

規格書


SPECIFICATION

品名 REDUNDANT SWITCHING POWER SUPPLY
STYLE NAME :

型號 M1K2-5A00V4H
MODEL NO. :

料號
PART NO. :

版次 A4
REVISION :

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Revision

Rev.	Page	Item	Date	Description
A2	5	3.2	DEC-15-2011	UPDATE Regulation
A2	6	4.2.1	DEC-15-2011	UPDATE Over power protection
A3	10	13.0	NOV-10-2014	Add Output Derating
A4	5	3.1	SEP-17-2015	UPDATE Output Characteristics
	9	12.0		UPDATE Output voltage timing

MODEL NO. M1K2-5A00V4H

- 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 Output characteristics
 - 3.2 Regulation
 - 3.3 Ripple and noise
 - 3.3.1 Specification
 - 3.3.2 Ripple voltage test circuit
 - 3.4 Overshoot
 - 3.5 Efficiency
- 4.0 4.0 Protection
 - 4.1 Input
 - 4.2 Output
 - 4.2.1 Over power protection (OPP)
 - 4.2.2 Over voltage protection (OVP)
 - 4.2.3 Short
- 5.0 Power supply sequencing
 - 5.1 Power 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 Temperature
 - 7.2 Humidity
 - 7.3 Insulation resistance
 - 7.4 Dielectric withstanding voltage
- 8.0 Safety
 - 8.1 UL
 - 8.2 CUL
 - 8.3 TUV
 - 8.4 CCC
- 9.0 Reliability
 - 9.1 Burn in

- 10.0 Mechanical requirements
 - 10.1 Physical dimension

- 11.0 Warning method
 - 11.1 Audio alarm
 - 11.2 Power defective signal delivery

- 12.0 Output voltage timing

- 13.0 Total max. output Derating
 - 13.1 Total max power V.S Tempertur

1.0 Scope

This specification defines the performance characteristics of a grounded , single-phase , 1000watts , 5 output level power supply. This specification also defines world wide safety requirements and manufactures process test requirements.

M1K2-5A00V4H power system is a 1+1 Redundant power system consisting of two M1K-2A00V power modules and one M1K2-5A00V4H 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	22A	±5%
+12V	2A	83A	±5%
-12V	0A	0.5A	±5%
+3.3V	0A	22A	±5%
+5VSB	0.1A	3A	±5%

REMARK:

1. POWER MODULE TOTAL OUTPUT POWER OF +5V AND +3.3V NOT EXCEED 150W.
2. POWER MODULE TOTAL OUTPUT POWER NOT EXCEED 1000W.
3. 90Vac~132Vac input: Once AC or PS_ON turn on power supply, the total max. power is requested to be less than 80% of MAX. LOAD.

3.2 Regulation

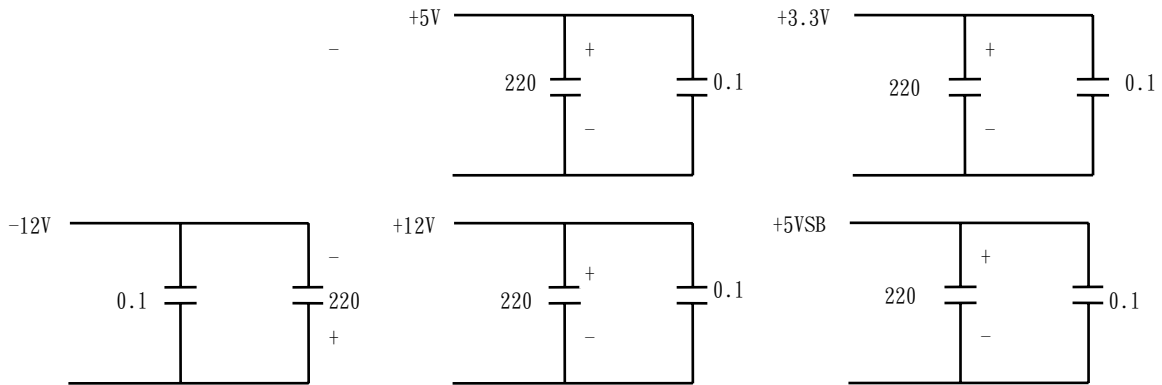
Output DC voltage	Line regulation
+5V	±50mV
12V	±120mV
-12V	±120mV
+3.3V	±50mV
+5Vsb	±50mV

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/83A 5VSB/0.1A.

Power supply efficiency typical 86% at 230V , 12V/83A 5VSB/0.1A.

NOTE:

The different harness conditions and/or the accuracy of measurement Instruments affect the test result of output voltage and efficiency.

Harness conditions are such as cable length, wire gauge, the connector types,total harness amounts.

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).

The power supply designed to meet UL 60950.

8.2 Canadian standards association (CUL)

The power supply designed to meet CSA C22.2 No. 60950.

8.3 TUV

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, GB4943.1-2011, 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

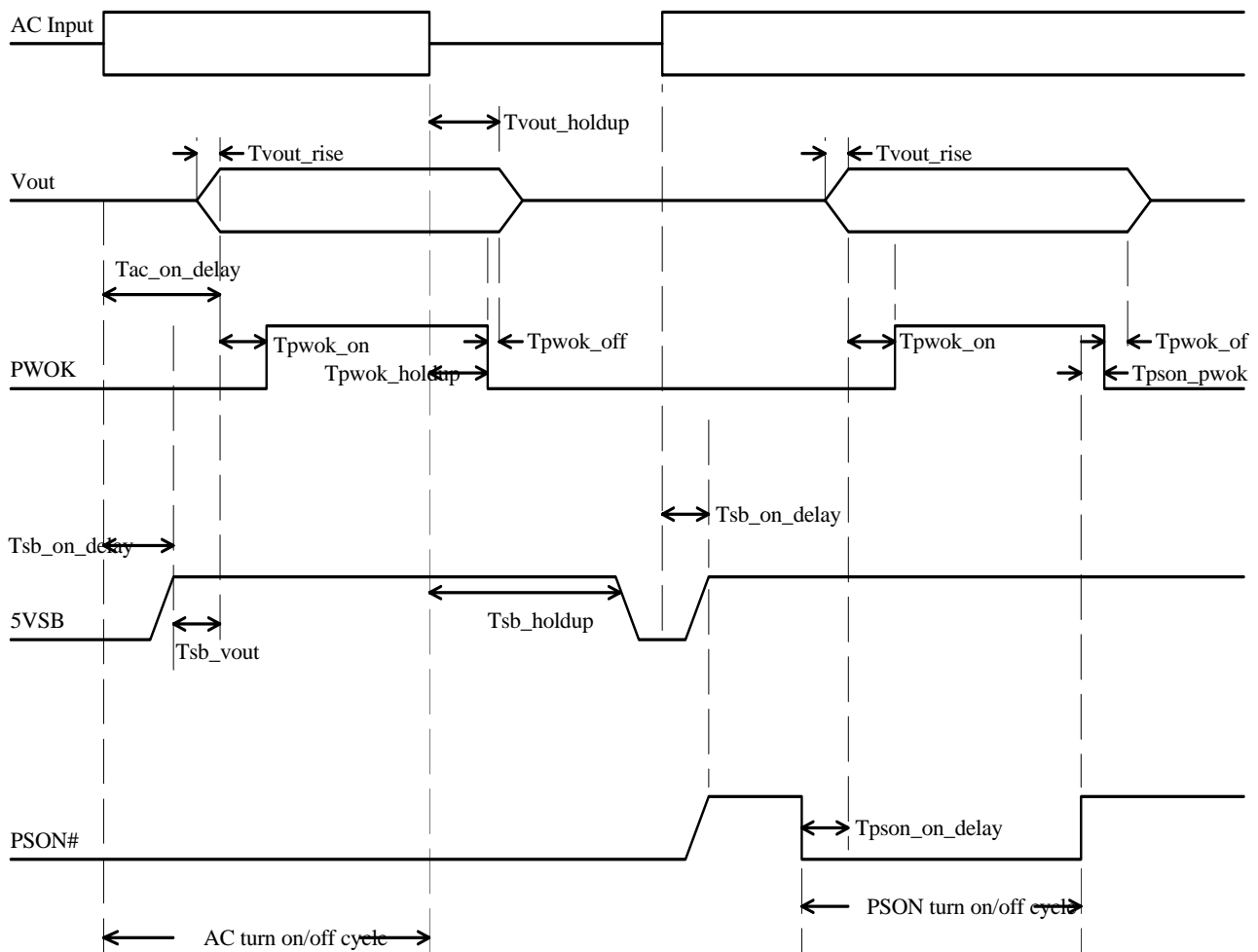
11.1 Audio alarm(buzzer sound , resetable).

11.2 Power defective signal delivery(TTL , low active).

12.0 Output voltage timing

Item	Description	MIN	MAX	UNITS
Tsb_on_delay *1	Delay from AC being applied to 5VSB being within regulation.		1500	ms
Tac_on_delay *1	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 *1	Delay from PSON# active to output voltages within regulation limits.	2	400	ms
Tpson_pwok *1	Delay from PSON# deactive to PWOK being deasserted.		50	ms
Tpwok_on *1	Delay from output voltages within regulation limits to PWOK asserted at turn on.	100	500	ms
Tsb_vout *1	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 *1	Output voltage rise time from each main output.	2	20	ms

*1: 90Vac~132Vac input: Once AC or PS_ON turn on power supply, the total max. power is requested to be less than 80% of MAX. LOAD. (please refer 13.1)



《Figure 1》

13.0 Output Derating

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

