

規格書


SPECIFICATION

品名 REDUNDANT SWITCHING POWER SUPPLY
STYLE NAME :

型號 M1K2-5C01V4H
MODEL NO. :

料號
PART NO. :

版次 A3
REVISION :

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Revision

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A2	5	3.2	DEC-15-2011	UPDATE Regulation
A2	6	4.2.1	DEC-15-2011	UPDATE Over power protection
A3	10	13	NOV-10-2014	UPDATE Output Derating

MODEL NO. M1K2-5C01V4H

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1.0 Scope

This specification defines the performance characteristics of a grounded , single-phase , 1200watts , 5 output level power supply. This specification also defines world wide safety requirements and manufactures process test requirements.

M1K2-5C01V4H power system is a 1+1 Redundant power system consisting of two M1K-2C00V power modules and one M1K2-5C01V4H power system frame.

2.0 Input requirements

2.1 Voltage (sinusoidal)

Full range 100~240 VAC(90V-264V)

2.2 Frequency

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

2.3 Steady-state current

15 / 7.5 amps maximum at any low/high range input voltage.

2.4 Inrush current

15/30 amps @ 115/230 VAC (at 25 degrees ambient cold start for each power unit)

2.5 Power factor correction

PFC can reach the target of 95% @110V,full load, following the standard of EN 61000-3-2

3.0 Output requirements

3.1 OUTPUT CHARACTERISTICS :

OUTPUT VOLTAGE	OUTPUT CURRENT		REGULATION
	MIN.	MAX.	LOAD
+5V	0A	36A	±5%
+12V	2A	100A	±5%
-12V	0A	0.5A	±5%
+3.3V	0A	31A	±5%
+5VSB	0.1A	3A	±5%

REMARK: 1. POWER MODULE TOTAL OUTPUT POWER OF +5V AND +3.3V NOT EXCEED 210W.

2. POWER MODULE TOTAL OUTPUT POWER NOT EXCEED 1200W.

3.2 Regulation

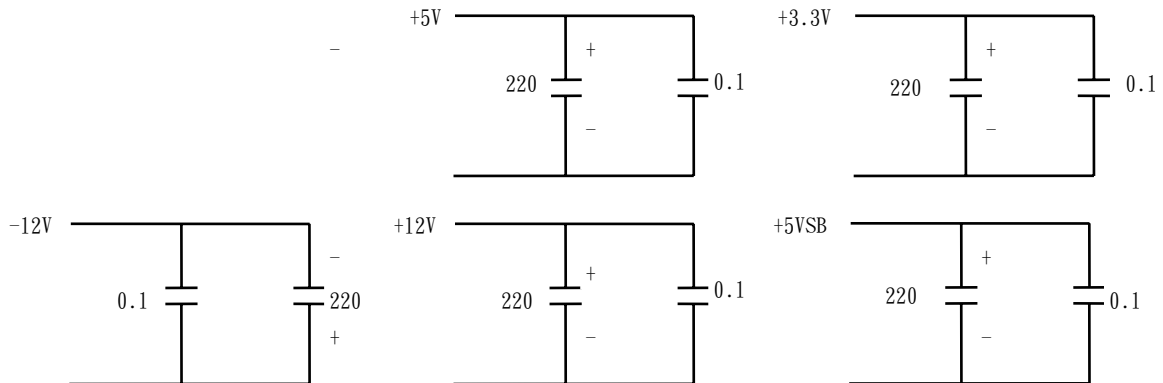
Output DC voltage	Line regulation
+5V	±50mV
12V	±120mV
-12V	±120mV
+3.3V	±50mV
+5Vsb	±50mV

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



0.1uf is ceramic the other is electrolytic capacitor .

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(per set)

Power supply efficiency typical 83 % at 115V , 12V/100A 5VSB/0.1A.
 Power supply efficiency typical 86% at 230V , 12V/100A 5VSB/0.1A.
 (Any difference either on the DC output cable (i.e., length, wire gauge) or on the accurate of instruments will conclude different test result. It will affects output voltage and efficiency.)

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 (OPP)

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. 105% , max. 150%(one unit power supply)

4.2.2 Over voltage protection (OVP)

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

+3.3V	:	3.7V	~	4.1V
+5V	:	5.7V	~	6.5V
+12V	:	12.8V	~	13.9V

4.2.3 Short circuit

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

5.0 Power supply sequencing

5.1 Power on (see Figure 1)

5.2 Hold up time

When power shutdown DC output +V must be maintain 10 msec in regulation limit at 115VAC input voltage.

6.0 Signal requirements

6.1 Power good signal (see Figure 1)

The power supply shall provide a "power good" signal to reset system logic , indicate proper operation of the power supply.

At power on , the power good signal shall have a turn on delay of at least 100ms but not greater than 500ms after the output voltages have reached their respective minimum sense levels.

7.0 Environment

7.1 Temperature

Operating temperature	0 to 50 degrees centigrade
Storage temperature	-20 to 80 degrees centigrade
Safety regulation temperature	Applied at room temperature (25°C)
Operating temperature from 0°C	should start from AC 90V

- 7.2 Humidity
- | | |
|------------------------|------------|
| Operating humidity | 20% to 80% |
| Non-operating humidity | 10% to 90% |
- 7.3 Insulation resistance
- | | |
|----------------------|----------------------------|
| Primary to secondary | : 20 meg. ohm min. 500 VDC |
| Primary to FG | : 20 meg. ohm min. 500 VDC |
- 7.4 Dielectric withstanding voltage
- For approval purpose :
- | | |
|----------------------|-----------------------|
| Primary to secondary | : 3KVAC for 1min. |
| Primary to FG | : 1500 VAC for 1 min. |
- For production purpose:
- | | |
|---------------|---------------------|
| Primary to FG | : 1500VAC for 1 sec |
|---------------|---------------------|

8.0 Safety

- 8.1 Underwriters laboratory (UL) recognition.
The power supply designed to meet UL 60950.
- 8.2 Canadian standards association (CUL) approval
The power supply designed to meet CSA 1402C & CSA 950.
- 8.3 TUV approval
The power supply shall be designed to meet TUV EN-60950.
- 8.4 CCC Standards
The power supply shall be designed to meet GB9254-2008, GB4943-2011, GB17625.1-2012.

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

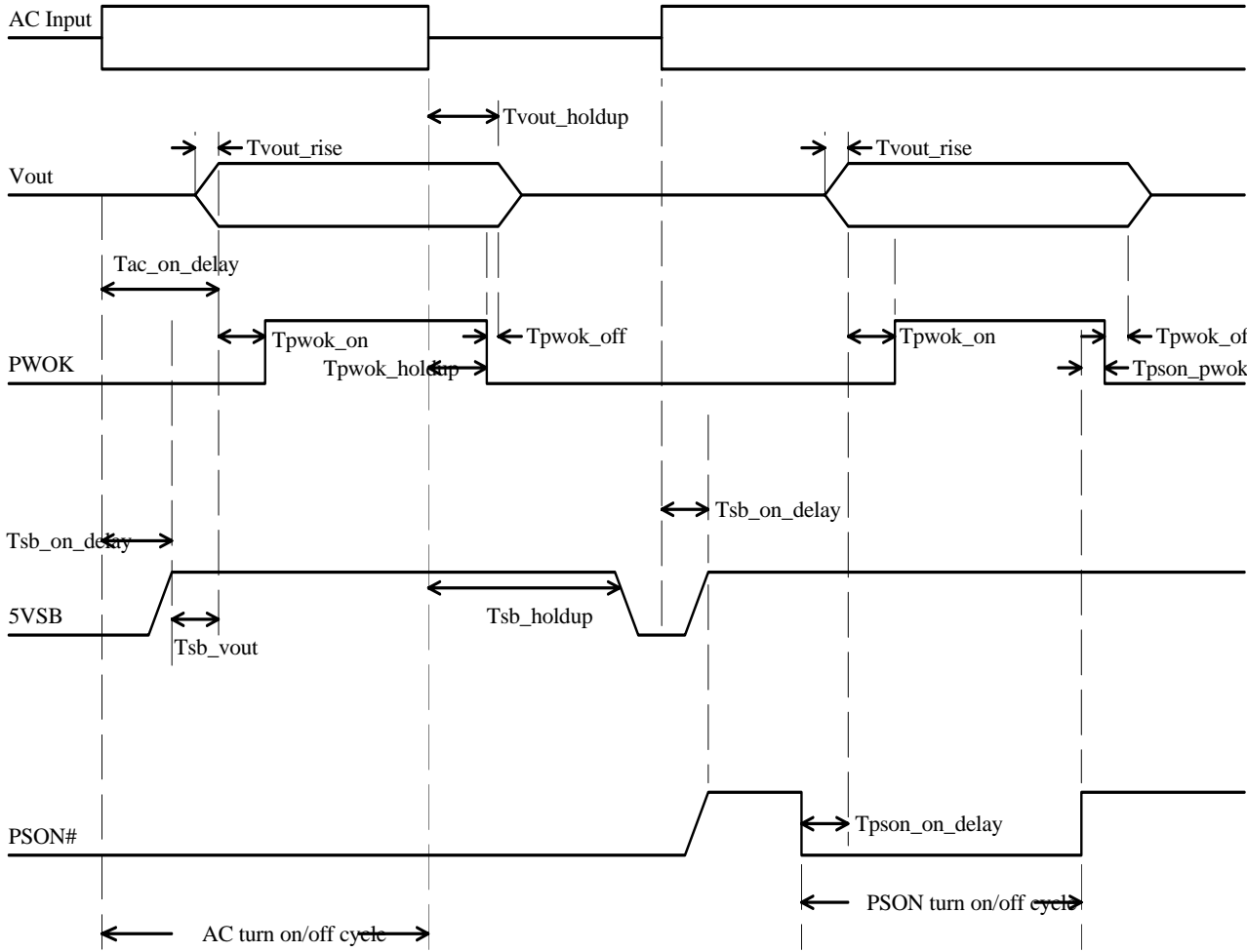
- 10.1 Physical dimension : 400 mm * 106mm * 41.3 mm(D*W*H)

11.0 Warning method

- 11.1 Audio alarm(buzzer sound , resetable).
- 11.2 Power defective signal delivery(TTL , low active).

12.0 Output voltage timing

Item	Description	MIN	MAX	UNITS
Tsb_on_delay	Delay from AC being applied to 5VSB being within regulation.		1500	ms
Tac_on_delay	Delay from AC being applied to all output voltages being within regulation.		2500	ms
Tvout_holdup	Time all output voltages stay within regulation after loss of AC.	11		ms
Tpwok_holdup	Delay from loss of AC to deassertion of PWOK.	10		ms
Tpson_on_delay	Delay from PSON# active to output voltages within regulation limits.	2	400	ms
Tpson_pwok	Delay from PSON# deactive to PWOK being deasserted.		50	ms
Tpwok_on	Delay from output voltages within regulation limits to PWOK asserted at turn on.	100	500	ms
Tsb_vout	Delay from 5VSB being in regulation to O/Ps being in regulation at AC turn on.	5	1000	ms
Tsb_holdup	Time 5VSB output voltage stays within regulation after loss of AC.	70		ms
Tvout_rise	Output voltage rise time from each main output.	2	20	ms

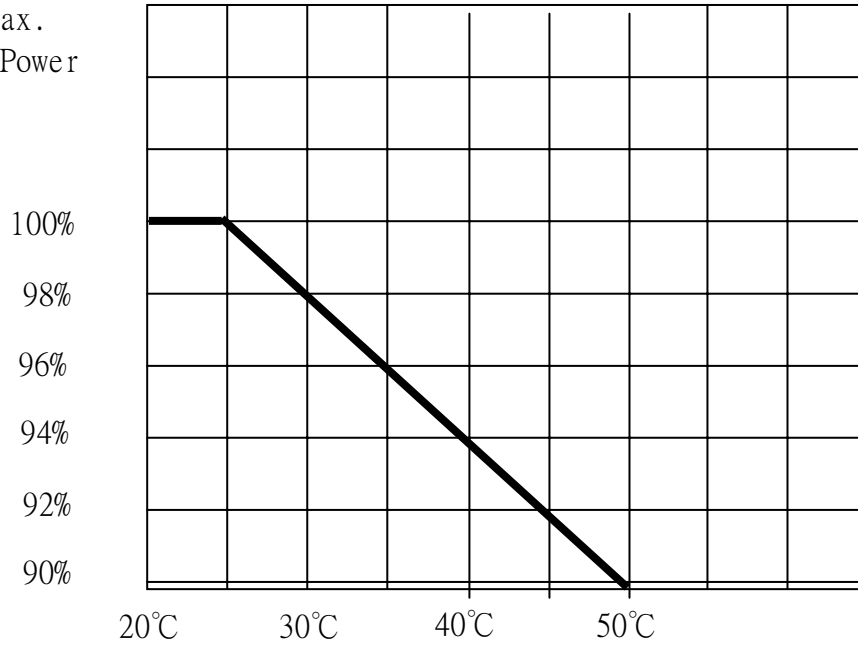


《Figure 1》

13.0 Total max. output Derating

13.1 Total max power V.S Temperature (when only one module is installed)

Total max.
output Power



13.2 Total max. power V.S Input Voltage (when only one module is installed)

+12V Total max.
output Power

