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SPECIFICATION

FSP 050-1SZN1CP-W

R&D	CHECK	APPROVED	REV.
Joge			01

The spec. change list

Item	Revision	Descriptions	Date
1	01	Initial spec. release	02/08'2013

1. SCOPE

FSP050-1SZN1CP-W is a 50Watts Single output, **high range input** and isolation switching power supply with PFC , Which could be used on the LED lighting products.

Note: The LED is the abbreviation of Light-Emitting Diode .

2. GENERAL REQUIREMENTS

All products including samples delivered will meet all the requirements as outlined in the document. The basic requirements of the design features are listed below:

- * Output current level selectable by DIP S.W.
- * 180 ~ 264VAC input only
- * Short circuit protection / open circuit / Fuse protection
- * DC 1 ~ 10V dimming function
- * High efficiency , greater than 87% efficiency@230Vac Output 71V/700mA
- * High PFC ≥ 0.9 at 230Vac (50W max.)
- * High reliability
- * Wide input range capability option

3. MECHANICAL REQUIREMENTS

3.1 Power Supply Connectors

AC Input : (IN1)

AC input connector : TERMINAL,2A,300V,3PIN,3.5mm,0136-20-3678-03,DINKLE,

•Pin assignment as below

Pin-No.	Name	Remark
1	Neutral	Blue
2	--	--
3	Line	Brown

LED output : (CN200)

LED output connector : TERMINAL,2A,300V,4PIN,3.5mm,0136-20-3678-04,DINKLE,

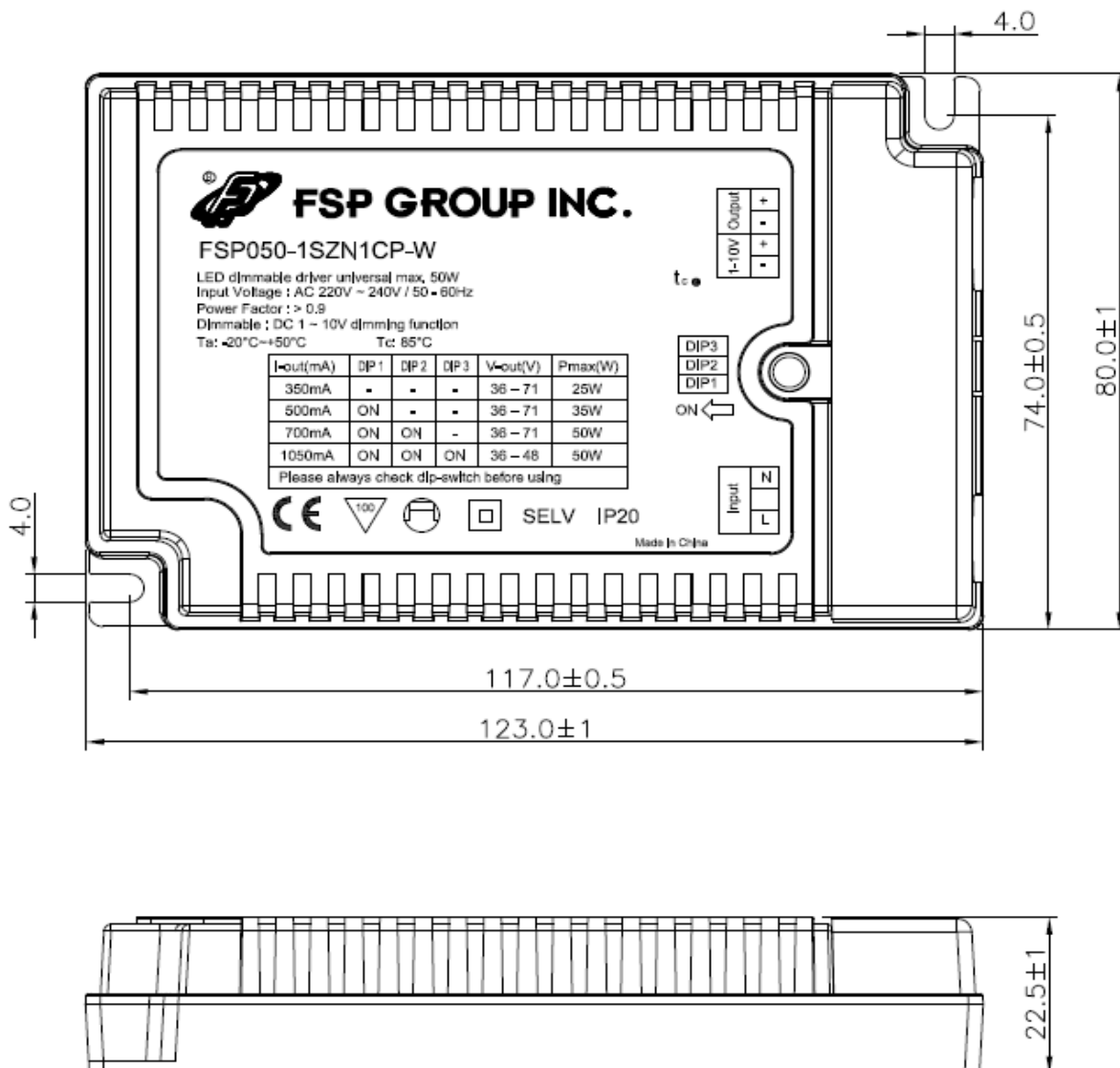
•Pin assignment as below

Pin-No.	Name	Remark
1	LED +	Red
2	LED -	Black
3	DC +	Red
4	DC -	Black

3.2 Power supply Dimension Constraints

123mm(L)*80mm(W)*22.5mm(H)

Please check the outline drawing for detail



4. ELECTRICAL REQUIREMENTS

4.1 Input AC

4.1.1 Input voltage

Minimum	Nominal	Maximum	
180	230	264	VAC

4.1.2 Input Frequency

Min	Nominal	Max	
47	50	63	Hz

4.2 Output voltages and loads

Output current level selectable by DIP S.W.

Signal Name	I-out(mA)	DIP 1	DIP 2	DIP 3	V-out(V)	Pmax(W)
LED1	350mA	-	-	-	36 – 71	25W
LED2	500mA	ON	-	-	36 – 71	35W
LED3	700mA	ON	ON	ON	36 – 71	50W
LED4	1050mA	ON	ON	ON	36 – 48	50W

Power supply shall be designed with constant current.

Signal Name	Voltage (Volts)			Current (mA)		
	Min	Typ	Max	Min.	Typ	Max.
LED1	36	--	71	332.5	350	367.5
LED2	36	--	71	475	500	525
LED3	36	--	71	665	700	735
LED4	36	--	48	997.5	1050	1102.5

- Note :
1. Output voltage will change according to LEDs series forward voltage.
 2. The **no load** output voltage should be 80V(+/-3V) at any AC input condition.

4.3 Protection

4.3.1 Short Circuit Protection

LED output have short circuit protection. A short condition on any of output shall cause **no damage** to the power supply. The unit shall recover and function ,it need to reset AC and remove fault condition to turn on power supply again.

4.3.2 LED Open Circuit

When Series LED open circuit .

Note : When one output short circuit or over voltage protection .The other output won't be effected by the fault output .

4.3.3 Fuse protection

The Fuse inside the power supply shall open when the AC input current is over the rated current of fuse. This Fuse protection will cause switching power supply to fail.

4.4 Efficiency

Efficiency : >87% under 230Vac.

Output Voltage set to 71V / 700mA.

Note : Power supply shall burn in at least 15 min. to get the correct data of efficiency .

4.5 Mean Time Between Failure (MTBF)

100,000 hrs at 25 Degrees centigrade when calculated using MIL-HDBK-217F. Use agreed upon F.I.T. (failure – in - time) number in place of MTBF.

4.6 AC turn on time .

Ac turn on time for LED shall less than 1 sec.

5. ENVIRONMENTAL REQUIREMENTS

5.1 Operating Temperature

Power Operating	-20 to +50 °C
Storage	-25 to +85 °C

The operation temperature is the temperature around the power supply .

If the power supply put inside the enclosure chassis . The outside temperature shall not cause the inside temperature exceed max. operation temperature .

5.2 Humidity (Non-condensing)

Power Operating	20% to 85%RH
Storage	10% to 95%RH

6. EMC AND SAFETY REQUIREMENT

6-1 EMI Standards

Designed to meet the following conducted & radiation limits:
EN55015

6-2 EMS Standards

- 6-2-1. Electrostatic Discharge Immunity Test: IEC-61000-4-2 8KV, Criterion B.
- 6-2-2. EFT/Burst Immunity Test: IEC-61000-4-4 1KV, Criterion B.
- 6-2-3. Surge Immunity Test: IEC-61000-4-5 1KV, Criterion B.

6-3 PFC(Power factor correction) and Harmonics

Power supply shall design with PFC circuit and meet IEC 61000-3-2 Class C. (50W max.)

6-4 Safety Compliance

Design to meet
IEC61347-2-13

6-4-1 Hi-pot test

100% Hi-pot tested,
Primary to second: 3750VAC 60 second , cut off current shall less than 5mA.
Primary to FG: 1500VAC 60 second , cut off current shall less than 5mA.

6-4-2 Leakage Current Test

Leakage Current :Measured at 230Vac,50Hz,0.75mA max.

6-4-3 Insulation Test

Insulation resistance: Primary to Secondary :500Vdc,25M ohms min.

7.ROHS COMPLIANT

All the component of the power supply have to be RoHS compliant.