

# **SPECIFICATION**

**Model Name :**

**R4B-500G1V2 *series***

**Description :**

**500W Mini Redundant Power Supply (PSII)**

**Issued Date : 20210115**

## 1. General Description

This specification defines the characteristic of 1 + 1 redundant power supply with 4 Unit high. And **SURE STAR** model name is R4B-500G1V2 for 500W output.

## 2. Input Characteristic

### 2.1. Input connector

The input connector shall be an IEC60320 C14 inlet, rated for 15A/250Vac.

### 2.2. Input Voltage and Frequency

<i>Minimum</i>	<i>Nominal</i>	<i>Maximum</i>	<i>Measure</i>
90	100~240	264	Vac
47	50~60	63	Hz

### 2.3. Input Current and Inrush Current

<i>Input Voltage</i>	<i>Max. Input Current</i>	<i>Inrush Current</i>
115Vac	10A	30A
230Vac	5A	60A

### 2.4. Power Factor

The minimum power factor shall be 0.95 with full load and input 230Vac/50Hz.

## 3. Output Characteristic

### 3.1. DC Output Characteristic

<i>Output Voltage</i>	<i>Min. Current</i>	<i>Max. Current</i>	<i>Regulation</i>	<i>Ripple &amp; Noise</i>
+3.3V	1A	25A	±5%	50mV
+5V	1A	25A	±5%	50mV
+12V	1A	41A	±5%	120mV
-12V	0A	0.8A	±5%	120mV
+5VSB	0.1A	3.5A	±5%	50mV

Note :

1. The combined power from +3.3V and +5V shall not exceed 170W.
2. The max total power shall not exceed 500W.
3. Ripple and noise bandwidth is set to 20MHz.
4. Add a 0.1uF ceramic capacitor in parallel with a 10uF tantalum capacitor at output connector terminals for ripple and noise measurement.

### 3.2. Efficiency

The minimum efficiency of power supply is 80% with full load and 115Vac/60Hz input.

### 3.3. Hold up Time

The output voltages stay in regulation at least 16ms with 100% load after loss of AC input.

### 3.4. Rise Time

The output voltages rise from 10% to 90% with full load shall be in 20ms maximum.

### 3.5. Dynamic Loading

The output voltages shall remain in regulation for the step loading, and in the limits for the capacitive loading specified below :

<i>Output</i>	<i>Step Load Size</i>	<i>Load Slew Rate</i>	<i>Capacitive Load</i>
+3.3V	30% of max load	0.5A / $\mu$ sec	1000uF
+5V	30% of max load	0.5A / $\mu$ sec	1000uF
+12V	65% of max load	0.5A / $\mu$ sec	2200uF
+5VSB	25% of max load	0.5A / $\mu$ sec	1uF

### 3.6. PSON Remote on/off Control

The PSON signal is required to remotely turn on/off the power supply.

PSON is an active low TTL compatible signal that turns on the main power rails.

	<i>PSU On</i>	<i>PSU Off</i>
PSON Signal	LOW (0.8V max.)	HI (2V min.)

### 3.7. Power Good Signal

Power Good, also called PG or PWOK, is an active high TTL compatible signal.

PG signal is to indicate that all output voltages are in regulation and ready for use.

Below is for a representation of the timing characteristics of PG signal.

Power Good on delay time	100ms to 500ms
Power Good off delay time	1ms (min.)

## 4. Protection

### 4.1. Over Current Protection

<i>Output</i>	<i>Min.</i>	<i>Max.</i>	<i>Comment</i>
+3.3V	110%	150%	PSU shutdown
+5V	110%	150%	PSU shutdown
+12V	110%	150%	PSU shutdown

### 4.2. Over Voltage Protection

<i>Output</i>	<i>Min.</i>	<i>Max.</i>	<i>Comment</i>
+3.3V	3.7V	4.1V	PSU shutdown
+5V	5.7V	6.5V	PSU shutdown
+12V	13.1V	14.5V	PSU shutdown

### 4.3. Short Circuit Protection

<i>Output</i>	<i>Comment</i>
+3.3V	PSU shutdown
+5V	PSU shutdown
+12V	PSU shutdown

### 4.4. Over Temperature Protection

The power supply would be protected against over temperature condition by loss of cooling or excessive ambient temperature. The PSU will shutdown in an OTP condition.

## 5. Power System Signal Status

### 5.1. Buzzer Status

<i>Power Supply Condition</i>	<i>Buzzer Status</i>
No input power to PSU	OFF
Input present/ only standby output on	OFF
Power supply outputs ON and OK	OFF
Power supply failure	Beeping

### 5.2. LED Indicator

<i>Power Supply Condition</i>	<i>Module LED</i>		
No input power to PSU	OFF		
Input present/ only standby output on	Red		
Power supply outputs ON and OK	Green		
Power supply failure	Red or OFF		

### 5.3. TTL Signal

<i>Power Supply Condition</i>	<i>Output Condition</i>	
	<i>Min.</i>	<i>Max.</i>
Normal (Power Supply ON)	3V	5.25V
Failure (Power Supply OFF)	0V	1V

## 6. Insulation

### 6.1. Dielectric Withstand Voltage

Primary to Ground	1500Vac (10mA) for 1 second
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### 6.2. Leakage Current

Leakage current is 3.5mA maximum at 240Vac/50Hz.

## 7. Safety

CB 、 CE 、 TUV 、 UL 、 BSMI 、 CCC.

## **8. EMC**

CE 、 FCC 、 BSMI 、 CCC ◦ (Class B)

## **9. Environmental Requirement**

### 9.1. Temperature

Operating : 0°C to +50°C.

Non Operating : -20°C to +70°C.

### 9.2. Humidity

Operating : 20% to 90% , non-condensing.

Non Operating : 5% to 95% , non-condensing.

### 9.3. Altitude

Operating : Up to 5000m.

### 9.4. Cooling Method

By DC fan.

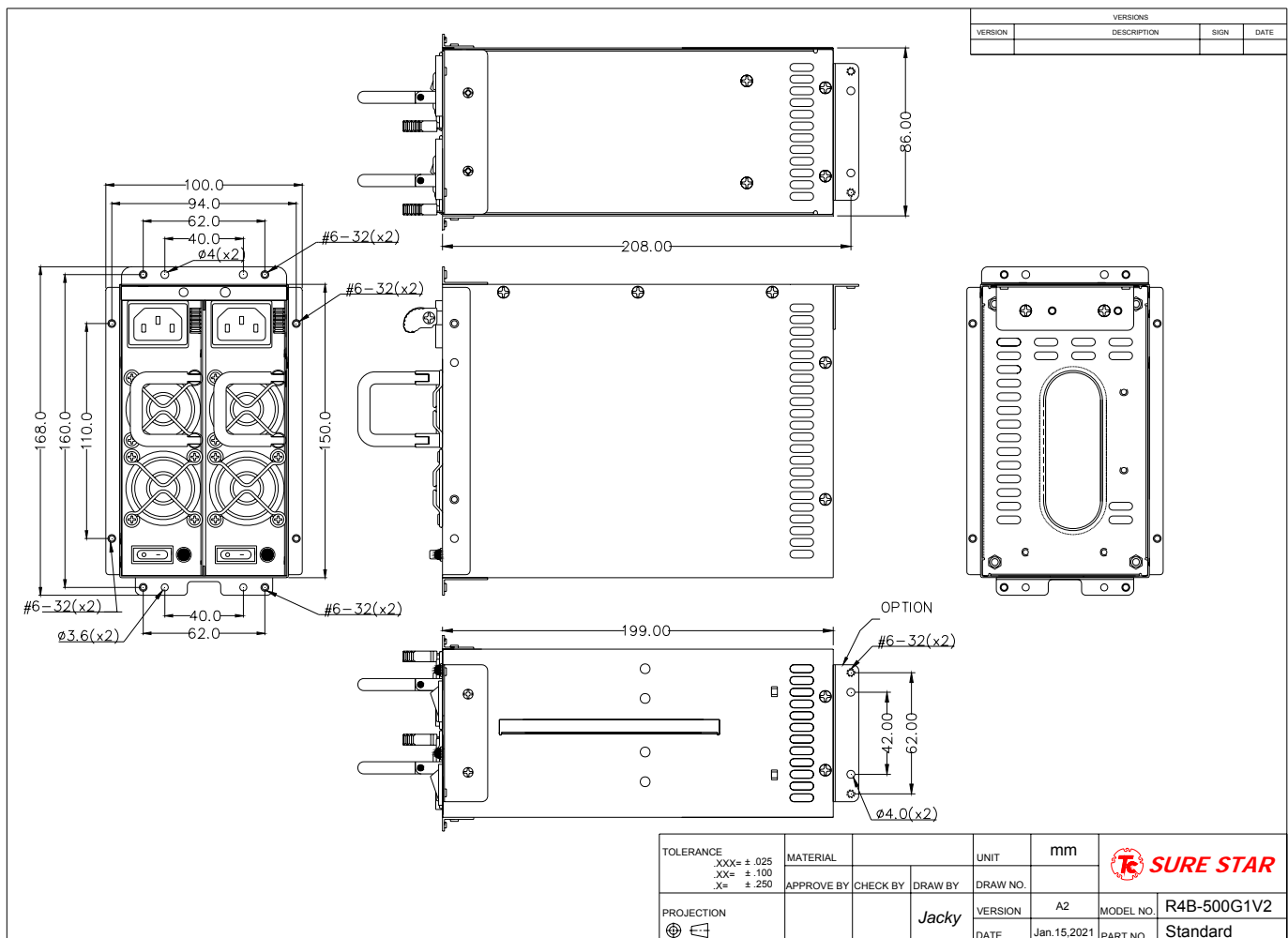
## **10. Reliability**

### 10.1. MTBF

Using MIL - HDBK -217F the calculated MTBF > 100,000 hours at 25°C.

## 11. Mechanical Drawing and Output Wire

11.1. Outline (bracket optional) : W150 \* H86 \* D199mm.



VERSIONS			
VERSION	DESCRIPTION	SIGN	DATE

TOLERANCE .XXX= ± .025 .XX= ± .100 .X= ± .250	MATERIAL	UNIT	mm				
	APPROVE BY	CHECK BY	DRAW BY	DRAW NO.			
PROJECTION 			Jacky	VERSION	A2	MODEL NO.	R4B-500G1V2
				DATE	Jan.15.2021	PART NO.	Standard

## 11.2. Output Wire (could be customization) :

