

## SUBJECT: SCOPE OF DOCUMENT

### CONTAINS :

1-0 General Description

2-0. Input Requirements

3-0. Output Requirements

4-0. Reliability

5-0. Environment

6-0. Safety

7-0. Mechanical Characteristics

## 1-0. General Description

The purpose of the document is to specify a Single phase AC input, single output switching power supply. This specification is suitable for: **EA10731J** Series  
This product is AC to DC switching power transfer device, it can provide for a **12V, 5A max & 60W max** DC output with constant voltage source.  
This Specification defines the input, output, performance characteristics, environment, noise and safety requirement for a power supply.

## 2-0. Input Requirements

### 2-1. AC Input Voltage

Maximum Voltage: 264Vac  
Normal Voltage: 100~240Vac  
Minimum Voltage: 90Vac

### 2-2. AC Input Frequency

Maximum Frequency: 63Hz  
Normal Frequency: 50~60Hz  
Minimum Frequency: 47Hz

### 2-3. Input Current

**2.0A (Max.)** @ 100Vac/60Hz-240Vac/50Hz with full load.

### 2-4. Energy saving standards:

#### 2-4-0. Designed to meet the following standard :

DoE Level VI

#### 2-4-1. Efficiency

**88.0%** ( avg. ) at 115Vac/60Hz & 230Vac/50Hz input voltage and 25%, 50%, 75% & 100% of max output current. Meet **DoE Level VI**.

#### 2-4-2 No Load Power Consumption.

No Load Watt < **0.21W** at normal line input.

### 2-5. Configuration

3-wire AC input (Line ,Neutral, FG)

### 2-6. Input Fuse

The hot line side of the input shall have a fuse, rating (3.15A/250V)

### 2-7. Inrush Current

**60A** at 110 Vac  
**120A** at 220 Vac At cold start, maximum load.

## 2-8. Line Regulation

This line regulation is less than  $\pm 1\%$ , of rated output voltage @ full load .

## 2-9. Hold Up Time

**8.3 mSec.**, @ Normal line, with full load.

## 2-10. Rise Time

**50 mSec.**, @ 115V AC input, with full load.

From 10% to 90% of output voltage.

## 2-11. Turn-ON Time

The output voltage should rise to 90% of rated output voltage in less than **3 SEC.** from AC apply to 110Vac start up.

## 3-0. Output Requirements

### 3-1. Output Voltage and Current

Output Voltage (Vdc)	Current Min.(A)	Current Max.(A)
+12V	0	5.0A

### 3-2. Load Regulation

Voltage (Vdc)	Tolerance (%)	Regulation (Vdc)
+12V	+5/, -5	11.4~12.6V

### 3-3. Dynamic Load Regulation

$\pm 5\%$  excursion for **50% - 100%** or **100% - 50%** load change of DC output at any frequency up to 1KHz(duty 50%)

### 3-4. Ripple & Noise

The power supply shall not exceed the following limits on the indicated voltage for 60Hz or 50Hz ripple, Switching frequency ripple and noise and dynamic load variations measured with a 20MHz bandwidth

Output	Ripple/Noise
+12V	240mV

Input condition : for rated voltage , Output condition : for max load

Ripple / Noise: 60Hz ripple + switching ripple and noise

Ripple & Noise are measured at the end of output cable which are added a 0.1uF ceramic capacitor and a 47uF electrolytic capacitor

### **3-5. Over Voltage Protection**

175% Max. of rated voltage.

The output voltage shall be shutdown and auto-recover mode when OVP occurred.

### **3-6. Over Current Protection**

110~180% output current. At 100-240Vac input,

The adapter can withstand continuous short at DC output and no damage.

It will enter into normal condition if the fault condition is removed.

### **3-7. Stability**

2% Max. at constant load with constant input (after **30 minutes** of operation).

### **3-8. Temperature Rise (Optional)**

Less than 45 on top/bottom case at normal AC input & 80% load of DC output at environment temperature 25 .

### **3-9. Drop-out**

Output voltage shall remain within the specified regulation range, through the absence of a line input during 1/2 cycle, at full load and normal AC line input

### **3-10. Voltage Isolation**

The DC ground will be isolated from the AC neutral and AC line.

## **4-0. Reliability**

### **4-1. MTBF ( MIL-HDBK-217F )**

The power supply shall be designed and produced to have a mean time between failure ( MTBF) of 100,000 hours at 25 degrees C.

## **5-0. Environment**

### **5-1 Temperature**

- a. Operating : 0 to 40
- b. Storage : -20 to 85

### **5-2 Humidity**

- a. Operating : 10 to 90 %
- b. Storage: 5 to 90 %

### 5-3 Altitude

From sea level to 5,000 Meters ( operation ) and 5,000 Meters (no operation)

## 6-0. Safety

### 6-1. Hi-Pot Test

**3000Vac/4242VDC, 3mA 2Sec.** between primary and secondary circuit  
**L,N to FG 1800Vac 3mA 2Sec.**

### 6-2. Insulation Test

500Vdc, 2 Sec. between primary and secondary circuit  
IR should **50 MΩ.**

### 6-3. Leakage Current

**500 uA,** at 240Vac/50 Hz

### 6-4. Safety

UL, CUL, TUV, CB, CE, FCC, PSE, BSMI

### 6-5. EMS

Items	Specification	Reference
ESD	Contact: $\pm 4KV$	IEC 61000-4-2
	Air: $\pm 8KV$	
RS	Frequency: 1KHz Field Strength: 3V/M	IEC 61000-4-3
EFT	1.0 KV on input AC power ports.	IEC 61000-4-4
SURGE	Line to Line: $\pm 1KV$ (peak)	IEC 61000-4-5
	Line to F.G : $\pm 2KV$ (peak)	

### 6-6. EMI

Comply with Standards
CISPR 32, EN 55032 Class B
FCC (PART 15 CLASS B)

## 7-0. Mechanical Characteristics

**7-1. Physical Size :** 105.5mm (L) \* 46mm (W) \* 28mm (H)

**7-2. Enclosure material :** 94V-1 minimum

### **7-3. Output Cable (Reference) : UL2468 #18**

### **7-4. Vibration Test**

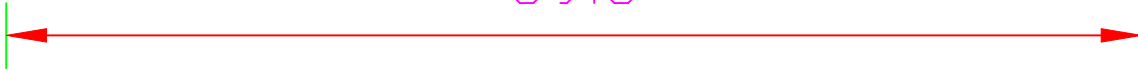
The vibration frequencies are set at 20Hz, with total amplitude of 1.5mm  
Along the 3 directions namely X-Y-Z. The each direction should be vibrated  
for 60 minutes, after testing no abnormal electrical or mechanical should occur.

### **7-5. Drop Test (Referencing to CSA C22.2 No.950/UL1950/UL1310/ EN62368)**

Products shall be dropped from a height of 1000 mm onto a horizontal surface  
consists of hardwood at 13mm thick , mounted on two layers of plywood each  
19mm to 20mm thick , all supported on a concrete or equivalent non-resilient  
floor. Upon conclusion of test , the equipment cannot into hazardous moving  
parts and hazardous voltage circuits need be operational , and need meet Hi-Pot  
specification requirement..

### **7-6. Net Weight (Reference) : 300 g**

69.3



AC ADAPTER 電源供應器  
 MODEL 型號 :EA10731J-120  
 AC INPUT 輸入:100-240Vac, 2.0A, 50-60Hz  
 DC OUTPUT 輸出:12.0V $\overline{=}$ 5.0A 60.0W

CAUTION 注意  
 FOR INDOOR USE ONLY 室內產品使用  
 I.T.E. USE ONLY

DATE CODE: 

19	20	21			1	2	3	4	5
1	2	3	4	5	6	7	8	9	0

  
 出廠日期

13128

C1 C3

MADE IN CHINA 中國製造

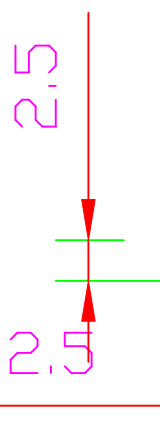
UL US LISTED  
 I.T.E. POWER SUPPLY  
 41TJ  
 E209833 LPS

TUV SUD  
 R33147  
 RoHS

CE  
 PS E  
 RoHS

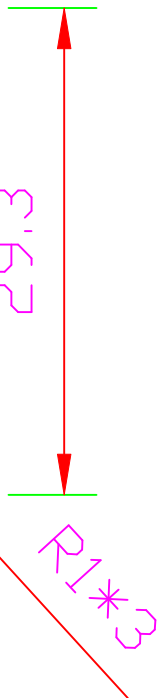
2.5

2.5



29.3

R1\*3

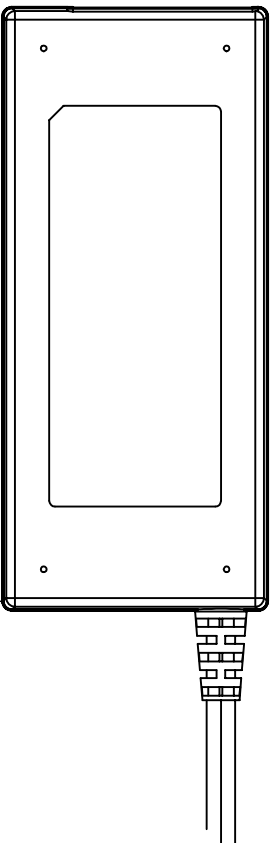
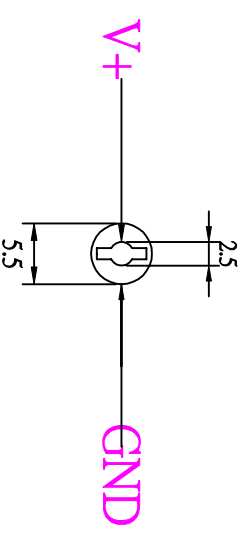
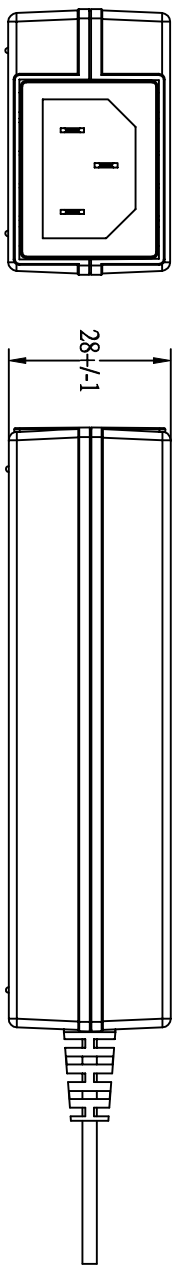
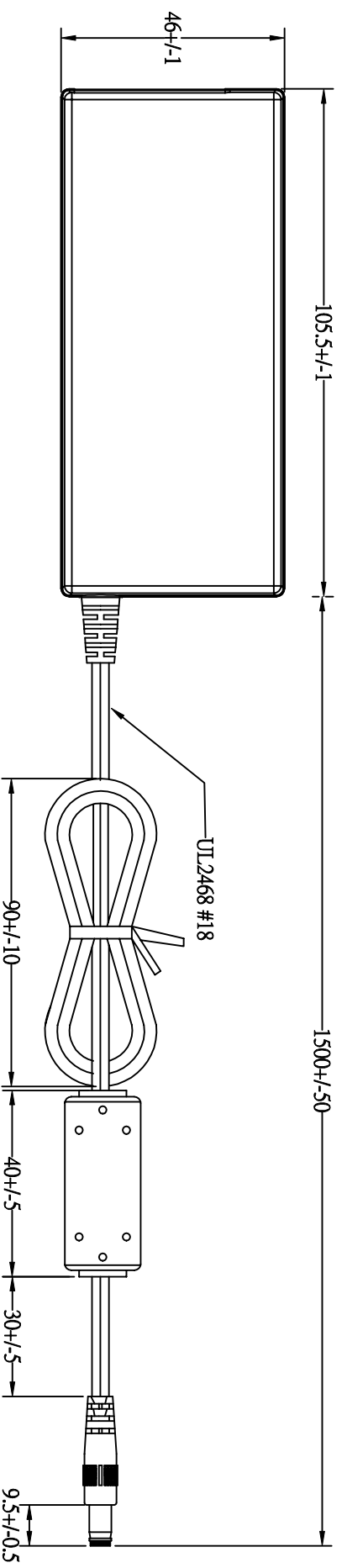


P/N.: 3128

Background: Black color

Character: Silver color

Unit: mm



APPROVED				
MODEL	EA10731J(03)	UNIT	mm	DESIGNED
COLOR	BLACK	SCALE		CHECK
CUS.		DATE	2020-01-06	DRAWING
				L.J.YU