SURE STAR COMPUTER CO., LTD 添誠資訊股份有限公司
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NO.2-1, DAAN ROAD, SHULIN .DIST., NEW TAIPEI CITY 238, TAIWAN

SPECIFICATION

Model Name：

TC1GPS21Y *series*

Description：

400W、500W、600W 2U Single Power Supply

Version：A0

Issued Date : 20240306

1. General Description

This specification defines the characteristic of single power supply with 2 Unit high.
And ***SURE STAR*** model name is TC1GPS21Y401 for 400W、TC1GPS21Y501 for 500W、TC1GPS21Y601 for 600W output.

2. Input Characteristic

2.1. Input connector

The input connector shall be an IEC60320 C14 inlet, rated for 10A/250Vac.

2.2. Input Voltage and Frequency

Minimum	*Nominal*	*Maximum*	*Measure*
90	100~240	264	Vac
47	50~60	63	Hz

2.3. Input Current and Inrush Current

Input Voltage	*MAX. Input Current*	*Inrush Current*
115Vac	6.5A/6.5A/7A	25A
230Vac	3.5A	50A

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

Output Voltage	*Min. Current*	*Max. Current*	*Regulation*	*Ripple & Noise*
+3.3V	0.1A	15A	±5%	50mV
+5V	0.1A	15A	±5%	50mV
+12V	0.1A	32A/40A/48A	±5%	120mV
-12V	0A	0.5A	±10%	120mV
+5VSB	0A	3A	±5%	50mV

Note：

1. The combined power from +3.3V and +5V shall not exceed 80W.
2. The max total power shall not exceed 400W/500W/600W.
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 power efficiency shall meet 80plus GOLD 115Vac/60Hz input.

3.3. Hold up Time

The output voltages stay in regulation at least 18ms with 75% 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：

Output	*Step Load Size*	*Load Slew Rate*	*Capacitive Load*
+3.3V	30% of max load	0.5A / μ sec	1000uF
+5V	30% of max load	0.5A / μ sec	1000uF
+12V	65% of max load	0.5A / μ sec	2200uF
+5VSB	25% of max load	0.5A / μ 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.

	PSU On	*PSU Off*
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

Output	*Min.*	*Max.*	*Comment*
+3.3V	110%	150%	PSU shutdown
+5V	110%	150%	PSU shutdown
+12V	110%	150%	PSU shutdown

4.2. Over Voltage Protection

Output	*Min.*	*Max.*	*Comment*
+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

Output	*Comment*
+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. Insulation

5.1. Dielectric Withstand Voltage

Primary to Ground	1500Vac (10mA) for 1 second

5.2. Leakage Current

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

6. Safety

CB、CE、TUV、UL、BSMI、CCC。

Please visit our website and get the latest safety certificate.

7. EMC

CE、FCC、BSMI、CCC。(Class B)

Please visit our website and get the latest EMC certificate.

8. Environmental Requirement

8.1. Temperature

Operating：0℃ to +50℃.

Non-Operating：-20℃ to +70℃.

8.2. Humidity

Operating：20% to 90%，non-condensing.

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

8.3. Altitude

Operating：Up to 5000m.

8.4. Cooling Method

By DC fan.

9. Reliability

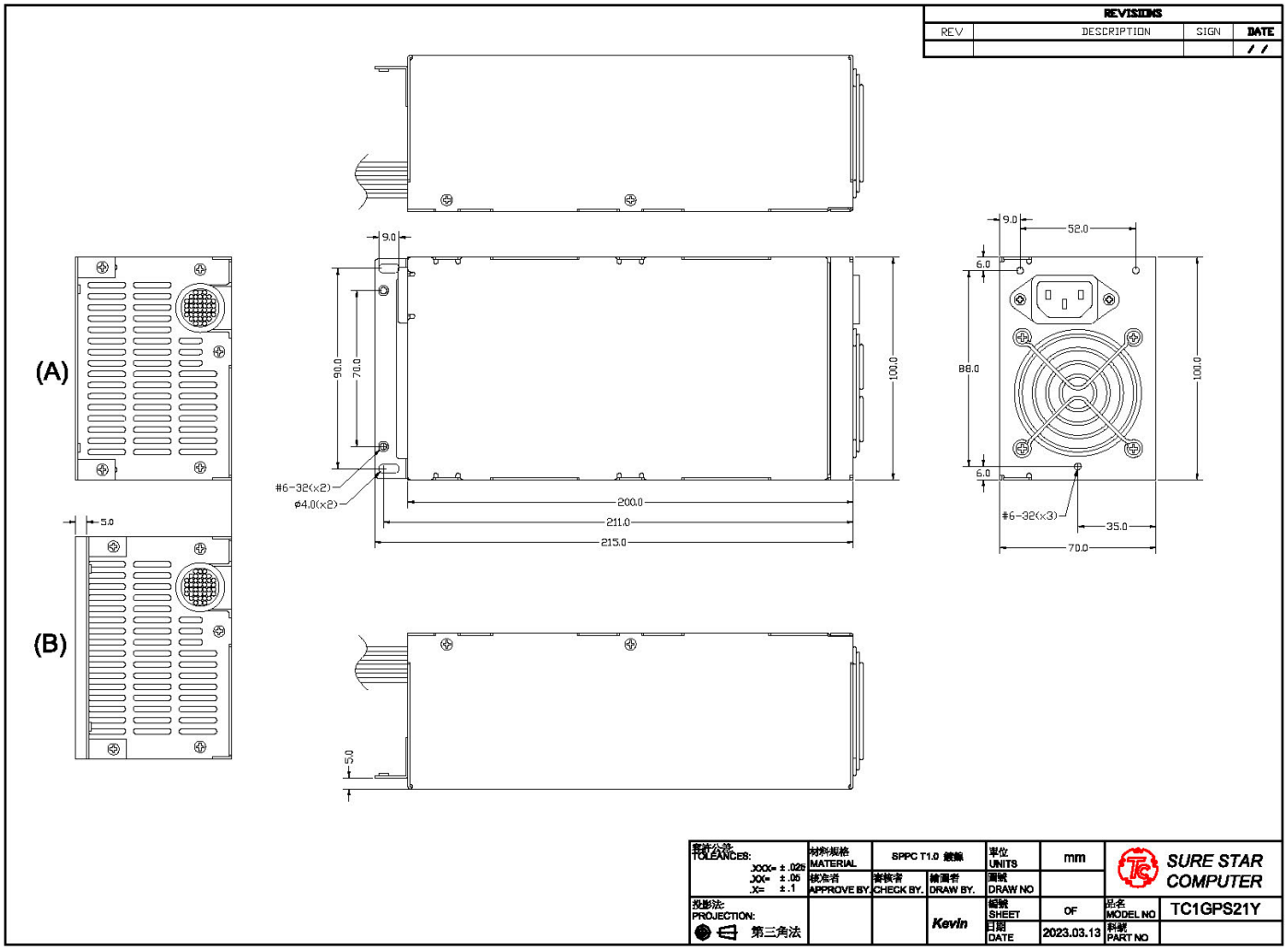
9.1. MTBF

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

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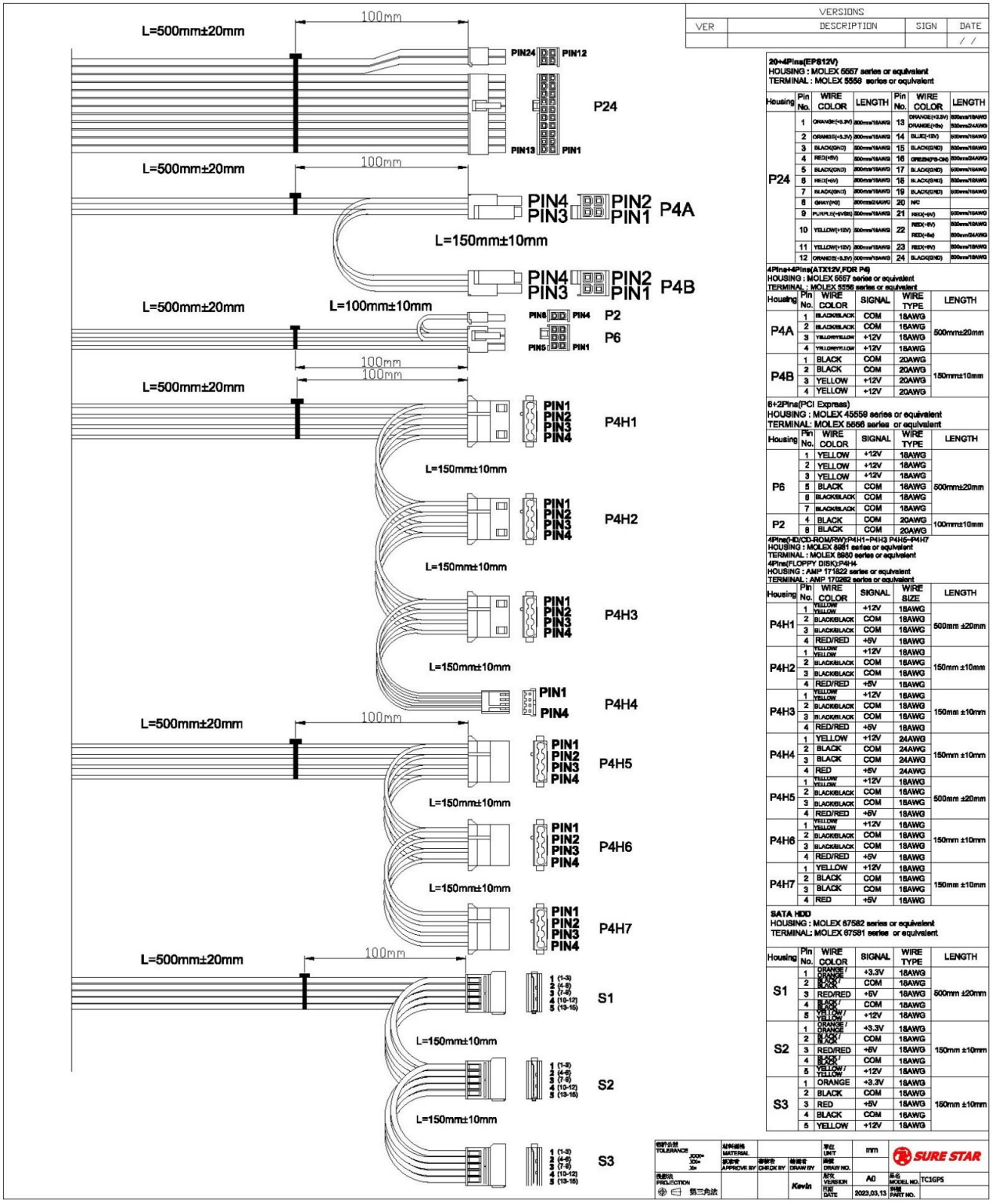
10. Mechanical Drawing and Output Wire

10.1. Outline (bracket optional)：W100＊H070＊D200mm.



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10.2. Output Wire (could be customization)：



VERSIONS

VER	DESCRIPTION	SIGN	DATE
			/ /

20+4Pins(EPS12V)
HOUSING : MOLEX 5557 series or equivalent
TERMINAL : MOLEX 5556 series or equivalent

Housing	Pin No.	WIRE COLOR	LENGTH	Pin No.	WIRE COLOR	LENGTH
P24	1	ORANGE(+3.3V)	300mm/18AWG	13	ORANGE(+3.3V) ORANGE(+Sv)	300mm/18AWG 300mm/24AWG
	2	ORANGE(+3.3V)	300mm/18AWG	14	BLUE(+12V)	300mm/18AWG
	3	BLACK(GND)	300mm/18AWG	15	BLACK(GND)	300mm/18AWG
	4	RED(+5V)	300mm/18AWG	16	GREEN(PS-ON)	300mm/24AWG
	5	BLACK(GND)	300mm/18AWG	17	BLACK(GND)	300mm/18AWG
	6	RED(+5V)	300mm/18AWG	18	BLACK(GND)	300mm/18AWG
	7	BLACK(GND)	300mm/18AWG	19	BLACK(GND)	300mm/18AWG
	8	GRAY(PG)	300mm/24AWG	20	N/C	
	9	PURPLE(+5VSB)	300mm/18AWG	21	RED(+5V)	300mm/18AWG
	10	YELLOW(+12V)	300mm/18AWG	22	RED(+5V) RED(+5v)	300mm/18AWG 300mm/24AWG
	11	YELLOW(+12V)	300mm/18AWG	23	RED(+5V)	300mm/18AWG
	12	ORANGE(+3.3V)	300mm/18AWG	24	BLACK(GND)	300mm/18AWG

4Pins+4Pins(ATX12V,FOR P4)
HOUSING : MOLEX 5557 series or equivalent
TERMINAL : MOLEX 5556 series or equivalent

Housing	Pin No.	WIRE COLOR	SIGNAL	WIRE TYPE	LENGTH
P4A	1	BLACK/BLACK	COM	18AWG	500mm±20mm
	2	BLACK/BLACK	COM	18AWG	
	3	YELLOW/YELLOW	+12V	18AWG	
	4	YELLOW/YELLOW	+12V	18AWG	
P4B	1	BLACK	COM	20AWG	150mm±10mm
	2	BLACK	COM	20AWG	
	3	YELLOW	+12V	20AWG	
	4	YELLOW	+12V	20AWG	

6+2Pins(PCI Express)
HOUSING : MOLEX 45559 series or equivalent
TERMINAL: MOLEX 5556 series or equivalent

Housing	Pin No.	WIRE COLOR	SIGNAL	WIRE TYPE	LENGTH
P6	1	YELLOW	+12V	18AWG	500mm±20mm
	2	YELLOW	+12V	18AWG	
	3	YELLOW	+12V	18AWG	
	5	BLACK	COM	18AWG	
	6	BLACK/BLACK	COM	18AWG	
	7	BLACK/BLACK	COM	18AWG	
P2	4	BLACK	COM	20AWG	100mm±10mm
	9	BLACK	COM	20AWG	

4Pins(HDD/CD-ROM/FDD):P4H1~P4H3 P4H5~P4H7
HOUSING : MOLEX 8981 series or equivalent
TERMINAL : MOLEX 8980 series or equivalent
4Pins(FLOPPY DISK):P4H4
HOUSING : AMP 171822 series or equivalent
TERMINAL : AMP 170262 series or equivalent

Housing	Pin No.	WIRE COLOR	SIGNAL	WIRE SIZE	LENGTH
P4H1	1	YELLOW/YELLOW	+12V	18AWG	500mm ±20mm
	2	BLACK/BLACK	COM	18AWG	
	3	BLACK/BLACK	COM	18AWG	
	4	RED/RED	+5V	18AWG	
P4H2	1	YELLOW/YELLOW	+12V	18AWG	150mm ±10mm
	2	BLACK/BLACK	COM	18AWG	
	3	BLACK/BLACK	COM	18AWG	
	4	RED/RED	+5V	18AWG	
P4H3	1	YELLOW/YELLOW	+12V	18AWG	150mm ±10mm
	2	BLACK/BLACK	COM	18AWG	
	3	BLACK/BLACK	COM	18AWG	
	4	RED/RED	+5V	18AWG	
P4H4	1	YELLOW	+12V	24AWG	150mm ±10mm
	2	BLACK	COM	24AWG	
	3	BLACK	COM	24AWG	
	4	RED	+5V	24AWG	
P4H5	1	YELLOW/YELLOW	+12V	18AWG	500mm ±20mm
	2	BLACK/BLACK	COM	18AWG	
	3	BLACK/BLACK	COM	18AWG	
	4	RED/RED	+5V	18AWG	
P4H6	1	YELLOW/YELLOW	+12V	18AWG	150mm ±10mm
	2	BLACK/BLACK	COM	18AWG	
	3	BLACK/BLACK	COM	18AWG	
	4	RED/RED	+5V	18AWG	
P4H7	1	YELLOW	+12V	18AWG	150mm ±10mm
	2	BLACK	COM	18AWG	
	3	BLACK	COM	18AWG	
	4	RED	+5V	18AWG	

SATA HDD
HOUSING : MOLEX 67582 series or equivalent
TERMINAL: MOLEX 67581 series or equivalent

Housing	Pin No.	WIRE COLOR	SIGNAL	WIRE TYPE	LENGTH
S1	1	ORANGE/ORANGE	+3.3V	18AWG	500mm ±20mm
	2	BLACK/BLACK	COM	18AWG	
	3	RED/RED	+5V	18AWG	
	4	BLACK/BLACK	COM	18AWG	
	5	YELLOW/YELLOW	+12V	18AWG	
S2	1	ORANGE/ORANGE	+3.3V	18AWG	150mm ±10mm
	2	BLACK/BLACK	COM	18AWG	
	3	RED/RED	+5V	18AWG	
	4	BLACK/BLACK	COM	18AWG	
	5	YELLOW/YELLOW	+12V	18AWG	
S3	1	ORANGE	+3.3V	18AWG	150mm ±10mm
	2	BLACK	COM	18AWG	
	3	RED	+5V	18AWG	
	4	BLACK	COM	18AWG	
	5	YELLOW	+12V	18AWG	

TOLERANCE	MATERIAL	UNIT	mm	SURE STAR
PROJECTION 第三角法	APPROVE BY	CHECK BY	DRAW BY Kevin	VERSION A0
			DATE 2023.03.13	MODEL NO. TC1GPS

11. Customization Note

Customization note shall be listed here.

End of File

NOTE：This data is subject to change without notice.