SPECIFICATION

For

SWITCHING POWER SUPPLY

M/N : SNP-P309

STANDARD PRODUCT

Reviewed by Product Engineer	Jim 11-14-19	Jim, 2-22-22	Jim 8-12-23			
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SKYNET ELECTRONIC			**LAST REV. NO.**			

1.0 INTRODUCTIONS

The SNP-P30X series provide 300Watt with convection cooling in a low profile(3.7"x6.6"x 1.46"). By forced air cooling, the max. output can reach to 420Watt and provide peak power to 600W within 5seconds. Even more built-in high torque current function is suitable for motor driver, loudspeaker or briefly high pulse current applications. More features as bellow: Variable Fan speed and Remote sense function.
The SNP-P309 is certified to Medical and ITE safety whilst low leakage current for Type BF.

2.0 INPUT SPECIFICATIONS

2.1 Input voltage

The range of input voltage is from 90VAC to 264VAC. Nominal line 115VAC/230VAC.

2.2 Input frequency

The range of input frequency is from 47Hz to 63Hz.

2.3 Input current

The maximum input current is 5A at 115VAC or 2.5A at 230VAC.

2.4 Inrush current

The inrush current will not exceed 35A at 115VAC input or 70A at 230VAC input, cold start at 25°C. (EMI capacitors excluded)

3.0 OUTPUT SPECIFICATIONS

3.1 Load range

output	min. load	rated load	max. load	peak load	voltage range
+24V	0A	12.5A	17.5A	24A	21.6V to 26.4V

3.1.1 Factory adjustment

At factory, the output in 60% rated load and nominal line condition, the +24V output is set to between 23.9V and 24.1V.

At peak load and nominal line, the output can last for 5sec without shut down.

3.1.2 Total output power

+24V/300W with convection cooling, 300W~420W with 10CFM forced air cooling.

3.2 Ripple and noise

The peak to peak ripple and noise for +24V output is less than 1%Vo at rated load and nominal line. Measuring is done by 15MHz band width limited oscilloscope and terminated output with a 0.47uF +47uF capacitor.

3.3 Line regulation

The line regulation for +24V output is less than + -1% while measuring at rated load and + -10% of nominal line input voltage changing

3.4 Load regulation

The load regulation for +24V output is less than + -1% measuring are done by changing the measured output load + -40% from 60% rated load and nominal line

3.5 Capacitive load capability

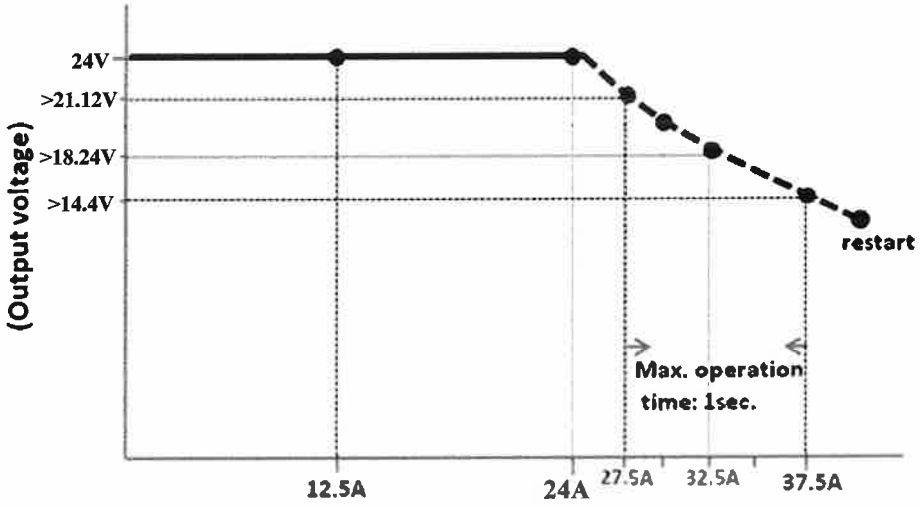
The capacitance load start-up capability can be up to 20000uF at rated load and nominal line.

3.6 Remote sense

The +24V output has remote sense capability , compensation for 0.5V lead drop max.

3.7 High torque capability

The output current can provide 300% rated current for up to 1000ms, and output voltage can keep above 60% output voltage, but average current should not exceed rated current.



4.0 GENERAL FEATURES

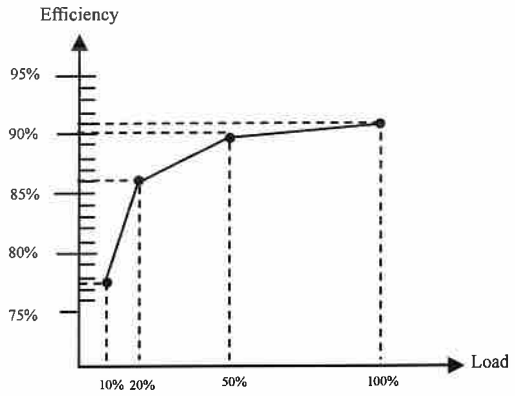
4.1 Efficiency

The efficiency is typical 91% while measuring at nominal line and rated load.

4.2 Step efficiency

> 77.5 % at 10% rated load
> 86% at 20% rated Load
> 90 % at 50% rated Load
> 91% at 100% rated Load

4.3 Efficiency Curve



4.4 Hold up time

The hold up time is higher than 18ms at 115VAC input and rated load, which is measured from the end of the last charging pulse to when the main output drops down to 95% output voltage.

4.5 Protection

4.5.1 Over current protection

Trip point :110% to 130% Maximum load.
Protection mode : Auto-recovery.

4.5.2 Short protection

Protection mode : Auto-recovery

4.5.3 Over voltage protection

+24V trip point :+26.2V to 31V.
Protection mode : Latch-off.

4.5.4 The power supply has thermal protection

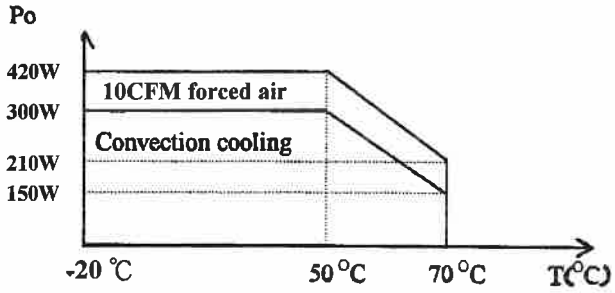
4.6 Fan speed control

The Fan output is only activated > 50% ±10% of rated load.

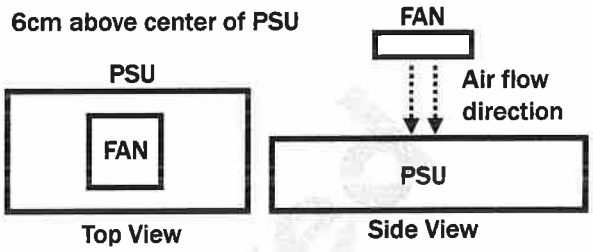
5.0 ENVIRONMENT SPECIFICATIONS

5.1 Operating temperature

-20°C to 70°C, -20°C to 50°C no derating, above 50°C, derate at 2.5% per degree from 50°C to 70°C.



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

>200Khrs(based on MIL-HDBK-217F,rated load, 50℃)

6.0 INTERNATIONAL STANDARDS

6.1 Safety standards (Label voltage: 100Vac to 240Vac)

UL/CSA/ EN 60950-1
UL/CSA/ EN 62368-1
ANSI/AMMI/CSA/IEC/EN 60601-1

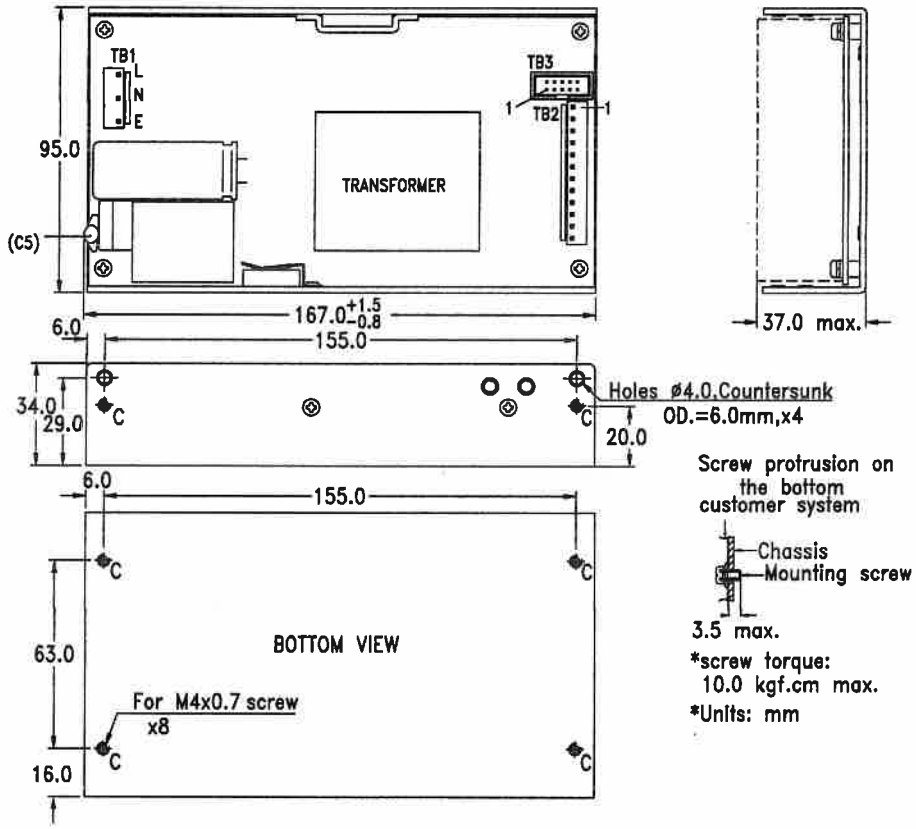
6.2 EMI standards

FCC level "B"
EN55022, level "B"
EN55011, level "B"
EN 61000-3-2 class "D" for loads > 110W

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	4kV	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	30% dips 500ms,	Criterion A
	60% dips 200ms,	Criterion B
	100% dips 10ms,	Criterion A
	100% dips 20ms,	Criterion B
	100% dips5000ms,	Criterion B

7.0 MECHANICAL SPECIFICATION



7.1 Dimensions

Size : 167mm(L) x95mm(W) x37mm(H),
Tolerance is +-0.4mm between mounting holes, and +-0.8mm for other dimension.

7.2 Connectors

TB1-- AC input : using JST B5P-VH withdraw 2 pins or equivalent; mating with JST VHR-5N or equivalent.

TB2-- DC Output : using TKP PVHI-12 (3.96mm pith) or equivalent ; mating with TKP HVH-12 or equivalent.

TB3--SIGNALS : 2x5 (10pins) 0.1'pitch

7.3 TB2 pin assignment

Pin 1~6 +V 7~12 GND

7.4 TB3 pin assignment

Pin				
	1. NC.	4. -FAN	7. NC.	10. +RS
	2. NC.	5. NC	8. NC.	
	3. +FAN	6. NC	9. –RS	

7.5 Case material

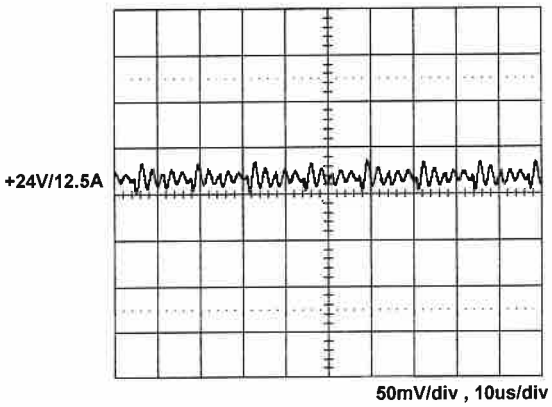
Aluminum , thickness 2.0mm

7.6 Packing

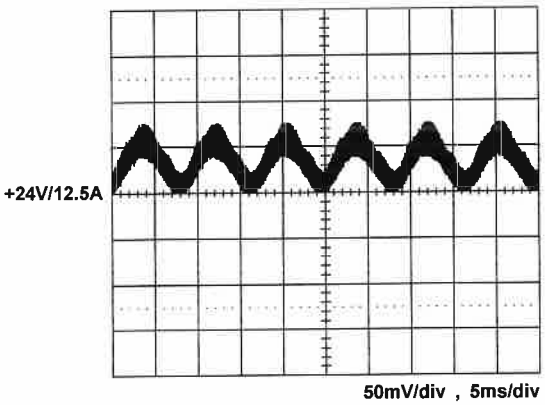
Net weight : 640g approx. /unit
Carton size(mm) : 453 (L) x 362 (W) x 279 (H)
Quantity : 20 units / carton
Gross weight : 15.2kg approx. / carton

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

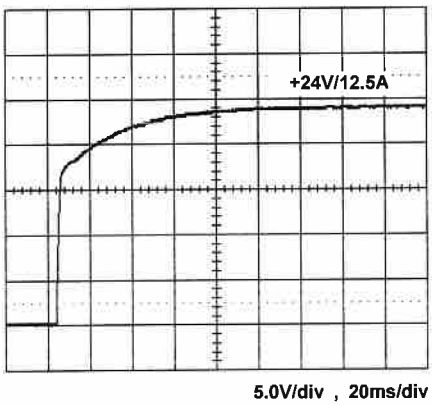
8.1 Switching frequency ripple



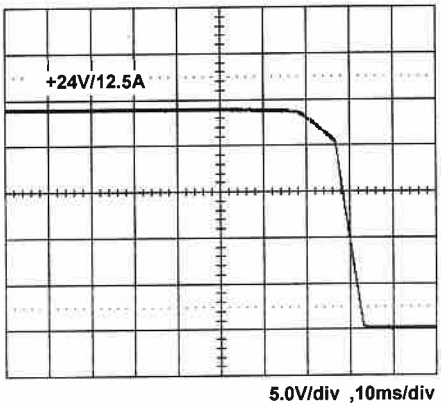
8.2 Line frequency ripple



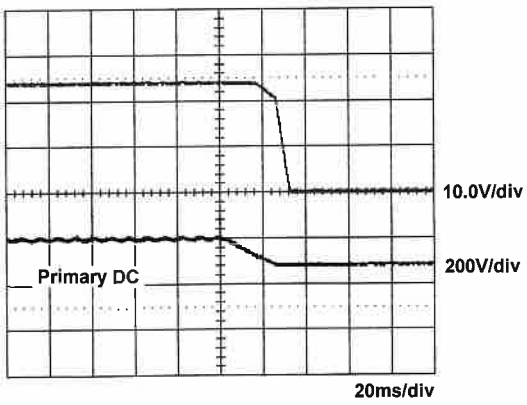
8.3 Output turn on wave form



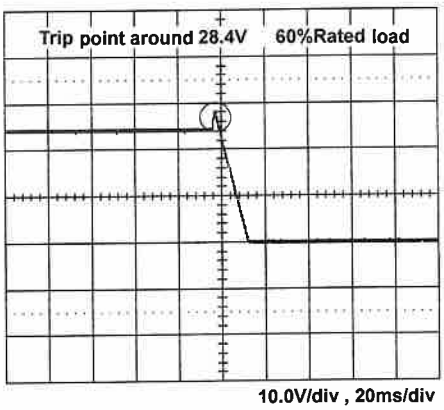
8.4 Output turn off wave form



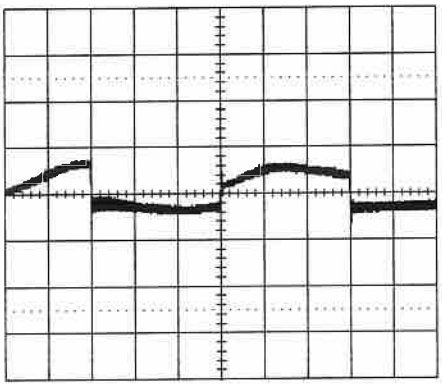
8.5 Hold-up time



8.6 Over voltage protection

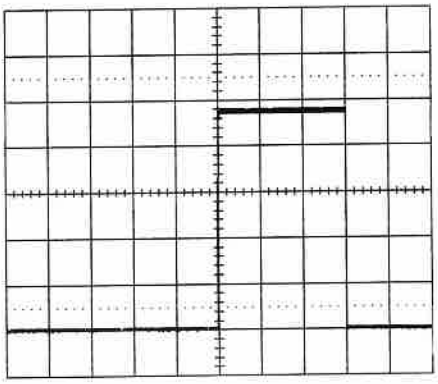


8.7 +24V Step response

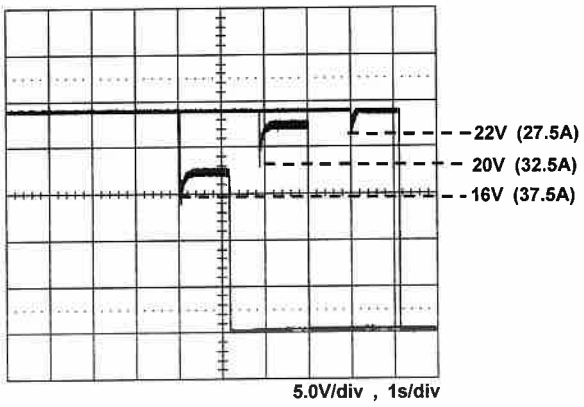


+24V step from 2.5A to 12.5A

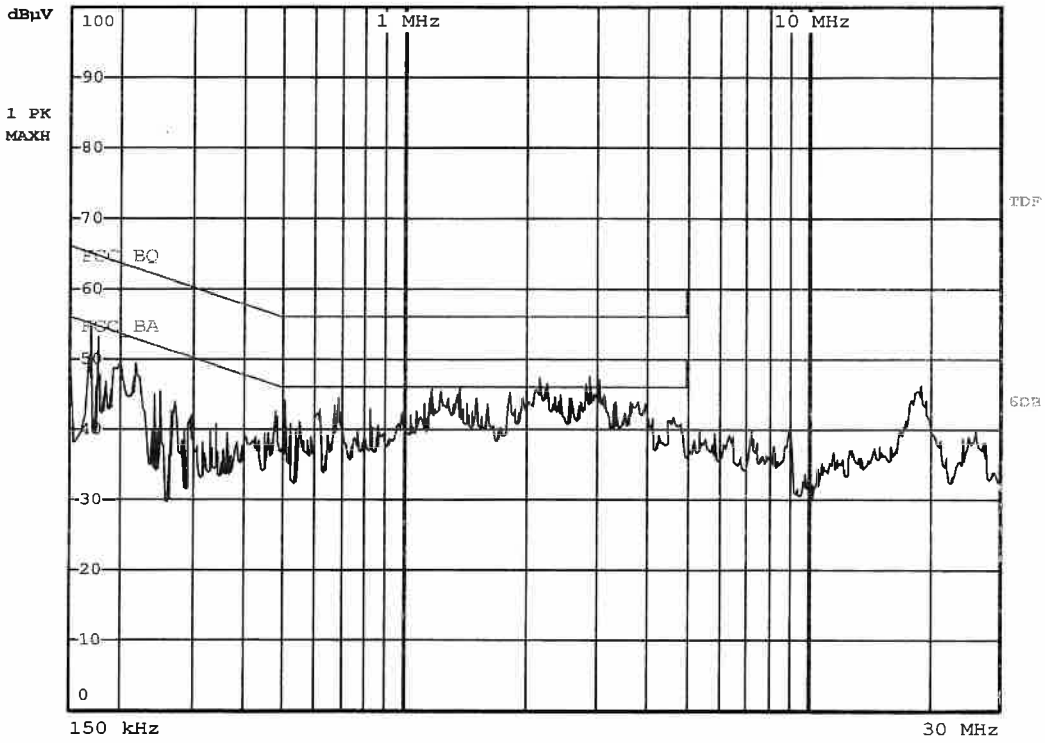
8.8 Peak Load



8.9 High torque capability



8.10 FCC "B" QP performance



8.11 EN55011 22 "B" QP performance