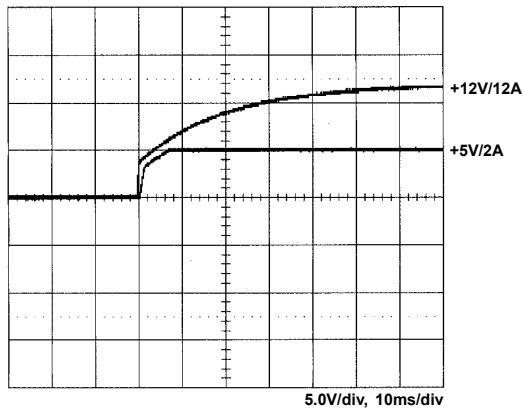
### 1. Switching frequency ripple



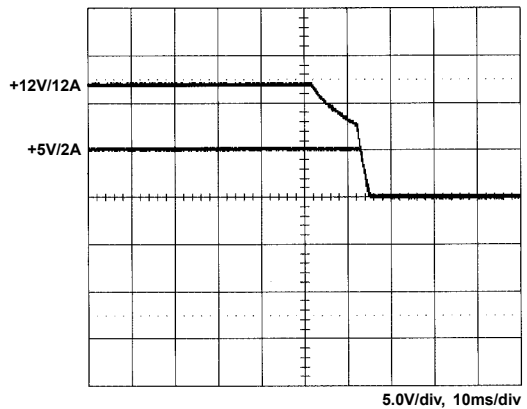
### 2. Line frequency ripple



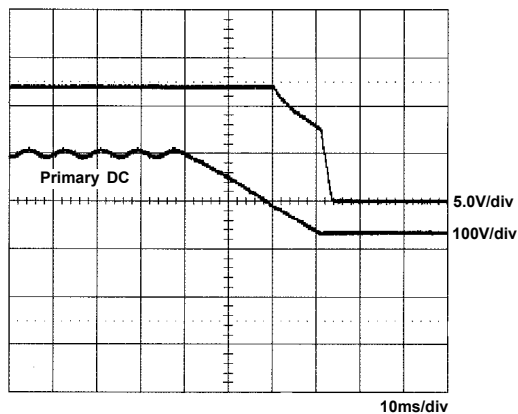
### 3. Output turn on wave form



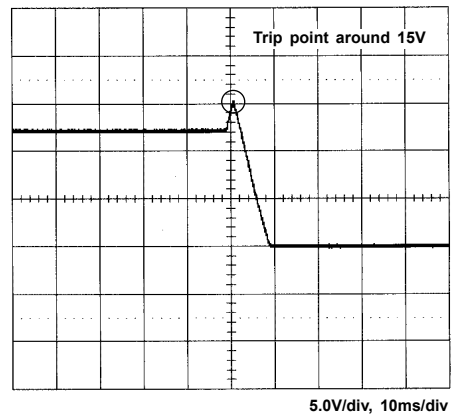
### 4. Output turn off wave form



### 5. Hold-up time

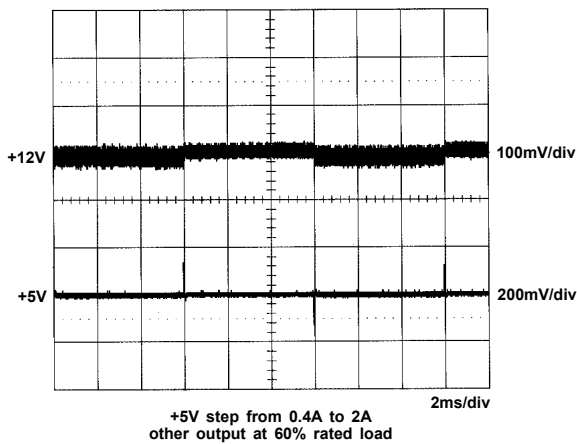


### 6. Over voltage protection

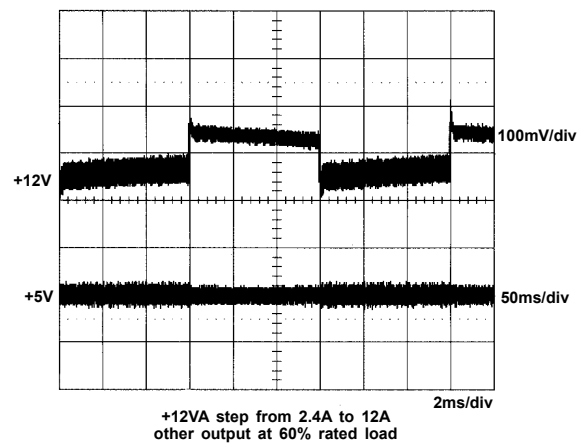


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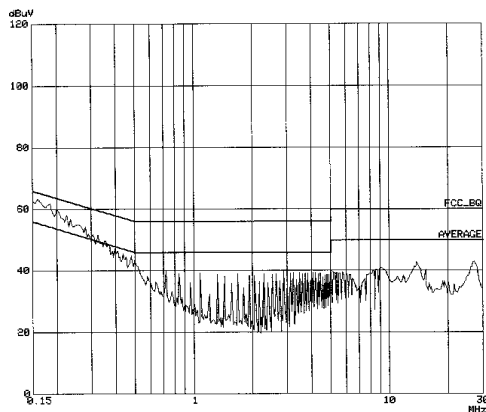
### 7. +5V step response



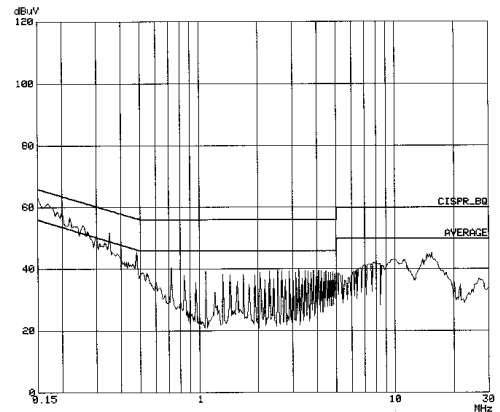
### 8. +12V step response



### 9. FCC B



### 10. EN 55022 B



### 11. Power derating curve

