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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 : 20240305



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 :

<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 / 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.

	<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.



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5. Insulation

5.1. Dielectric Withstand Voltage

Primary to Ground	1500Vac (10mA) for 1 second
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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°C to +50°C.

Non-Operating : -20°C to +70°C.

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°C.



10.2. Output Wire (could be customization) :

The diagram illustrates various output wire configurations with dimensions and connector types. Key dimensions include L=500mm±20mm and L=150mm±10mm. Connector types shown include P24, P4A, P4B, P4H1-P4H7, S1-S3, and SATA HDD. Wire lengths and colors are specified for each configuration.

VERSIONS			
VER	DESCRIPTION	SIGN	DATE

20+4Pins(EPS12V)					
HOUSING : MOLEX 6567 series or equivalent					
TERMINAL : MOLEX 5559 series or equivalent					
Housing No.	WIRE COLOR	LENGTH	Pin No.	WIRE COLOR	LENGTH
1	ORANGE(+5V)	300mm±10mm	13	ORANGE(+3.3V)	300mm±10mm
2	ORANGE(+5V)	300mm±10mm	14	BLACK(-VE)	300mm±10mm
3	BLACK(-VE)	300mm±10mm	15	BLACK(-VE)	300mm±10mm
4	RED(+VE)	300mm±10mm	16	ORANGE(+3.3V)	300mm±10mm
5	BLACK(-VE)	300mm±10mm	17	BLACK(-VE)	300mm±10mm
6	RED(+VE)	300mm±10mm	18	BLACK(-VE)	300mm±10mm
7	BLACK(-VE)	300mm±10mm	19	BLACK(-VE)	300mm±10mm
8	GRAY(-VE)	300mm±10mm	20	NC	
9	PURPLE(+5VSB)	300mm±10mm	21	RED(+VE)	300mm±10mm
10	YELLOW(+12V)	300mm±10mm	22	RED(+VE)	300mm±10mm
11	YELLOW(+12V)	300mm±10mm	23	RED(+VE)	300mm±10mm
12	ORANGE(+5V)	300mm±10mm	24	BLACK(-VE)	300mm±10mm

4Pins+4Pins(ATX12V FOR P4)					
HOUSING : MOLEX 6567 series or equivalent					
TERMINAL : MOLEX 5559 series or equivalent					
Housing No.	WIRE COLOR	SIGNAL	WIRE TYPE	LENGTH	
1	BLACK/BLACK	COM	18AWG	500mm±20mm	P4A
2	BLACK/BLACK	COM	18AWG		
3	YELLOW/YELLOW	+12V	18AWG		
4	YELLOW/YELLOW	+12V	18AWG		
1	BLACK	COM	20AWG	150mm±10mm	P4B
2	BLACK	COM	20AWG		
3	YELLOW	+12V	20AWG		
4	YELLOW	+12V	20AWG		

8+2Pins(PCI Express)					
HOUSING : MOLEX 45659 series or equivalent					
TERMINAL : MOLEX 5669 series or equivalent					
Housing No.	WIRE COLOR	SIGNAL	WIRE TYPE	LENGTH	
1	YELLOW	+12V	18AWG	500mm±20mm	P6
2	YELLOW	+12V	18AWG		
3	YELLOW	+12V	18AWG		
5	BLACK	COM	18AWG		
6	BLACK/BLACK	COM	18AWG		
7	BLACK/BLACK	COM	18AWG	100mm±10mm	P2
4	BLACK	COM	20AWG		
8	BLACK	COM	20AWG		

4Pins+4Pins+2Pins(P4H1-P4H7)					
HOUSING : MOLEX 6567 series or equivalent					
TERMINAL : MOLEX 5669 series or equivalent					
Housing No.	WIRE COLOR	SIGNAL	WIRE TYPE	LENGTH	
1	YELLOW	+12V	18AWG	500mm ±20mm	P4H1
2	BLACK/BLACK	COM	18AWG		
3	BLACK/BLACK	COM	18AWG		
4	RED/RED	+5V	18AWG		
1	YELLOW	+12V	18AWG	150mm ±10mm	P4H2
2	BLACK/BLACK	COM	18AWG		
3	BLACK/BLACK	COM	18AWG		
4	RED/RED	+5V	18AWG		
1	YELLOW	+12V	18AWG	150mm ±10mm	P4H3
2	BLACK/BLACK	COM	18AWG		
3	BLACK/BLACK	COM	18AWG		
1	YELLOW	+12V	18AWG	150mm ±10mm	P4H4
2	BLACK/BLACK	COM	18AWG		
3	BLACK/BLACK	COM	18AWG		
1	YELLOW	+12V	18AWG	150mm ±10mm	P4H5
2	BLACK/BLACK	COM	18AWG		
3	BLACK/BLACK	COM	18AWG		
1	RED/RED	+5V	18AWG	150mm ±10mm	P4H6
2	BLACK/BLACK	COM	18AWG		
3	BLACK/BLACK	COM	18AWG		
1	YELLOW	+12V	18AWG	150mm ±10mm	P4H7
2	BLACK	COM	18AWG		
3	BLACK	COM	18AWG		

SATA HDD					
HOUSING : MOLEX 67582 series or equivalent					
TERMINAL : MOLEX 67581 series or equivalent					
Housing No.	WIRE COLOR	SIGNAL	WIRE TYPE	LENGTH	
1	ORANGE	+3.3V	18AWG	500mm ±20mm	S1
2	BLACK	COM	18AWG		
3	RED/RED	+5V	18AWG		
4	BLACK	COM	18AWG		
5	YELLOW	+12V	18AWG		
1	ORANGE	+3.3V	18AWG	150mm ±10mm	S2
2	BLACK	COM	18AWG		
3	RED/RED	+5V	18AWG		
1	ORANGE	+3.3V	18AWG	150mm ±10mm	S3
2	BLACK	COM	18AWG		
3	RED/RED	+5V	18AWG		

容許公差 TOLERANCE	材料標準 MATERIAL	單位 UNIT	mm	
縮尺 SCALE	審核 APPROVE	繪圖 DRAW BY	日期 DATE	
製圖人 DRAWN BY	審核人 CHECK BY	日期 DATE	2023.03.13	圖號 DRAWING NO.



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11. Customization Note

Customization note shall be listed here.

End of File

NOTE : This data is subject to change without notice.