

承 認 書
SPECIFICATION FOR
APPROVAL

CUSTOMER : _____

Model Number : _____ **FSP300-50FFB** _____

Part Description : _____ **POWER SUPPLY** _____

Model Applied : _____ **9PA300H430** _____

Part No. of Customer : _____

Date of Approval : _____ **11-MAY-2023** _____

Customer Signature :

Reported By	Checked By	Approved By

Prepared By : FSP Group Department.

Checked By

Approved By



全漢企業股份有限公司
SPI Electronic Co., Ltd.

總公司：桃園市建國東路 22 號

HEAD OFFICE : NO. 22, jianguo E Rd ., Taoyuan City, Taiwan, R.O.C.

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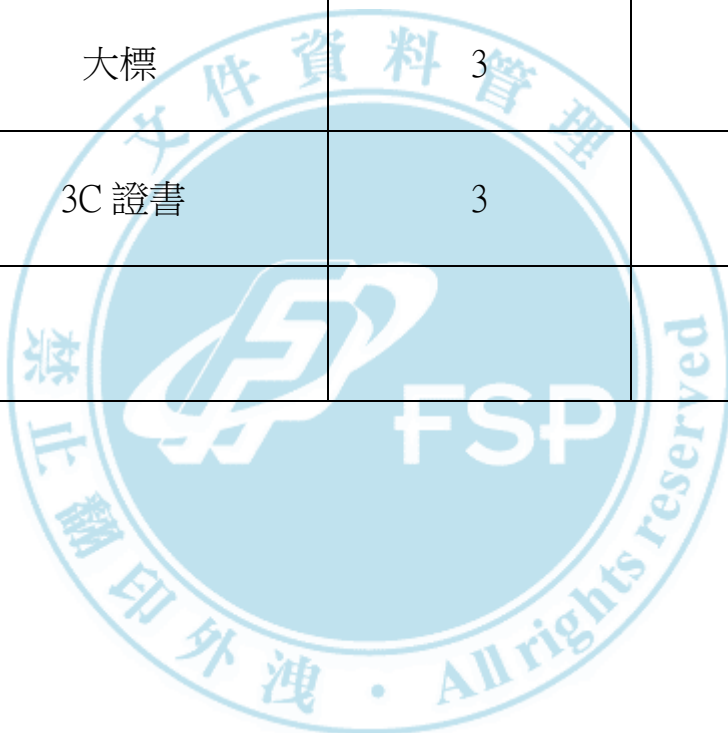
Factory / 工廠：SPI Electronic Co., Ltd. / 輝力電子有限公司

Bldg. 7, Block C, County 73, Baoan Shenzhen, Guangdong, P. R. O. C.

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承認書項目表

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SPECIFICATION



Date:2023-05-02 14:45



全漢企業股份有限公司
FSP TECHNOLOGY INC.

台灣 桃園市建國東路 22 號
NO.22, Jianguo E. Rd., Taoyuan City, Taiwan, R.O.C.
TEL: +886-3-375-9888 FAX: +886-3-375-6966

SPECIFICATION

FSP300-50FFB

Main Feature
Active PFC Circuit
Full Range Input

SEP.xx.2019
REV:1.2



全漢企業股份有限公司
FSP TECHNOLOGY INC.

MODEL:FSP300-50FFB

Revision History

<u>Rev</u>	<u>Description</u>	<u>Date</u>	<u>Author</u>
1.0	First Edition	2018/10/23	chung
1.1	Power good signal 敘述修正	2019/6/17	chung
1.2	4-1-3 Hold-up time 敘述修正	2019/9/17	chung

1. GENERAL DESCRIPTION AND SCOPE

This is the specification of Model **FSP300-50FFB**; AC-line powered switching power supply with active PFC (Power Factor Correction) circuit, meet EN61000-3-2 , power factor 0.9 at 100% of rated output power. Designed and manufactured by FSP GROUP.

The specification below is intended to describe as detailedly as possible the functions and performance of the subject power supply. Any comment or additional requirements to this specification from our customers will be highly appreciated and treated as a new target for us to approach.

2. REFERENCE DOCUMENTS

The subject power supply will meet the EMI requirements and obtain main safety approvals as following:

2.1 EMI REGULATORY

- FCC Part 15 Subpart J, Class 'B' 115 Vac operation.
- CISPR 32 Class 'B' 230 Vac operation.

3. PHYSICAL REQUIREMENTS

3.1 MECHANICAL SPECIFICATIONS

The mechanical drawing of the subject power supply, which indicate the form factor, location of the mounting holes, location, the length of the connectors, and other physical specifications of the subject power supply. Please refer to the attachment drawing.

4. ELECTRICAL REQUIREMENTS

4.1 OUTPUT ELECTRICAL REQUIREMENTS

The subject power supply will meet all electrical specifications below, over the full operation temperature range and dynamic load regulation.

4.1.1. OUTPUT RATING

Output	Nominal	Regulation	Ripple/Noise	Min	Max
1	+3.3V	±5%	50mV	0.0A	12.0 A
2	+5V	±5%	50mV	0.0 A	14.0 A
3	+12V	±5%	120mV	0.0 A	24.0 A
4	-12V	±10%	120mV	0.0 A	0.3A
5	+5VSB	±5%	50mV	0.0 A	2.5A

※ -12V,+3.3V, +5V,+12V will have the regulation to ±10% when all load take off.

The +3.3V and +5V total output shall not exceed 80watts. The total output for this subject power supply is 300 watts. Ripple and noise measurements shall be made under all specified load conditions through a single pole low pass filter with 20MHz cutoff frequency. Outputs shall bypassed at the connector with a 0.1uF ceramic disk capacitor and a 10uF electrolytic capacitor to simulate system loading.

4.1.2. LOAD CAPACITY SPECIFICATIONS

The cross regulation defined as follows, the voltage regulation limits DC include DC Output ripple & noise.

	+3.3V	+5V	+12V	-12V	5VSB
LOAD1	6.84A	7.98A	18.75A	0.23A	1.95A
LOAD2	0 A	14 A	0.5A	0.01A	0A
LOAD3	12.0 A	0 A	0.5A	0A	0A
LOAD4	0 A	0 A	24A	0.01A	0A
LOAD5	0 A	0 A	0.5A	0A	0A

4.1.3. HOLD-UP TIME @80% LOAD

115V / 60Hz : 10 mSec. Minimum.

230V / 50Hz : 10 mSec. Minimum.

4.1.4.OUTPUT RISE TIME

(10% TO 90% OF FINAL OUTPUT VALUE, @FULL LOAD)

115V-rms or 230V-rms +5Vdc : 20ms Maximum
 +3.3Vdc : 20ms Maximum
 +12Vdc : 20ms Maximum
 -12Vdc : 20ms Maximum

4.1.5.OVER VOLTAGE PROTECTION

Voltage Source	Protection Point
+ 3.3 V _{dc}	3.7V-4.5V
+5V _{dc}	5.7V-6.5V
+12V _{dc}	13.3V – 15.5V

4.1.6. OVER-CURRENT PROTECTION

OUTPUT VOLTAGE	OCP
+3.3V	20A-30A
+5V	20A-30A

4.1.7. OVER POWER PROTECTION

Total output shall not exceed 300 watts , in the event of an output total power condition on output , If the total exceed 150% , the power supply will shutdown and latch off without damage to the power supply.

4.1.8.POWER GOOD SIGNAL

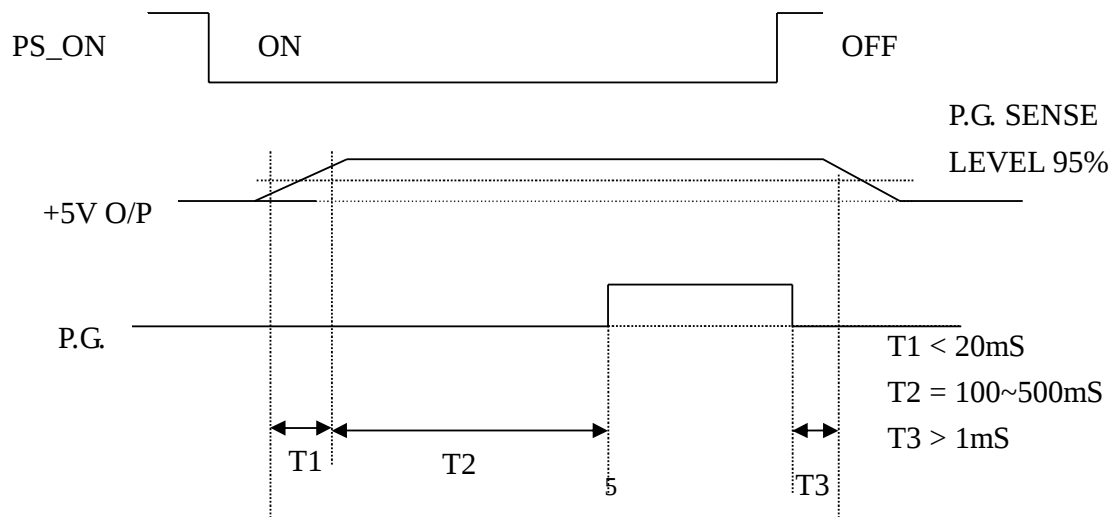
The power good signal is a TTL compatible signal for the purpose of initiating an orderly star-up procedure under normal input operating conditions. This signal is asserted (low) until +5V_{dc} has reached 4.75 volts during power up. Characteristics:

TTL signal asserted (low state) : less than 0.5V while sinking 4mA.

TTL signal asserted (high state): greater than 2.5v-5.25vV while sourcing 500uA.

High state output impedance: less or equal to 1.5Kohm from output to common.

POWER GOOD @ 115/230V, FULL LOAD	100 –500mSec.
POWER FAIL @115/230V, FULL LOAD	1 mSec. minimum



4.2. OUTPUT TRANSIENT LOAD RESPONSE

The output voltages shall remain within the limits specified in 4.1.1 output rating table in page 4 for the step loading and within the limits specified in Table 1 for the capacitive loading. The load transient repetition rate shall be tested between 50Hz and 5 kHz at duty cycles ranging from 10%-90%. The load transient repetition rate is only a test specification. The step load may occur anywhere within the MIN load to the MAX load shown in Table 1.

Table 1: Transient Load Requirements

Output	Δ Step Load Size	Load Slew Rate	Capacitive Load
+3.3V	30% of max load	1.0 A/ μ s	3300 μ F
+5V	30% of max load	1.0 A/ μ s	3300 μ F
+12V	40% of max load	1.0 A/ μ s	3300 μ F

4.3. INPUT ELECTRICAL SPECIFICATIONS

4.3.1. VOLTAGE RANGE

PARAMETER		UNITS
V-in Range	90 - 264	V-rms

4.3.2. INPUT FREQUENCY

INPUT FREQUENCY	47–63Hz
-----------------	---------

4.3.3. INRUSH CURRENT

(Cold start: 25 deg. C)

115V	No damage
230V	No damage

4.3.4. INPUT LINE CURRENT

115V	6.0 Amps – rms maximum
230V	3.0 Amps – rms maximum

4.4. EFFICIENCY

	Full load (100%)	Typical load (50%)	Light load (20%)
115VAC	82%	85%	82%
230VAC	82%	85%	82%

(loading shown in Amps)

Loading	+12V	+5V	+3.3V	-12V	+5Vsb
Full (100%)	18.75	7.98	6.84	0.23	1.95
Typical (50%)	9.37	3.99	3.42	0.12	0.98
Light (20%)	3.75	1.60	1.37	0.05	0.39

4.5. Standby Power Consumption (5Vsb):

Efficiency > 45% @ 5Vsb/45mA & 230Vac input (2013 Lot 6)

Efficiency > 45% @ 5Vsb/90mA & 230Vac input

Efficiency > 75% @ 5Vsb/550mA & 230Vac input

Efficiency > 75% @ 5Vsb/1A & 230Vac input

Efficiency > 75% @ 5Vsb/1.5A & 230Vac input

Efficiency > 75% @ 5Vsb/3A & 230Vac input

4.6. PS_ON#

PS_ON# is an active-low, TTL-compatible signal that allows a motherboard to remotely control the power supply in conjunction with features such as soft on/off, Wake on LAN+, or wake-on-modem. When PS_ON# is pulled to TTL low, the power supply should turn on the five main DC output rails: +12VDC, +5VDC, +3.3VDC and -12VDC. When PS_ON# is pulled to TTL high or open-circuited, the DC output rails should not deliver current and should be held at zero potential with respect to ground. PS_ON# has no effect on the +5VSB output, which is always enabled whenever the AC power is present. (PS_ON# Signal Characteristics)

The power supply shall provide an internal pull-up to TTL high. The power supply shall also provide debounce circuitry on PS_ON# to prevent it from oscillating on/off at startup when activated by a mechanical switch. The DC output enable circuitry must be SELV-compliant.

PS_ON# Signal Characteristics

	Min.	Max.
VIL, Input Low Voltage	0.0V	0.8V
IIL, Input Low Current (Vin = 0.4V)		-1.6mA
VIH, Input High Voltage (lin = -200 μ A)	2.0V	
VIH OPEN circuit, lin = 0		5.25V

5. ENVIRONMENTAL REQUIREMENTS

The power supply will be compliant with each item in this specification for the following Environmental conditions.

5.1. TEMPERATURE RANGE

Operating	0 to +50 deg. C FOR 300W
Storage	-20 to +80 deg. C

5.2. HUMIDITY

Operating	85% RH, Non-condensing
Storage	95% RH, Non-condensing

5.3. VIBRATION

The subject power supply will withstand the following imposed conditions without experiencing non-recoverable failure or deviation from specified output characteristics.

Vibration Operation, 0.01g²/Hz at 5 Hz sloping to 0.02g²/Hz at 20 Hz, and maintaining 0.02g²/Hz from 20 Hz to 500 Hz. The area under the PSD curve is 3.13gRMS. The duration shall be 20 minutes per axis for all three axes on all samples.

Plane of vibration to be along three mutually perpendicular axes.

5.4. SHOCK

The subject power supplies will withstand the following imposed conditions without experiencing non-recoverable failure or deviation from specified output characteristics.

Storage 40G, 9 mSec. half-sine wave pulse in both directions on three mutually perpendicular axes.

Operating 10G, 11mSec. half-sine wave pulse in both directions on three mutually Perpendicular axes.

5.5 COOLING SPECIFICATIONS

5.5.1. The PSU is cooled by a self-contained FAN, 40mm, 12VDC.

5.6 ALTITUDE

The power supply is applied for tropical climates and use at altitudes not exceeding 5000m above Sea level

6. SAFETY

6.1. LEAKAGE CURRENT

The leakage current from AC to safety ground will not exceed 3.5 mA-rms at 264Vac, 50 Hz.

7. ELECTROMAGNETIC COMPATIBILITY

7.1 LINE CONDUCTED EMI

The subject power supplies will meet FCC class B requirements .

7.2. RADIATED EMI

The subject power supplies will meet FCC and CISPR 32 requirements .

8. LABELLING

Label marking will be permanent, legible and complied with all agency requirements.

8.1. MODEL NUMBER LABEL

Labels will be affixed to the sides of the power supply showing the following:

- Manufacturer's name and logo.
- Model no., serial no., revision level, location of manufacturer.
- The total power output and the maximum load for each output.
- AC input rating.

8.2 DC OUTPUT IDENTIFICATION

Each output connector will be labeled.

9. RELIABILITY

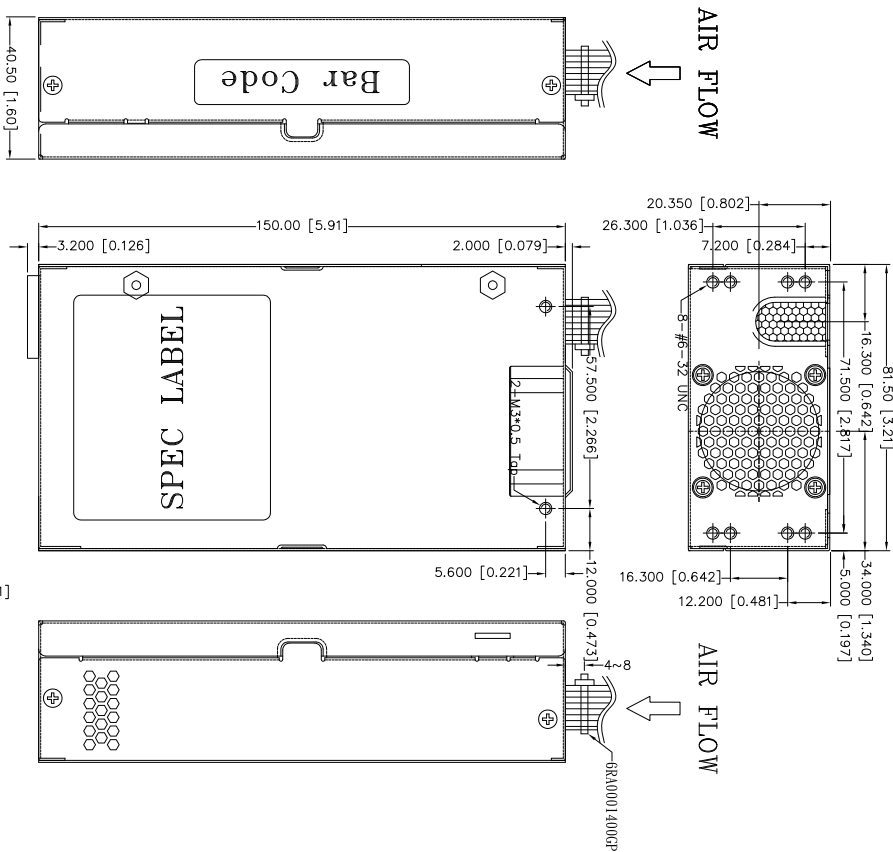
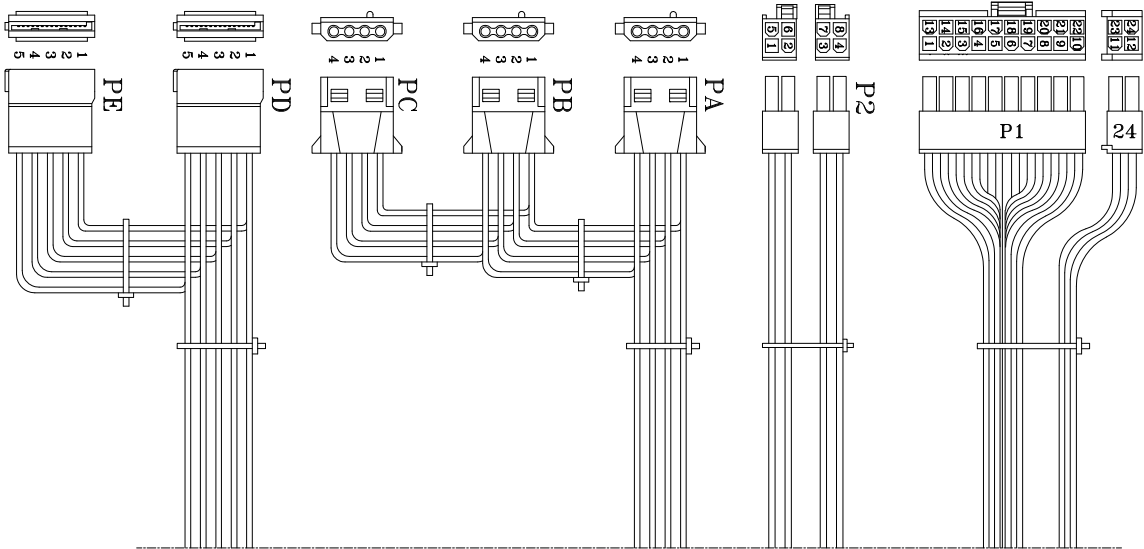
9.1. MTBF

The power supply have a minimum predicted MTBF(MIL-HDBK-217) of 100,000 hours of continuous operation at 25°C, maximum-output load, and nominal AC input voltage.

MECHANICAL DRAWING



Date:2023-05-04 13:10



REF. D.	PIN	SIGNAL	WIRE COLOR	Gauge	CONNECTOR TYPE	LENGTH
1	1	+3.3V	ORANGE	20	WST	300±15 mm
2	2	+3.3V	ORANGE	20	P20-145002K1D	
3	3	COM	BLACK	20	+P4-145002K1D or EQUIV.	
4	4	+5V	RED	20		
5	5	COM	BLACK	20		
6	6	+5V	RED	20		
7	7	COM	BLACK	20		
8	8	PW-OK	GRAY	24		
9	9	+5Vsb	PURPLE	20		
10	10	+12V	YELLOW	20		
11	11	+12V	YELLOW	20		
12	12	+3.3V	ORANGE	20		
13	13	+3.3V	BROWN	24		
14	14	-12V	BLUE	24		
15	15	COM	BLACK	20		
16	16	PS-ON	GREEN	24		
17	17	COM	BLACK	20		
18	18	COM	BLACK	20		
19	19	COM	BLACK	20		
20	20					
21	21	+5V	RED	20		
22	22	+5V	RED	20		
23	23	+5V	RED	20		
24	24	COM	BLACK	20		
1	1	COM	BLACK	20	WST	300±15 mm
2	2	COM	BLACK	20	P4-145002K3B or EQUIV.	
3	3	COM	BLACK	20	+P4-145002K4B or EQUIV.	
4	4	+12V	YELLOW	20		
5	5	+12V	YELLOW	20		
6	6	+12V	YELLOW	20		
7	7	+12V	YELLOW	20		
8	8	+12V	YELLOW	20		
1	1	+12V	YELLOW	20	WST	300±15 mm
2	2	COM	BLACK	20	P4-145002K3B or EQUIV.	
3	3	COM	BLACK	20		
4	4	+5V	RED	20		
1	1	+12V	YELLOW	20	WST	155±15 mm
2	2	COM	BLACK	20	P4-145002K3B or EQUIV.	
3	3	COM	BLACK	20		
4	4	+5V	RED	20		
1	1	+3.3V	ORANGE	20	MOLEX SP-67582 or EQUIV.	300±15 mm
2	2	COM	BLACK	20		
3	3	+5V	RED	20		
4	4	COM	BLACK	20		
5	5	+12V	YELLOW	20		
1	1	+3.3V	ORANGE	20	MOLEX SP-67582 or EQUIV.	155±15 mm
2	2	COM	BLACK	20		
3	3	+5V	RED	20		
4	4	COM	BLACK	20		
5	5	+12V	YELLOW	20		

P/N: 9PA300H430

NOTE:

1. ALL THE LENGTH OF OUTPUT WIRES EXCLUDE HOUSING.
2. 公差: .XX=±0.5 [0.02]、.XXX=±0.25 [0.01]

UNIT:mm [inch]

MODEL NO. : FSP300-50FFB(1390001)	TITLE: ASSY	SHEET: 1 OF 1 REV:01
R&D(2)	PE	DATE
周書宇		MAY.04.2023
INTERIOR COUNTERSIGN:		



全漢企業股份有限公司

承認書

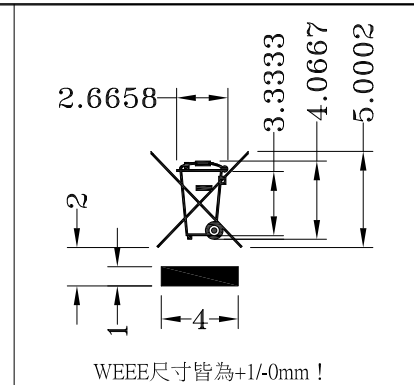
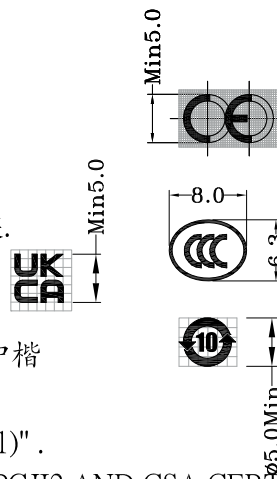
料號 :
6LL2267201GP ,,,MAIN LABEL,FSP,FSP300-50FFB,,CCC(5K+熱帶);CE;FCC(ICES);TUV(RH-BAUART);UKCA;UL/cUL(E190414),80磅PVC,,,WEEE,CHINA ROHS,,100-240V,6-3A,,ErP 5Vsb<0.5W Input,RoHS,,,,,MADE IN CHINA,R:1,

版次 : 01
文件編號 : APD-00073788
研發部門 : RAZ02
作者 : evachen/陳志禎(FSP)
承認書狀態 : 規格
製造商名稱 : FSP
製造商型號 : 6LL
發行日期 : 2021/10/21 18:25:15
備註 :

單位	姓名	單位	姓名	單位	姓名
文件中心(DCC)	gen	申請者2	raz02_user	主管/ 策略採購/ 安規工程/ 相關 單位	chow
主管/ 策略採購/ 安規工程/ 相關 單位	fsp_zoedai	主管/ 策略採購/ 安規工程/ 相關 單位	spi_lindayang	主管/ 策略採購/ 安規工程/ 相關 單位	tj

NOTES:

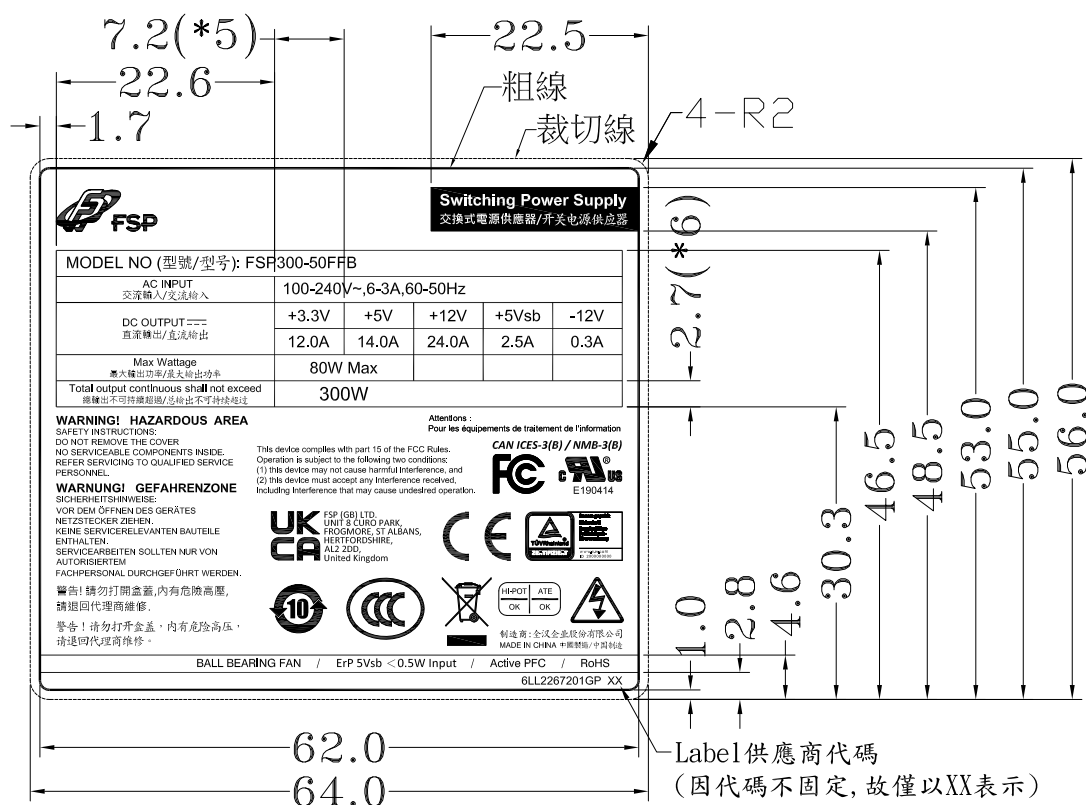
- 1.材質:80磅PVC(環保合成紙)(UL)+COATING(UL).
- 2.印刷字體大小;位置;內容詳見DRAWING.
- 3.請將LOGO按適當比例印刷於LOGO區.
- 4.印刷必須清晰不得有斷線;模糊不清等不良現象.
- 5.背膠必須耐溫80°C不會產生翹起.
- 6.PANTONE BLACK C
- 7.白底黑字,中文繁體為微軟正黑體;简体为金梅简中楷
- 8.未標註之公差為 ± 0.5 .
- 9.材質須符合"FSP環境管制物質技術標準(SGP-0401)".
- 10.LABEL MUST BE UL RECOGNIZED: PGDQ2 OR PGJ12 AND CSA CERTIFIED.
- 11.Application surface for this label is metal of PC power.



SCALE: 2/1

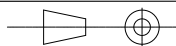

SCALE: 10/1

REV	DATE	DESCRIPTION	DRAWN
1	OCT.21.2021	Modified by 6LL1981402GP,增加CCC&UKCA	黃淑芳



UNIT:mm

P/N.:6LL2267201GP

MODEL NO. : FSP300-50FFB(D030001)		TITLE: LABEL		SHEET: 1 OF 2	REV:01
R&D (2)	PE	DRAWN		DATE	
				OCT.21.2021	
				(泛亞太業三 劉穎聰)	

P/N.: 6LL2267201GP

MODEL NO. : FSP300-50FFB

TITLE: LABEL

SHEET: 2 OF 2

REV:01

**Switching Power Supply**
交換式電源供應器/开关电源供应器

MODEL NO (型號/型号): FSP300-50FFB

AC INPUT 交流輸入/交流输入	100-240V~, 6-3A, 60-50Hz				
DC OUTPUT 直流輸出/直流输出	+3.3V	+5V	+12V	+5Vsb	-12V
	12.0A	14.0A	24.0A	2.5A	0.3A
Max Wattage 最大輸出功率/最大输出功率	80W Max				
Total output continuous shall not exceed 總輸出不可持續超過/总输出不可持续超过	300W				

WARNING! HAZARDOUS AREA

SAFETY INSTRUCTIONS:

DO NOT REMOVE THE COVER
NO SERVICEABLE COMPONENTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNUNG! GEFAHRENZONE

SICHERHEITSHINWEISE:

VOR DEM ÖFFNEN DES GERÄTES
NETZSTECKER ZIEHEN.
KEINE SERVICE RELEVANTEN BAUTEILE
ENTHALTEN.
SERVICE ARBEITEN SOLLTEN NUR VON
AUTORISIERTEM
FACHPERSONAL DURCHGEFÜHRT WERDEN.

警告! 請勿打開盒蓋, 內有危險高壓,
請退回代理商維修。

警告! 請勿打开盒盖, 內有危險高压,
请退回代理商维修。

Attentions :

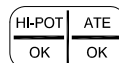
Pour les équipements de traitement de l'information

This device complies with part 15 of the FCC Rules.
Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received,
including interference that may cause undesired operation.

CAN ICES-3(B) / NMB-3(B)



FSP (GB) LTD.
UNIT 8 CURO PARK,
FROGMORE, ST ALBANS,
HERTFORDSHIRE,
AL2 2DD,
United Kingdom



制造商: 全汉企业股份有限公司
MADE IN CHINA 中國製造/中国制造

BALL BEARING FAN / ErP 5Vsb <0.5W Input / Active PFC / RoHS

6LL2267201GP XX



全漢企業股份有限公司

安規證書

料號 :
Model Name : FSP300-50FFB,FSP350-50FFB
版次 : 02
文件編號 : SFD-00005388
作者 : chow/周懿慧(FSP)
Model No/Type : FSP300-50FFB,FSP350-50FFB
SFA NO. : SFA22121242
Trade mark : -
安規種類 : CCC(5K+熱帶)/62368
發行日期 : 2023/05/02 08:55:35
備註 : CCC 62368 for FSP300-50FFB series 輝力



中国国家强制性产品认证证书

证书编号：2020010907307025

发证日期：2023 年 04 月 27 日

有效期至：2025 年 06 月 29 日

认证委托人名称 全汉企业股份有限公司
及注册地址 台湾桃园市桃园区建国东路 22 号

产品生产者名称 全汉企业股份有限公司
及注册地址 台湾桃园市桃园区建国东路 22 号

生产企业名称 深圳辉力电子有限公司
及生产地址 深圳市宝安区新安街道布心社区 73 区流塘路 352 号辉力厂 C4 栋 101 至 301、C5-C11 栋

产品名称和系列、规格、型号 开关电源供应器
1) FSP300-50FFB 交流输入：100-240V, 60-50Hz, 6-3A; 直流输出：
+3.3Vdc, 12.0A; +5Vdc, 14.0A; +12Vdc, 24.0A; +5Vsb, 2.5A; -12Vdc, 0.3A; +3.3V & +5V 最大输出功率 80W; 总输出不可持续超过 300W; 2) FSP350-50FFB 交流输入：100-240V, 60-50Hz, 6-3A;
直流输出：+3.3Vdc, 12.0A; +5Vdc, 14.0A; +12Vdc, 29.0A; +5Vsb, 2.5A; -12Vdc, 0.3A; +3.3V & +5V
最大输出功率 80W; 总输出不可持续超过 350W; (不带电线组件销售, 仅适用于海拔 5000 米及以下)

产品标准和
技术要求 GB 17625.1-2012; GB 4943.1-2022; GB/T 9254.1-2021

上述产品符合 CNCA-C09-01:2014 认证规则的要求, 特发此证。

证书有效期内本证书的有效性依据发证机构的定期监督获得保持。

本证书为变更证书, 证书首次颁发日期: 2020 年 06 月 29 日

经中国合格评定国家认可委员会认可 CNAS C001-P

可通过扫描下方二维码或登录国家认监委网站 (www.cnca.gov.cn) 查验证书信息



签发:

谢肇煦



中国质量认证中心



CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

CERTIFICATE NO.: 2020010907307025

Valid from: Apr.27,2023

Valid until:Jun.29,2025

NAME AND REGISTERED
ADDRESS OF THE APPLICANTFSP Group Inc.
No.22,JianGuo E.Rd.,TaoYuan City,TaiWan,ChinaNAME AND REGISTERED
ADDRESS OF THE
MANUFACTURERFSP Group Inc.
No.22,JianGuo E.Rd.,TaoYuan City,TaiWan,ChinaNAME AND LOCATION
OF THE FACTORYShenZhen HuiLi Electronics CO.,LTD
Building C4(101~301)-C11, No. 352, LiuTang Rd., County 73, Bu'Xin Village, Xin'an, Bao'an, Shenzhen,
Guangdong, China

PRODUCT MODEL(S)

Switching Power Supply
1) FSP300-50FFB AC Input : 100-240V , 60-50Hz , 6-3A;DC OUTPUT :
+3.3Vdc,12.0A;+5Vdc,14.0A;+12Vdc,24.0A;+5Vsb,2.5A;-12Vdc,0.3A; +3.3V & +5V Max. Wattage 80W ;
Total output continuous shall not exceed 300W; 2) FSP350-50FFB AC Input : 100-240V , 60-50Hz ,
6-3A; DC OUTPUT : +3.3Vdc,12.0A;+5Vdc,14.0A;+12Vdc,29.0A;+5Vsb,2.5A;-12Vdc,0.3A; +3.3V & +5V
Max. Wattage 80W ; Total output continuous shall not exceed 350W.(Sale without cord set, Altitude
up to 5000m)

STANDARDS AND

GB 17625.1-2012;GB 4943.1-2022;GB/T 9254.1-2021

TECHNICAL REQUIREMENTS

This is to certify that the above mentioned product(s) complies with the requirements of implementation rules for compulsory certification(REFNO. CNCA-C09-01:2014)

The validity of the certificate is subject to positive result of the regular follow up inspection by issuing certification body until the expiry date.

Date of original issued: Jun.29,2020

Accredited by China National Accreditation Service for Conformity Assessment CNAS C001-P

The certificate information is available through the QR code below or CNCA's website: www.cnca.gov.cn



SIGNATURE:

谢肇煦



CHINA QUALITY CERTIFICATION CENTRE