APPROVAL SHEET

CUSTOMER	Digimax
CUSTOMER P/N	
DESCRIPTION	**12V/5A**
EDAC MPN	**EA10681N(152)**
EDAC MODEL NO FOR SAFETY	**EA10681N-120**
DATE	**2018-05-09**
REVISION	**0**

APPROVED	DESIGN	PREPARE	
葉慶兵	朱杰鈴	朱杰鈴	**RoHS**
CONCLUSION **判定結果**	**APPROVED** **承認**	**CONDITON APP'D** **有條件承認**	**C□ST□MER'S SI□NAT□RE:** **客戶簽章:**

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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: **EA10681N** This product is AC to DC switching power transfer device, it can provide for a **12V/ 5.0A , 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 : 115~230Vac
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 :

Designed to meet the following standard :
Energy Star Ver. 2.0
DoE Level VI
ErP STEP 2

2-4-1 Efficiency: Average Efficiency >= 88%@ Normal Input Voltage

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 (**T3.5A/250V**)

2-7. Inrush Current

≦ **160A** at 230 Vac At cold start, maximum load.
≦ **80A** at 115 Vac At cold start, maximum load.

2-8. Line Regulation

This line regulation is less than **± 1%**, 100Vac/60Hz-240Vac/50Hz, with full load.

2-9. Hold Up Time

≧ **10 mSec**.@ 100Vac/60Hz-240Vac/50Hz, with full load.

2-10. Rise Time

≦ **50 mSec**. @ 100Vac/60Hz-240Vac/50Hz, 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 **3.0 SEC.** 100Vac/60Hz-240Vac/50Hz, with full load.

2-12 Fall Time

≦ **25 mSec**.@ 100Vac/60Hz-240Vac/50Hz, with full load.

3-0. Output Requirements

3-1. Output Voltage and Current

Output Voltage (Vdc)	Current Min.(A)	Current Max.(A)
12V+/-5%	**0A**	**5.0A**

3-2. Combine Regulation

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

3-3.Static Load Regulation

≦**±5%**@ 100Vac,240Vac input, with 0A--full load

3-4. Dynamic Load Regulation

≦**±5%** excursion for **50% - 100%** load @ 100Vac-240Vac input

3-5. Drift(Warm-up period)

≦**±2%** @ 100Vac-240Vac input, with full load for 30Minutes warm up

3-6. 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

Ripple & Noise Vp-p ≦**240mV** @ 100Vac-240Vac input with full load

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

3-7. Over Voltage Protection

150% Max. of rated output voltage , output shutdown, no damage

3-8. Short-Circuit Protection

The adapter can withstand continuous short at DC output and no damage, It will enter into normal condition if the fault condition is removed. The short circuit impedance should be less than 0.3R.

3-9. Over current protection

The OCP trigger point is less than 180% Io @ 100-240Vac input, Autorecovery mode.

3-10. Drop-out (Power Line Disturbance)

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

3-11. 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 (non operation)

6-0. Safety

6-1. Hi-Pot Test

3000Vac/4242VDC, 3mA 2Sec. between primary side and secondary side.

L,N to FG 1800Vac 3mA 2S

6-2. Leakage Current

≦ **250 uA**, at 240Vac/50 Hz

6-3. Safety

UL, CUL, TUV/GS, CB, CE, FCC, PSE, CCC, RCM, CU, ARGENTINA, BSMI

6-4. EMS

Items	Specification	Reference
ESD	Contact: ± 4KV	IEC 61000-4-2
	Air: ± 8KV	
RS	Frequency: 80~1000MHz Field Strength: 3V/M, 80% AM(1KHz)	IEC 61000-4-3
EFT	1.0 KV on input AC power ports.	IEC 61000-4-4
SURGE	Line to Line: ± 1KV (peak)	IEC 61000-4-5
	Line to F.G : ± 2KV (peak)	

6-5. EMI

Comply with Standards
CISPR 32, EN 55032 Class B

7-0. Mechanical Characteristics

7-1. Physical Size : 113mm (L) *49 mm (W) *35 mm (H)

7-2. Enclosure material : 94V-0 minimum

7-3. Output Cable (Reference) : UL1185 #16

7-4. Vibration Test

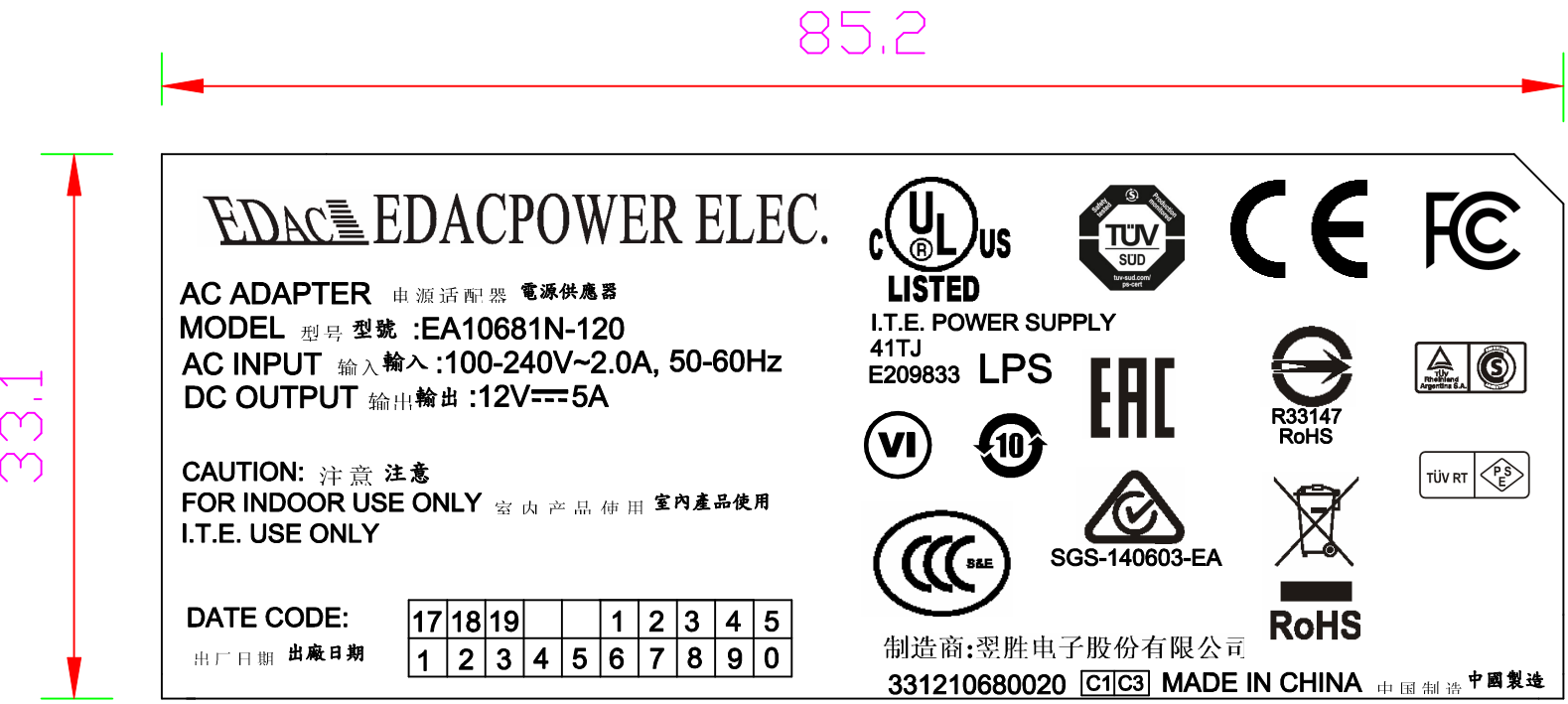
The vibration frequencies are set at 20Hz, with total amplitude of 1.5mm Along the 3 directions namely X-Y-Z. The each direction should be vibrated for 60 minutes, after testing no abnormal electrical or mechanical should occur.

7-5. Drop Test (Referencing to CSA C22.2 No.950/UL1950/UL1310/EN60950)

Products shall be dropped from a height of 900 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 need not be operational.

7-6. Gross weight

Weight: 300+/-5g



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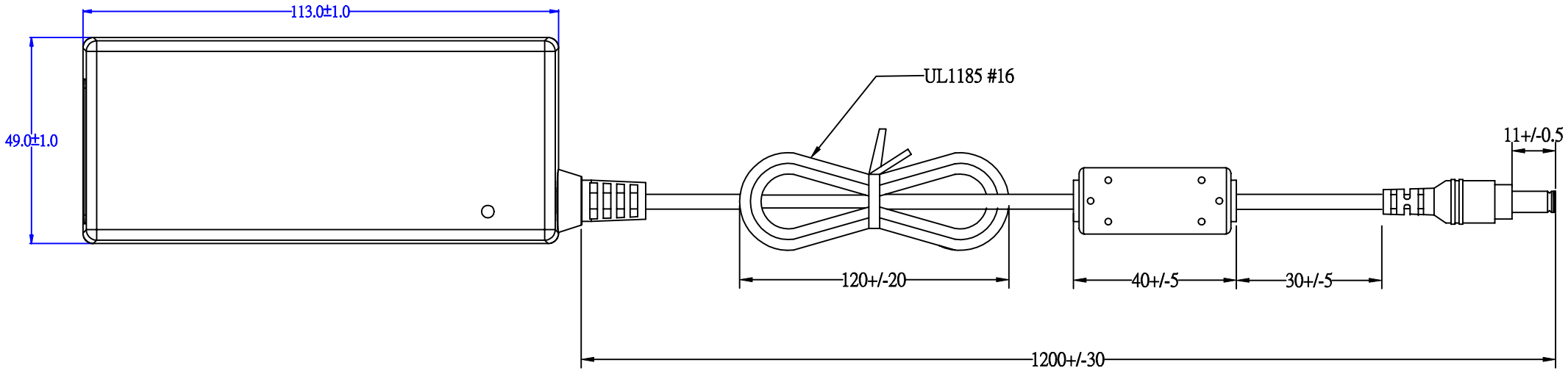
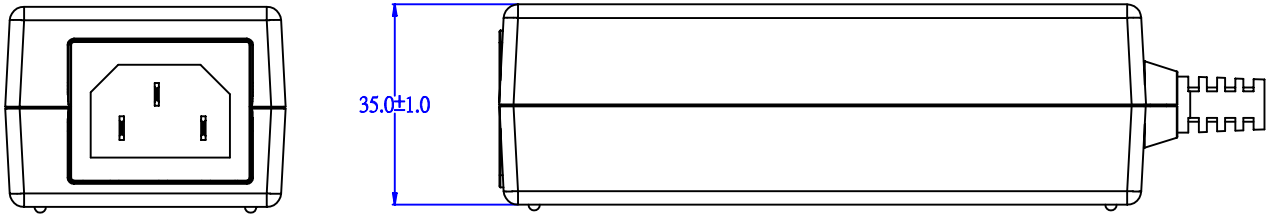
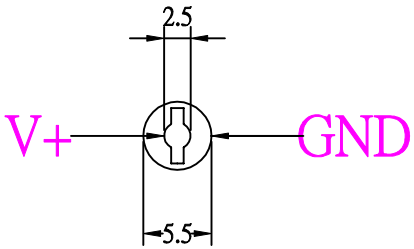
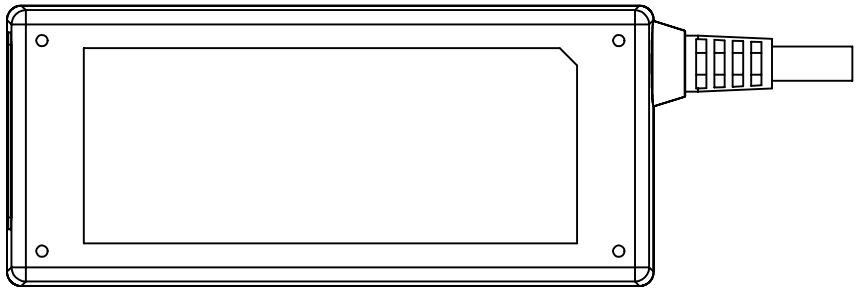
Character: Silver color
Unit: mm









EDAC POWER ELEC.				APPROVED
MODEL	EA10681N(152)	UNIT	mm	DESIGNED
color	BLACK	SCALE		CHECK
cus.		DATE	2018-05-09	DRAWING L.J.YU