

ITE & Medical Applications (Universal)

Rated 150W Peak 220W **SNP-Z15 Series**



Features:

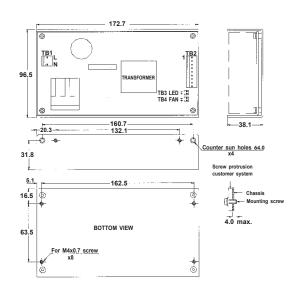
- With built-in PFC
- Only 1.5 inch height
- 3.9 Watt per cubic inch
- With ITE & Medical safety
- Efficiency between 79% to 88%
- Operation from 0°C to 70°C by convection

General Specifications:

Input voltage	
Input frequency	47 Hz to 63 Hz
Power factor	>0.93
Inrush current	less than 30A at 115VAC
	less than 60A at 230VAC
	cold start, 25°C
Efficiency	79%~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
Over voltage protection	1latch off
Operating temperature	0°C to 70°C convection
	derating: $2.5\% / ^{\circ}\text{C} > 50^{\circ}\text{C}$
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:

Dimensions shown in mm as left. Tolerance: +/-1mm (Excluding cables).

Dimensions shown in mm as left. Tolerance: +/Size:
96.5 X 172.7 X 38.1 (mm)
3.8" X 6.8" X 1.5"
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)
Connectors

Connectors
(a) TB1-AC input
(b) TB2-DC output
(c) TB3-LED
(d) TB4-FAN

Molex 5277-02A or equivalent Molex 5273-12A and Molex 5273-09A Molex 5045-02A or equivalent for all models Molex 5045-02A or equivalent for all models Molex 5045-02A or equivalent for SNP-Z156

(e) TB4-Remote sense 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	+12\
SNP-Z156	+5V	+5V	+5V	+5V	+5V	+5V	GND	GND	GND	GND	GND	GNE
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	+24

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Output Specifications:

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

Note:

- 1. Each output can last for 8 seconds without shut down.
- 2. 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.
- 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 ±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 0.47uF 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.

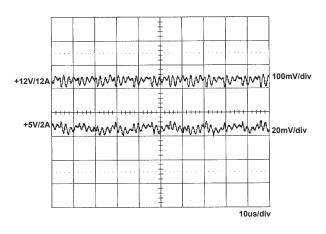
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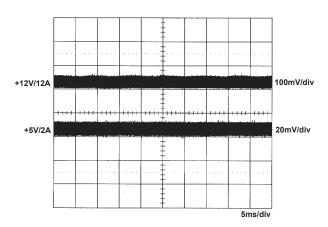
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Performance for SNP-Z157:

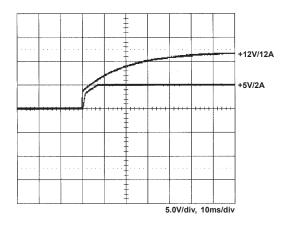
1. Switching frequency ripple



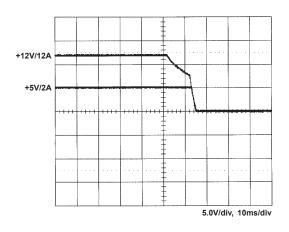
2. Line frequency ripple



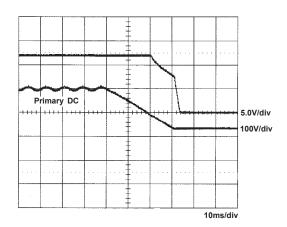
3. Output turn on wave form



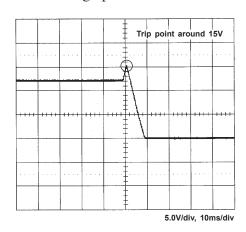
4. Output turn off wave form



5. Hold-up time



6. Over voltage protection



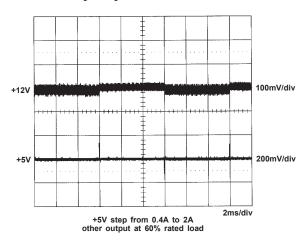
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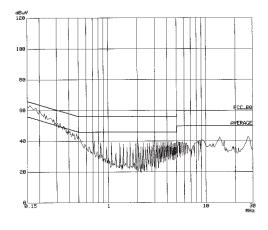
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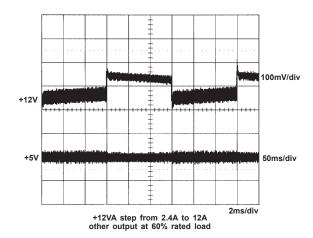
7. +5V step response



9. FCC B



8. +12V step response



10. EN 55022 B

