

# SNP-HF6 Series

60 W AC/DC Switch Mode Power Supplies – Open Frame

CoolPower  
Solutions

- 2" x 3.17" x 0.95" compact size
- Flexible installation for Class I/II
- -40°C to 70°C convection cooling
- Operation from -20°C to 70°C
- Up to 12,000uF loading start-up
- Eco-friendly design



## Electrical specifications

Input	Voltage	90-264 VAC
	Frequency	47-63 Hz
	Inrush Current	< 60 A at 230 VAC, cold start, 25°C
Output	Output Power	60 W, Max. 72 W, Peak 96 W
	Voltage (VDC)	See table below
	Current (A) max.	See table below
	Efficiency	Average 87% (A-Models 85%)
	Hold-up Time	16 ms typical
	No-load power consumption	< 0.5 W
Protection	Over Load Protection	Auto recovery
	Over Voltage Protection	Latch off
	Short Circuit Protection	Auto recovery
Environment	Operating Temperature	-40°C ... +70°C (derating: 2.5% / °C > 50°C)
	Storage Temperature	-40°C ... +85°C
	Humidity	5% to 90% RH, non-condensing
Physical	Dimension (L x W x H)	50,8 x 80,5 x 24,0 mm
	Weight	160 g
	Cooling	Convection cooling, Max. 72W for forced air cooling
	Connections	AC input: JST B2P3-VH or equivalent DC output: JST B2P-VH or equivalent
Safety & EMC	EMI	EN55011 "B", EN61000-3-3
	Harmonics	EN61000-3-2, class A
	EMS	EN61000-4-2,-3,-4,-5,-6,-8,-11
	Safety Approvals	UL/CSA/EN60950-1, 2nd edition ANSI/AMMI/CSA/EN60601-1, 3rd edition CB report, CE mark, RM report/file
Energy Saving		Energy Star v.6 ErP regulation EC (No) 1275/2008

## Applications

Suitable for dental, laboratory products, pumps, monitors, sleep apnea devices and many other uses.

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## Models

Model	Output	Load				Initial accuracy*	Step Efficiency			Average Efficiency
		Min	Rated	Max	Peak		20%	50%	100%	
SNP-HF67	+12 V	0 A	5.0 A	6.0 A	8.0 A	+11.9V~+12.1V	88%	89%	86%	87%
SNP-HF67-A	+12 V	0 A	5.0 A	6.0 A	8.0 A	+11.9V~+12.1V	83%	87%	85%	85%
SNP-HF68	+15 V	0 A	4.0 A	4.8 A	6.1 A	+14.9V~+15.1V	88%	89%	86%	87%
SNP-HF68-A	+15 V	0 A	4.0 A	4.8 A	6.1 A	+14.9V~+15.1V	83%	87%	85%	85%
SNP-HF69	+24 V	0 A	2.5 A	3.0 A	4.0 A	+23.8V~+24.2V	88%	89%	86%	87%
SNP-HF69-A	+24 V	0 A	2.5 A	3.0 A	4.0 A	+23.8V~+24.2V	83%	87%	85%	85%
SNP-HF6T	+48 V	0 A	1.3 A	1.5 A	2.0 A	+47.6V~+48.4V	88%	89%	86%	87%
SNP-HF6T-A	+48 V	0 A	1.3 A	1.5 A	2.0 A	+47.6V~+48.4V	83%	87%	85%	85%

## Notes

### 1. Output Load:

Rated 60W for convection cooling; max. 72W for forced air cooling.

### 2. Peak Load Duration:

Peak 96W can last for 5 sec. especially suitable for motor starting.

### 3. Engineering Specification:

Detailed specification and relative test method are mentioned in engineering specification. For business, engineering specification by model must be used.

### 4. Standby Power Consumption with System:

This is required by ENERGY STAR in U.S. and ErP regulation in Europe for appliances such as computers and displays. The latest requirement is measured input power to be less than 0.5W with system.

### 5. Audible Noise:

To meet standby power consumption requirement, there are two ways depend on current technology. One is frequency reduction; another one is burst.

However, since both of the operating frequency will move into audio frequency, the audible noise could be observed.

### 6. Step Efficiency and Average Efficiency:

Test conditions in step efficiency are referred to 3.2.2 IPS (Internal Power Supply) of ENERGY STAR program requirements for computers. ENERGY STAR required for efficiency @ 20%, 50%, 100% load is 82%, 85%, 82%; average efficiency is the average of step efficiency.

### 7. Class I/II Installation:

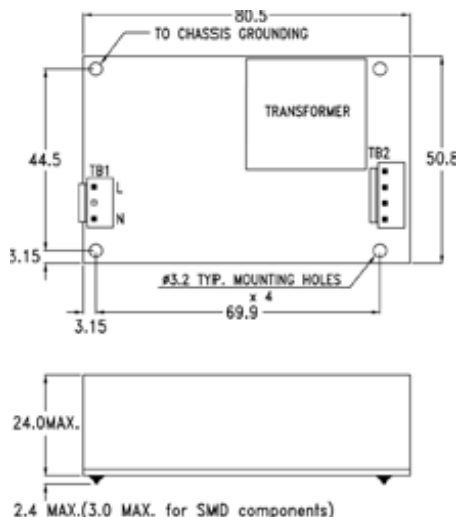
From safety point of view, the isolation of Class II (without safety ground) is stricter than that of Class I (with safety ground). So PSU could be designed

to meet Class II safety. But for EMC, it depends. So PSU has to be tested with both installations.

### 8. Model Ordering Table:

Safety:	Application w/o Audible Noise	Application Energy Saving
ITE & Medical	SNP-HF6x-A	SNP-HF6x

## Dimensions



## Output Pin assignment:

Pin No.	1	2	3	4
SNP-HF67	+12V	+12V	GND	GND
SNP-HF68	+15V	+15V	GND	GND
SNP-HF69	+24V	+24V	GND	GND
SNP-HF6T	+48V	+48V	GND	GND