

規格書


SPECIFICATION

品名 REDUNDANT SWITCHING POWER SUPPLY
STYLE NAME :

型號 M1U2-5650V4H
MODEL NO. :

料號
PART NO. :

版次 A4
REVISION :

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Revision

Rev.	Page	Item	Date	Description
A2	9-10	12.0	OCT-20-2008	Cancel 12.0 Output Derating
A3	7	4.2.2	APR-23-2009	Update Over voltage protection
A4	9		AUG-03-2010	UPDATE timing: Tson switch on time(2500ms.max.) Trs5 +5V rise time (20ms. max.) Trs3 +3.3V rise time (20ms. max.)

MODEL NO. M1U2-5650V4H

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1.0 Scope

This specification defines the performance characteristics of a grounded , single-phase , 650watts , 5 output level power supply. This specification also defines world wide safety requirements and manufactures process test requirements.

M1U2-5650V4H power system is a 1+1 Redundant power system consisting of two.

2.0 Input requirements

2.1 Voltage (sinusoidal)

Full range 100~240 VAC

2.2 Frequency

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

2.3 Steady-state current

10 / 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 98% @110V,full load, following the standard of EN 61000-3-2

3.0 Output requirements

3.1 OUTPUT CHARACTERISTICS :

OUTPUT VOLTAGE	OUTPUT CURRENT		REGULATION LOAD
	MIN.	MAX.	
+5V	0A	22A	±5%
+12V	2A	54A	±5%
-12V	0A	0.5A	±5%
+3.3V	0A	22A	±5%
+5VSB	0.1A	3.0A	±5%

REMARK: 1. POWER MODULE TOTAL OUTPUT POWER OF +5V AND +3.3V NOT EXCEED 150W.
 2. POWER MODULE TOTAL OUTPUT POWER NOT EXCEED 650W.

3.2 Regulation

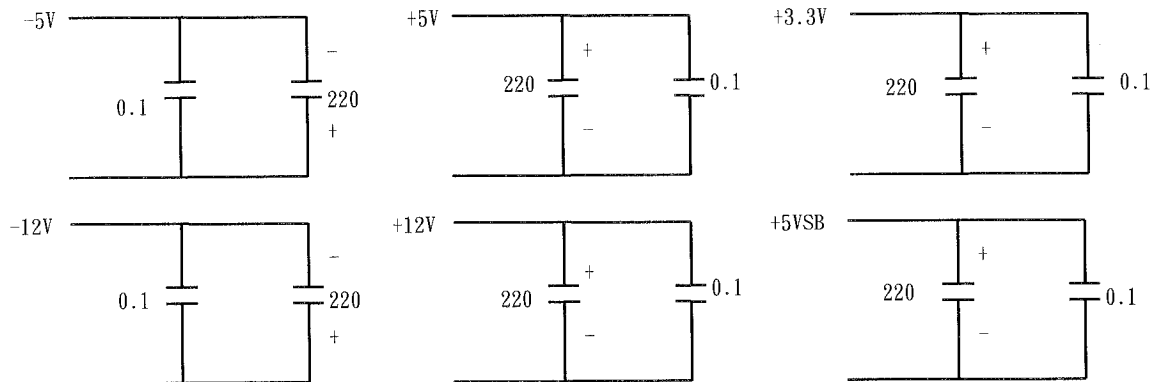
Output DC voltage	Line regulation
+5V	±50mV
12V	±50mV
-12V	±50mV
+3.3V	±50mV
+5Vsb	±50mV

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



0.1uf 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 85 % at 115V , 12v/54A 5VSB/0.4A.

Power supply efficiency typical 88 % at 230V , 12v/54A 5VSB/0.4A.

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. 110% , 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 5V must be maintain 11 msec in regulation limit at 90 VAC input voltage.

5.3 Power off sequence (see Figure 1)

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.

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.

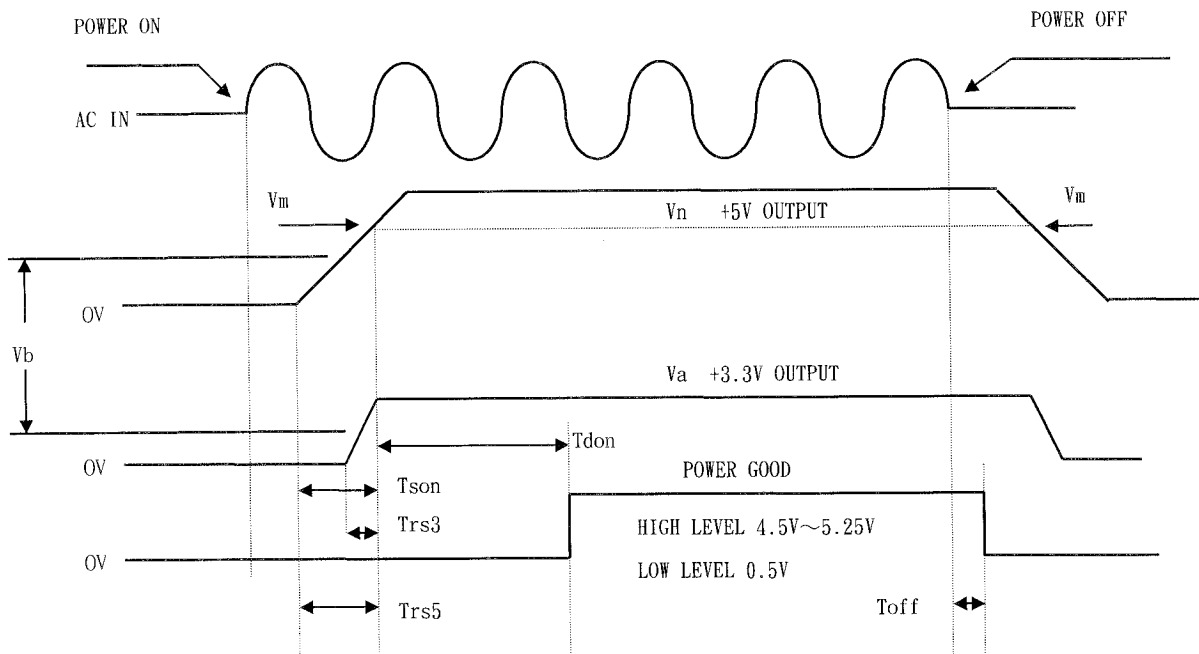
10.0 Mechanical requirements

10.1 Physical dimension : 41.8 mm * 106mm * 355 mm(H*W*D)

11.0 Warning method

11.1 Audio alarm(buzzer sound , resetable).

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



- 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 (2500ms. max.)
- T_{rs5} +5V rise time (20ms. max.)
- T_{rs3} +3.3V rise time (20ms. max.)
- T_{don} Delay turn-on (100ms. < T_{don} < 500ms.)
- T_{off} Hold up time (11ms. min.)

《Figure 1》