

規格書

SPECIFICATION

品名 SWITCHING POWER SUPPLY

STYLE NAME :

型號 MHU2-5400V

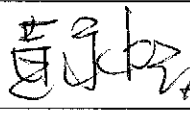

MODEL NO. :

料號

PART NO. :

版次 A1

REVISION :

APPROVE 核准	 AUG. 20, 2008	正式 資料 用 章	
CHECK BY 審核	陳威列 AUG. 20, 2008		
FORM MAKER 經辦	李嘉雯 AUG. 20, 2008		

新巨企業股份有限公司
電源事業處
ZIPPY TECHNOLOGY CORP.
POWER DIVISION

10F, NO. 50 MIN CHYUAN RD.,
SHIN-TIEN CITY, TAIPEI HSIEN,
TAIWAN, R.O.C.
TEL. : +886(2)29188512
FAX. : +886(2)29134969

MODEL NO. MHU2-5400V

- 1.0 Scope
- 2.0 Input requirements
 - 2.1 Voltage
 - 2.2 Frequency
 - 2.3 Stead-state current
 - 2.4 Inrush current
 - 2.5 Power factor correction
- 3.0 Output requirements
 - 3.1 DC load requirements
 - 3.2 Regulation and protection
 - 3.3 Ripple and noise
 - 3.3.1 Specification
 - 3.3.2 Ripple voltage test circuit
 - 3.4 Overshoot
 - 3.5 Efficiency
- 4.0 Protection
 - 4.1 Input
 - 4.2 Output
 - 4.2.1 OPP
 - 4.2.2 OVP
 - 4.2.3 Short
 - 4.2.4 Restart after protection
- 5.0 Power supply sequencing
 - 5.1 Turn on
 - 5.2 Hold up time
 - 5.3 Power off sequence
- 6.0 Signal requirements
 - 6.1 Power good (POK)
- 7.0 Environment
 - 7.1 Operation
 - 7.2 Insulation resistance
 - 7.3 Dielectric withstanding voltage
 - 7.4 Leakage current
- 8.0 Safety
 - 8.1 UL
 - 8.2 TUV

9.0 Reliability

9.1 Burn in

10.0 Mechanical requirements

10.1 Physical dimension

1.0 Scope

This specification defines the performance characteristics of a grounded, Ac input, 400 watts, 5 output level power supply. This specification also defines world wide safety requirements and manufactures process test requirements.

2.0 Input requirements

2.1 Voltage (sinusoidal) : 100~240 VAC full range(With $\pm 10\%$ tolerance).

2.2 Frequency

The input frequency range will be 47hz~63hz.

2.3 Steady-state current

6A/3A at any low/high range input voltage.

2.4 Inrush current

20/40 Amps @ 115/230 VAC

2.5 Power factor correction

The power supply shall incorporate universal power input with active power factor correction, which shall reduce line harmonics in accordance with the EN61000-3-2 standards.
PFC can reach the target of 95% @230VAC, Full load.

3.0 Output requirements

3.1 DC load requirements

Normal Output voltage	Load current(A)		Regulation tolerance	
	Min.	Max.	Max.	Min.
+5V	0.5	18	+5%	-5%
+12V	2	32	+5%	-5%
-12V	0	0.5	+5%	-5%
+3.3V	0.5	18	+5%	-5%
+5Vsb	0.1	2	+5%	-5%

Total power :400W(MAX)

+5V AND +3.3V Total Max.:30A

When doing the cross regulation test (one output channel at high load and the other output channels at low load), it is requested to set the higher output channel at 80% max. of its spec., and the lower output channels at 20% max. of theirs.

3.2 Regulation

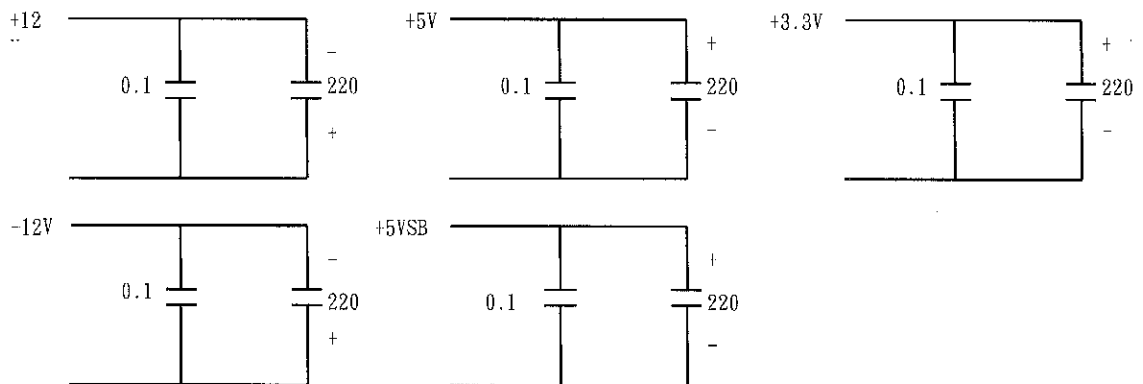
Output DC voltage	Line regulation
+5V	±50mV
+12V	±50mV
-12V	±50mV
+3.3V	±50mV
+5Vsb	±50mV

3.3 Ripple and noise

3.3.1 Specification

+5V	50mV (P-P)
+12V	120mV (P-P)
-12V	120mV (P-P)
+3.3V	50mV (P-P)
+5Vsb	50mV (P-P)

3.3.2 Ripple voltage test circuit



0.1 uf is ceramic the other is tantalum.
Noise bandwidth is from DC to 20MHz

3.4 Overshoot

Any overshoot at turn on or turn off shall be less 10% of the nominal voltage value , all output shall be within the regulation limit of section 3.2 before issuing the power good signal of section 6.0.

3.5 Efficiency

Power supply efficiency typical 80-85% at 25 °C 115V FULL LOAD .

3.6 Typical Distribution of Efficiency

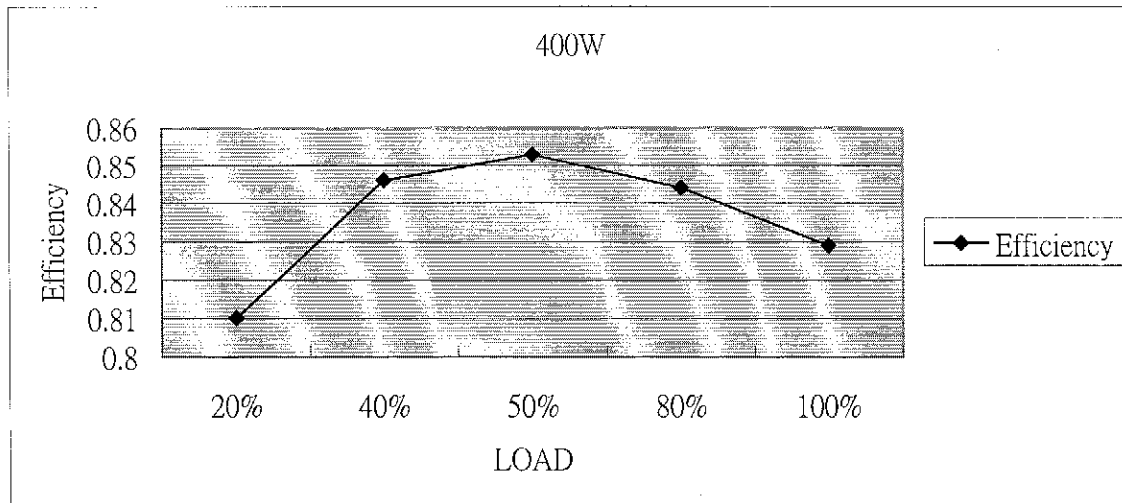
LOAD(20%)					
Output	+5V	+3.3V	+12V	-12V	5VSB
Load Current	2.62A	2.62A	4.66A	0.07A	0.29A
Voltage(Rms)	5.1V	3.33V	12.15V	11.98V	5.12V
P in(AC in 115V)	100W				
EFF.	81%				

LOAD(40%)					
Output	+5V	+3.3V	+12V	-12V	5VSB
Load Current	5.24A	5.24A	9.32A	0.15A	0.58A
Voltage(Rms)	5.08V	3.3V	12.12V	12V	5.09V
P in(AC in 115V)	191W				
EFF.	84.6%				

LOAD(50%)					
Output	+5V	+3.3V	+12V	-12V	5VSB
Load Current	6.55A	6.55A	11.65A	0.18A	0.73A
Voltage(Rms)	5.08V	3.37V	12.11V	12V	5.08V
P in(AC in 115V)	237W				
EFF.	85.3%				

LOAD(80%)					
Output	+5V	+3.3V	+12V	-12V	5VSB
Load Current	10.48A	10.48A	18.64A	0.29A	1.16A
Voltage(Rms)	5.06V	3.36V	12.06V	12.03V	5.04V
P in(AC in 115V)	381W				
EFF.	84.4%				

LOAD(100%)					
Output	+5V	+3.3V	+12V	-12V	5VSB
Load Current	15A	15A	21.7A	0.5A	2A
Voltage(Rms)	5.04V	3.38V	12.06V	12.04V	4.99V
P in(AC in 115V)	488W				
EFF.	82.9%				



P.S Any difference either on the DC output cable (i.e., length, wire gauge) or on the accurate of instruments will conclude different test result.

4.0 Protection

4.1 Input (primary)

The input power line must have an over power protection device in accordance with safety requirement of section 8.0

4.2 Output (secondary)

4.2.1 Over power protection

The power supply shall provide over power protection on the power supply latches all DC output into a shutdown state. Over power of this type shall cause no damage to power supply, after over load is removed and a power on/off cycle is initiated, the power supply will restart.

Trip point total power min. 120%, max. 160%.

4.2.2 Over voltage protection

If an over voltage fault occurs, the power supply will latch all DC output into a shutdown state.

	Min	Typical	Max
+3.3V	3.6V	4.1V	4.3V
+5V	5.6V	6.1V	6.5V
+12V	13.2V	14.3V	15.0V

4.2.3 Short circuit

A short circuit placed on +5V, +3.3V, +12V, -12V output to DC return shall cause no damage and power supply latch.

4.2.4 Restart after protection

After the protection mode (OPP/OVP) or short circuit is removed and a power on/off cycle is initiated, the power supply will restart. If the PSU is using AC power switch to control on/off, it has to be switched off at least for 5 seconds to restart the unit.

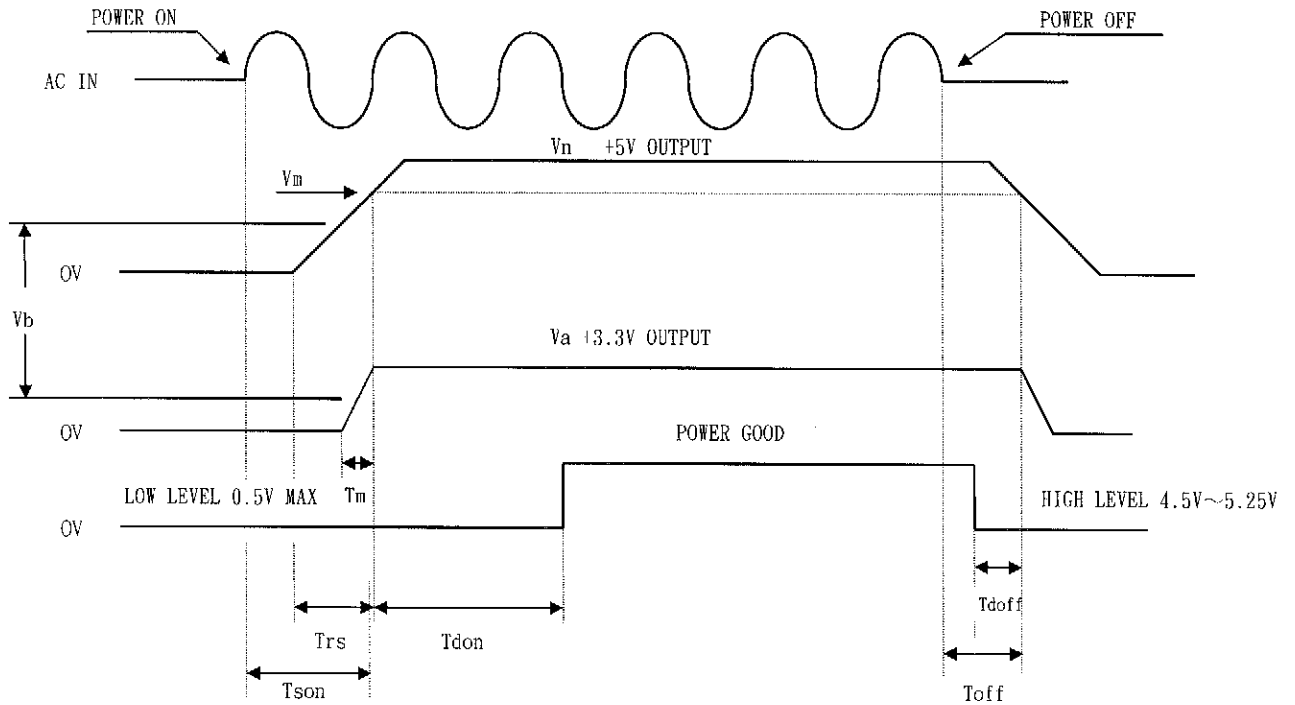
9.0 Reliability

9.1 Burn in

All products shipped to customer must be burn in. The burn in shall be performed at high line voltage.

10.0 Mechanical requirements

10.1 Physical dimension : 150 mm(D) * 140 mm(W) * 86 mm(H)



- V_n Nominal voltages +5V
- V_m Minimum voltages +4.5V
- V_a Nominal voltages +3.3V
- V_b +2.0V max
- T_{son} Switch on time (2000 ms. max.)
- T_{rs} +5V rise time (50ms. max.)
- T_{don} Delay turn-on (100ms. < T_{don} < 500ms.)
- T_{doff} Delay turn-off (1 ms. min.)
- T_{off} Hold up time (16ms Min)

《Figure 1》