



全漢企業股份有限公司
FSP TECHNOLOGY INC.

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SPECIFICATION



ESD13030275

FSP030-1ZZN1AP(060)

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SPECIFICATION

FSP030-1ZZN1AP(060)

R&D	CHECK	APPROVED	REV.
AL	HB	Bear	X2

1. SCOPE

The switching power supply is used for LED lighting products.

2. FEATURE

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

- * Wide input range.
- * Build in constant current circuit.
- * Short circuit protection / power limiting/over voltage protection/over temperature protection.
- * High reliability

3. MECHANICAL REQUIREMENTS

3.1 Power Supply Dimension Constraints

176.0mm (L)* 36.0mm (W)* 26.8mm (H)

(For detail mechanical size, please check the outline drawing.)

3.2 Power Supply Connectors

AC input:

Pin number	Output Name
L (Brown)	Line
N (Blue)	Neutral

DC Output:

Pin number	Output Name
V+(Red)	LED+ (Connect to LED High)
V-(Black)	LED- (Connect to LED Return)

4. ELECTRICAL REQUIREMENTS

4.1 Input AC

4.1.1 Input Voltage

Minimum	Nominal	Maximum	Unit
108	120/240/277	305	VAC

4.1.2 Input Frequency

Minimum	Nominal	Maximum	
47	50/60	63	Hz

4.1.3 Input Power Factor

PF \geq 0.90, @ 240Vac/50Hz input & full load.

4.1.4 Input Power

32.2W , 32.5VA typical. @120Vac input & full load.

32.1W , 33.8VA typical. @240Vac input & full load.

32.2W , 34.9VA typical. @277Vac input & full load.

4.1.5 Input current:

0.271A typical. @120Vac input & full load.

0.141A typical. @240Vac input & full load.

0.126A typical. @277Vac input & full load.

4.1.6 Inrush current:

$I_p < 5A/5mS$ @ the cold start / Ambient 25°C / Max load / 240Vac / 50Hz (Neglect initial 100us).

4.2 DC Output

4.2.1 Output Currents and Loads

They are measured at the load end of connected cables.

(Table.1) SMPS load limits

Ta=25°C

Signal Name	Constant Current (mA)			Voltage (Volts)		
	I min.	I normal	I max.	V min.	V typ.	V max.
Output for LED forward	570	600	630	24	36	48

Note: The no load output voltage should be less than 53V at any AC input condition.

4.3 Protection

4.3.1 Short Circuit Protection

DC output shall have short circuit protection. A short condition on any of DC outputs shall cause no damage to the power supply and shall have output short current $\leq 5A$ rms.

4.3.2 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.

4.3.3 Over Voltage Protection

Output voltage $< 60.0V$, when output feedback system is abnormal.

4.4 Efficiency

86% typical. (It will be measured at the full load / nominal line / 25°C and after warm stable.)

4.5 Life

EC-Cap. Design Life : 50,000 hours. @120Vac/240Vac & full load & ambient 25°C.

5. ENVIRONMENTAL REQUIREMENTS

5.1 Operating Temperature

Operating -20°C to + 45°C

Storage -20°C to + 85°C

Note : Thermal test must be done at nom. AC and at LED typical load.

5.2 Humidity (Non-condensing)

Operating 20% to 85% RH

Storage 10% to 95% RH

5.3 Hi-pot Test

Primary to Secondary : 3000VAC/ 1 minute & working current $< 5.0mA$.

5.4 Insulation Test

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

5.5 Leakage Current Test

Leakage current : Measured at 240Vac,50Hz, 0.25mA max.

6. INTERNATIONAL STANDARDS

6.1 EMI Standards

Designed to meet the following conducted limits:

EN55015

(Radiation must be tested with LED lighting.)

6.2 EMS Standards

6.2.1 Electrostatic Discharge Immunity Test : IEC-61000-4-2 8KV, Criteria B

6.2.2 EFT/Burst Immunity Test: IEC-61000-4-4 4KV, Criteria B

6.2.3 Surge Immunity Test: IEC-61000-4-5 1KV, Criteria B

(1) ± 2 KV/Common mode (2) ± 1 KV/Differential mode

The spec. change list

Item	Revision	Descriptions	Date
1	X1	Initial spec. release	05/10 '13
2	X2	Update output voltage range.	06/19 '13