

## ***SPECIFICATION***

*Customer:* MG

*Customer's part number/*

*Description :* Input:100~240VAC 50/60Hz Output:24VDC 1A

*Our model no/* ST241A

*Date/* 2016-4-27

*Sample no.*

*Ver1.0*

| APPROVAL SIGNATURE |            |           |
|--------------------|------------|-----------|
| APPROVED BY        | CHECKED BY | TESTED BY |
|                    |            |           |

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| APPROVAL |        |           |
|----------|--------|-----------|
| DESIGN:  | CHECK: | APPROVAL: |
|          |        |           |

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## **1、SCOPE:**

**This specification is to specify the functional requirements of ST241A switching power supply.**

## **2、INPUT CHARACTERISTICS:**

### **2.1 Input Voltage:**

**Rated Voltage:100-240Vac**

**Variation Range:90-264Vac**

### **2.2 Input Frequency:**

**Rated Frequency: 50/60Hz.**

**Variation Frequency:47-63Hz**

### **2.3 Input Current:**

**0.8Amps Max. input current at any input AC voltage and output full load.**

### **2.4 Inrush Current:**

**40 Amps Max. Cold start at 240Vac input, rated output load and 25°C ambient.**

### **2.5 Ac Leakage Current:**

**0.25mA Max. at 240Vac input.**

### 3、 OUTPUT CHARACTERISTICS:

#### 3.1 Power output

| Voltage | Min. Load | Rated Load | Peak | Output power |
|---------|-----------|------------|------|--------------|
| 24Vdc   | 0.01A     | 1A         |      | 24W          |

#### 3.2 Combined Load/Line Regulation

| Voltage | Min. Load | Rated Load | Line Regulation | Load Regulation |
|---------|-----------|------------|-----------------|-----------------|
| 24Vdc   | 0.01A     | 1A         | ±1%             | ±5%             |

#### 3.3 Ripple and Noise:

Under nominal voltage and nominal load, the ripple and noise are as follows when measure with Max. Bandwidth of 20MHz and parallel 10uF electrolysis capacitor and 0.1uF ceramic capacitor crossed connect at testing point.

| Voltage | Ripple and Noise (Max.) |
|---------|-------------------------|
| +24Vdc  | 240mV p-p               |

#### 3.4 Turn on delay time:

2Second Max. at 115Vac input and output Max. load.

#### 3.5 Rise time:

40mS Max. at 115Vac input and output Max load.

#### 3.6 Hold up time:

5mS Min. at 115Vac input and output Max. Load.

#### 3.7 Efficiency:

Average efficiency **86.2%** minimum at 25%, 50%, 75% & 100% of full-loading and 230Vac input (After warm up 30 minutes). Efficiency level VI.  
no load input watt  $\leq 0.1W$

#### 3.8 Overshoot:

10% Max. When power supply at turn on or turn off.

#### **4、PROTECTION REQUIREMENT:**

##### **4.1 Short circuit protection:**

Power adapter shall have self-limiting protection to protect against short circuit or overload conditions. No damage to the power adapter shall result from a continuous or intermittent short circuit condition. It will be auto-recovered when the failure is removed.

##### **4.2 Over current Protection:**

After output current of power supply reach 1.2~2A, the over current protection shall operate, the power supply will be auto recovered when over current faults remove.

#### **5、ENVIRONMENTAL REQUIREMET:**

##### **5.1 Operating Temperature:**

0°C to 45, Full load, Normal operation.

##### **5.2 Storage Temperature: -40°C to 85°C**

With package

##### **5.3 Relative Humidity:**

5% (0°C) ~95% (40°C) RH, 72Hrs, Full load, Normal operating.

##### **5.4 Vibration:**

###### **1. Operating: IEC 721-3-3 3M3**

5~9Hz,A=1.5mm

(9~200Hz,Acceleration 5m / S)

###### **2. Transportation:**

IEC 721-3-2 2M2

5~9Hz,A=3.5mm

9~200Hz, Acceleration=5m / S

200~500Hz, Acceleration=15m / S

###### **3. Axes,10 cycles per axis.**

No permanent damage may occur during testing.

The product has to restore to its original situation after power off / on.

## 5.5 Dropping Packed:

Samples should be finished products. Drop them freely to the surface of hardwood three times and the contact area should be the part easiest to get damaged.

76cm height, free fall on the 20mm thick planks, the appearance allowed to wear but can not have cracks, input plug is not loose, crooked, various functions were normal.

## 6. Reliability Requirements

### 6.1. Burn-in

The power supply shall be burn-in for 2-4 Hours under normal input and 80% rated load at  $40^{\circ}\text{C} \pm 5^{\circ}\text{C}$

### 6.2. MTBF Qualification

The MTBF shall be 50,000 hours at  $25^{\circ}\text{C}$ , full load and nominal input condition

## 7. SAFETY AND EMI REQUIREMENT:

### 7.1 Safety: accord with

| certificate                      | Country   | standards           |  |
|----------------------------------|-----------|---------------------|--|
| <input type="checkbox"/> UL/CUL  | USA       | UL60065             |  |
| <input type="checkbox"/> UL/CUL  | USA       | UL60950             |  |
| <input type="checkbox"/> ETL/CUS | USA       | IEC/EN60950         |  |
| <input type="checkbox"/> TUV/GS  | Europe    | EN60065             |  |
| <input type="checkbox"/> TUV/GS  | Europe    | EN60950             |  |
| <input type="checkbox"/> FCC     | USA       |                     |  |
| <input type="checkbox"/> CE      | Europe    | EN60065             |  |
| <input type="checkbox"/> CE      | Europe    | EN60950             |  |
| <input type="checkbox"/> IRAM    | Argentina |                     |  |
| <input type="checkbox"/> MEPS    | Australia | AS/NZS 4665         |  |
| <input type="checkbox"/> SAA     | Australia | AS/NZS 60065        |  |
| <input type="checkbox"/> SAA     | Australia | AS/NZS 60950        |  |
| <input type="checkbox"/> CCC     | China     | GB8898              |  |
| <input type="checkbox"/> CCC     | China     | GB4943              |  |
| <input type="checkbox"/> PSE     | Japan     |                     |  |
| <input type="checkbox"/> CB      | Europe    | IEC60065            |  |
| <input type="checkbox"/> CB      | Europe    | IEC60950            |  |
| <input type="checkbox"/> C-TICK  | Australia | AS/NZS CISPR13:2004 |  |
| <input type="checkbox"/> EK/KC   | Korea     | K60065              |  |
| <input type="checkbox"/> EK/KC   | Korea     | K60950              |  |

## 7.2 EMI STANDARD

Meets the Limits of

<1>.FCC Part 15 class B rules

<2>.EN55022, EN55013 class B rules

## 7.3 EMS STANDARD

|               |  |
|---------------|--|
| EN 61000-3-2  | Harmonic current emissions   |
| EN 61000-3-3  | Voltage fluctuations & flicker   |
| EN 61000-4-2  | Electrostatic Discharge(ESD): 8kV air discharge, 4kV contact discharge |
| EN 61000-4-3  | Radio-Frequency Electromagnetic Field Susceptibility Test-RS           |
| EN 61000-4-4  | Electrical Fast Transient/Burst-EFT                                    |
| EN 61000-4-5  | Surge Immunity Test: AC Power Line: line to line 2KV                   |
| EN 61000-4-6  | Conducted Radio Frequency Disturbances Test-CS                         |
| EN 61000-4-8  | Power Frequency Magnetic Field Test                                    |
| EN 61000-4-11 | Voltage Dips   |

## 7.4 Hi-Pot Test

Hi-pot test shall meet with the following table test requirements, 100% production test must be performed for each test item and be maintained at that level for a minimum of 5 seconds without failure.

| ITEM                 | SPECIFICATION  | REMARK    |
|----------------------|----------------|-----------|
| Primary to Secondary | 3000Vac/5mA/5s | No arcing |
| Primary to P.G       |                | No broken |
| Secondary to P.G     |                |           |

## 7.5 Insulation resistance

| ITEM                 | SPECIFICATION          | REMARK                    |
|----------------------|------------------------|---------------------------|
| Primary to Secondary | >50M $\Omega$ ; DC500V |                           |
| Primary to P.G       | >50M $\Omega$ ; DC500V | For class I power adapter |

## 8、Test Equipment List

|    |      |         |           |
|----|------|---------|-----------|
|    |      |         |           |
| 1  |      | VI-mEAS | S7210     |
| 2  |      | LW      | L212CH    |
| 3  |      | TET     | L100      |
| 4  |      | UNI-T   | UT5I      |
| 5  |      |         | PF9810    |
| 6  |      | LUTRON  | TW-902C   |
| 7  |      |         | LX-817    |
| 8  |      |         | LX-8827B  |
| 9  |      |         | FZD-25    |
| 10 |      | SOKON   | PT8000    |
| 11 |      |         |           |
| 12 |      |         | 0-150mm   |
| 13 | RoHS |         | EDX 1800B |
| 14 |      |         | PF9810    |

## 9、MECHANICAL REQUIREMENT:

### 9.1 Enclosure:

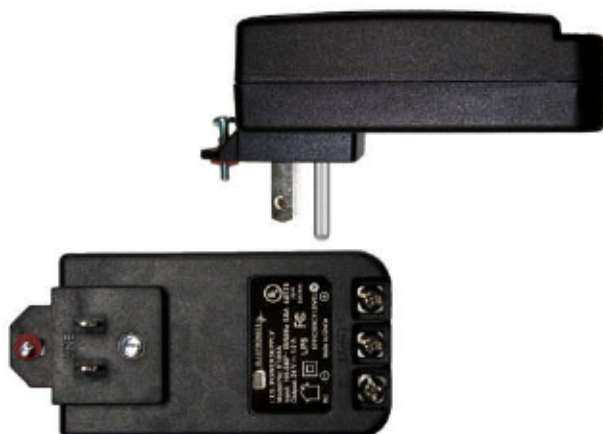
: L109.55x W54.9x H41.18mm;

The power supply size: L109.55x W54.9x H41.18mm;

### 9.2 Input Connector:

Two pin input plug.

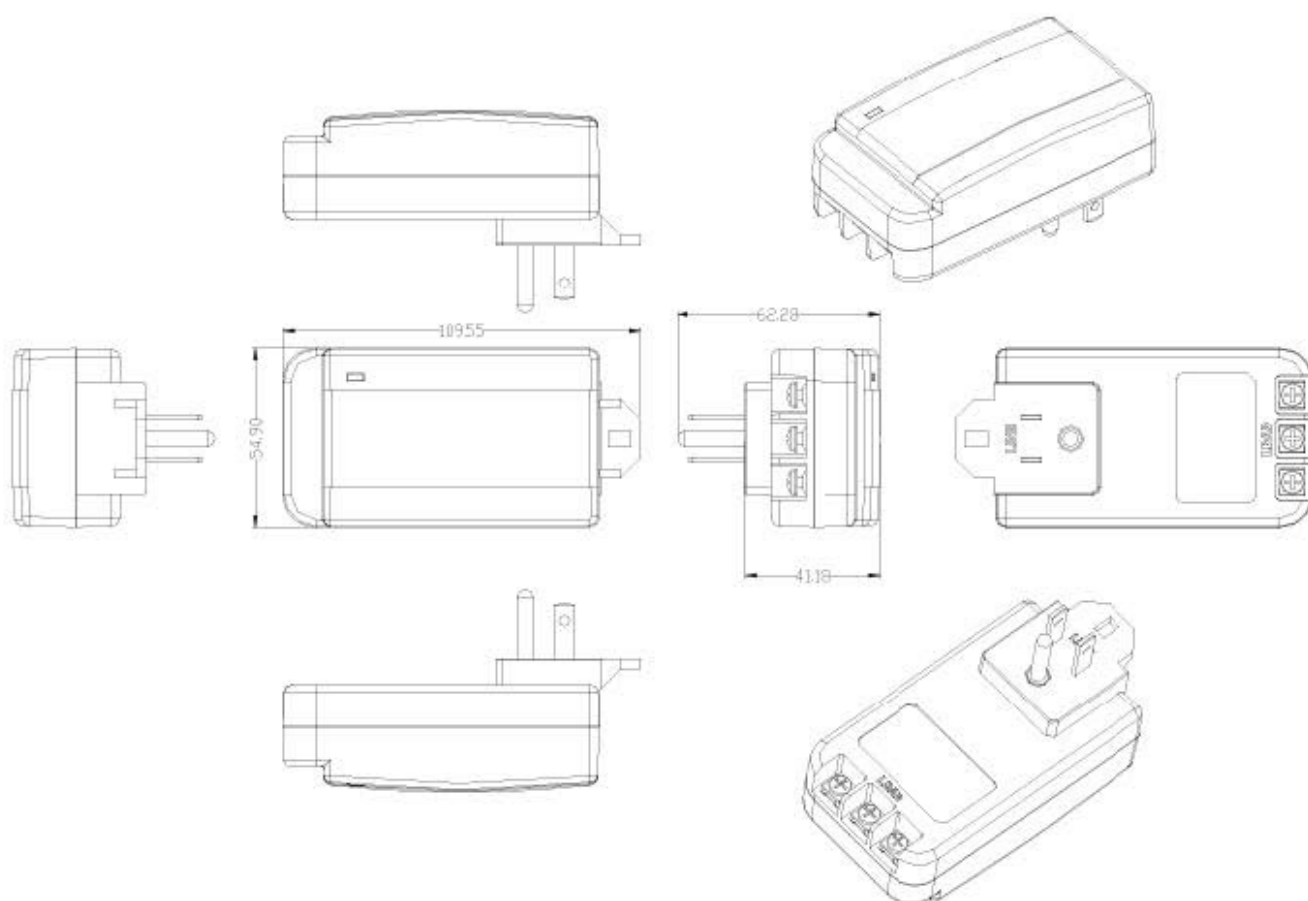
### 9.3 Photograph of the product



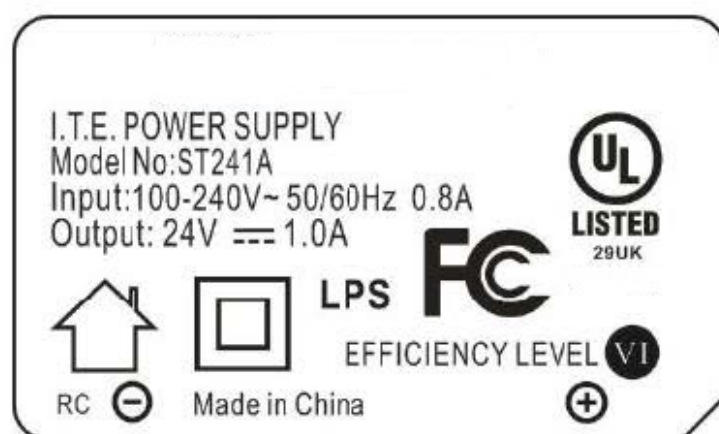


## 10、OUTLINE DIMENSION:

unit in: mm



## 11、 LABEL:



39.5×23.5 mm

