SUBJECT: SCOPE OF DOCUMENT

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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: **EA10681T** Series
This product is AC to DC switching power transfer device, it can provide for a **54V,1.33A** max & **72W** 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 :

Energy Efficiency level VI

2-4-1.Efficiency

≧**88%** (avg.) at 115Vac/60Hz & 230Vac/50Hz input voltage and 25%, 50%, 75% &100% of max output current.

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

≦ **80A** at 110 Vac

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

2-8. Line Regulation

This line regulation is less than ± **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)
+54V	0	1.33A

3-2. Load Regulation

Voltage (Vdc)	Tolerance (%)	Regulation (Vdc)
+54V	+5/, -5	51.3~56.7V

3-3. Dynamic Load Regulation

±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
+54V	**1.0%** max. of rated output voltage

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

150% Max. of rated voltage.
The output voltage shall be shutdown and auto-recover mode when OVP occurred.

3-6. Stability

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

3-7 Over Current Protection

110~200% 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.

3-8.Temperature Rise

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.
DC ground is also isolated (1KV) from Earth Ground.

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, 10mA 2Sec. between primary and secondary circuit

1800Vac, 10mA 2Sec. between L,N and FG circuit

6-2. Insulation Test

500Vdc, 2 Sec. between primary and secondary circuit

IR should ≧ **50 MΩ.**

6-3. Leakage Current

≦**750 uA**, at 240Vac/50 Hz

6-4. Safety

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

6-5. EMS

Items	Specification	Reference
ESD	Contact: ± 4KV	IEC 61000-4-2
	Air: ± 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: ± 1KV (peak)	IEC 61000-4-5
	Line to F.G : ± 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 : 113 mm (L) * 49 mm (W) * 35.0mm (H)

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

7-3. Output Cable (Reference) : **UL1185 #18**

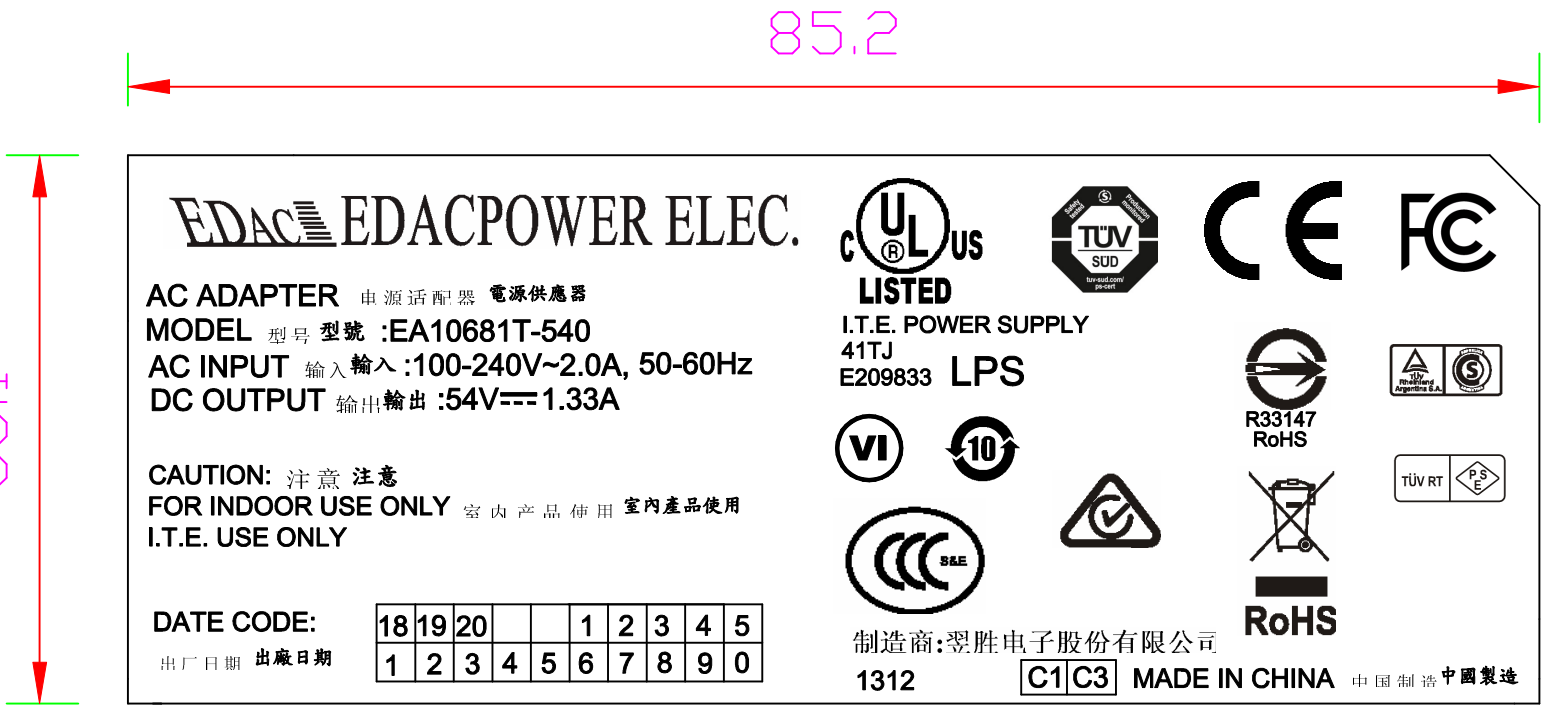
7-4. Vibration Test

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.

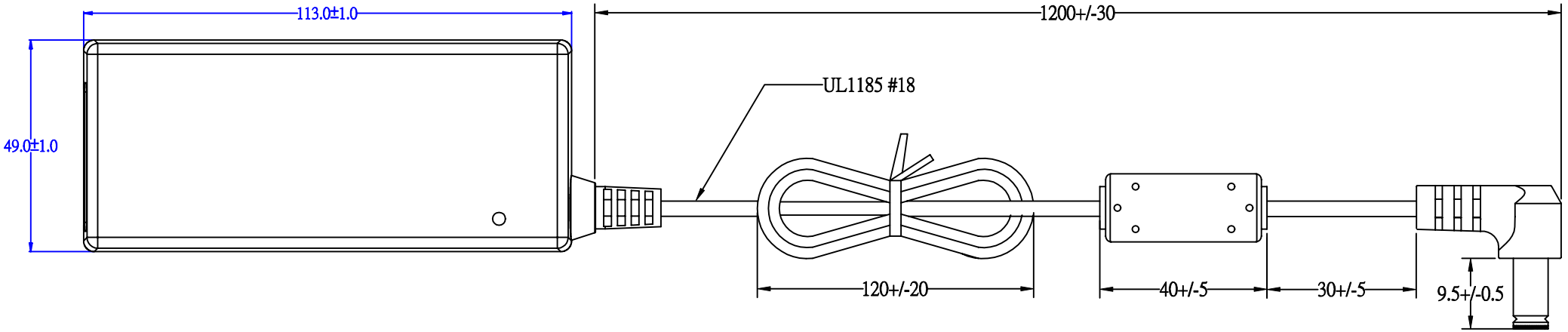
7-5. Drop Test (Referencing to CSA C22.2 No.950/UL1950/UL1310/EN60950)

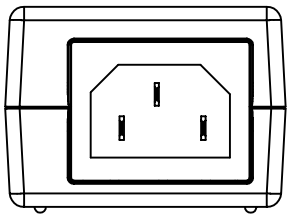
Products shall be dropped from a height of 900 mm onto a horizontal surface consists of hardwood at 13mm thick, mounted on two layers of plywood each 19mm to 20mm thick, all supported on a concrete or equivalent non-resilient floor. Upon conclusion of test, the equipment need not be operational.

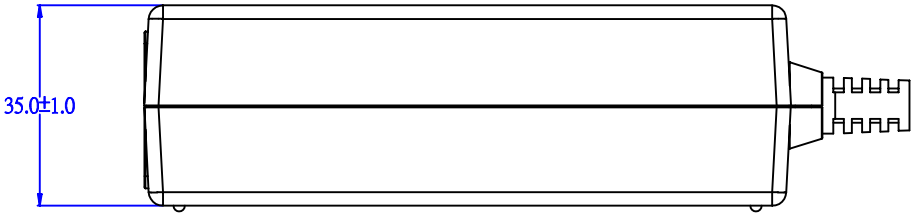
7-6. Net Weight (Reference) : **300 g**

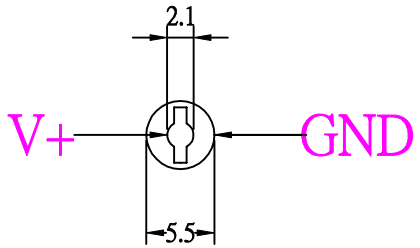


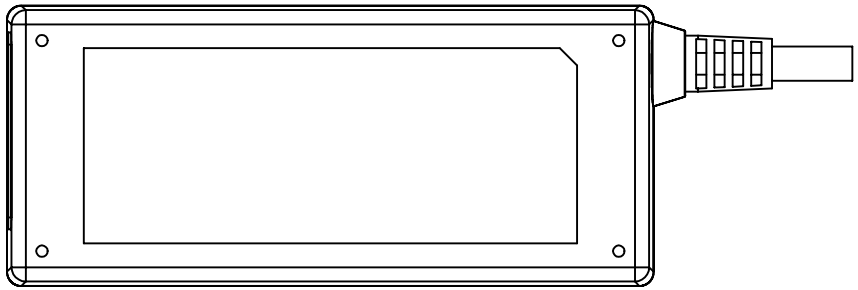
EDAC LABEL P/N.: 312
Background: Black color
Character: Silver color
Unit: mm



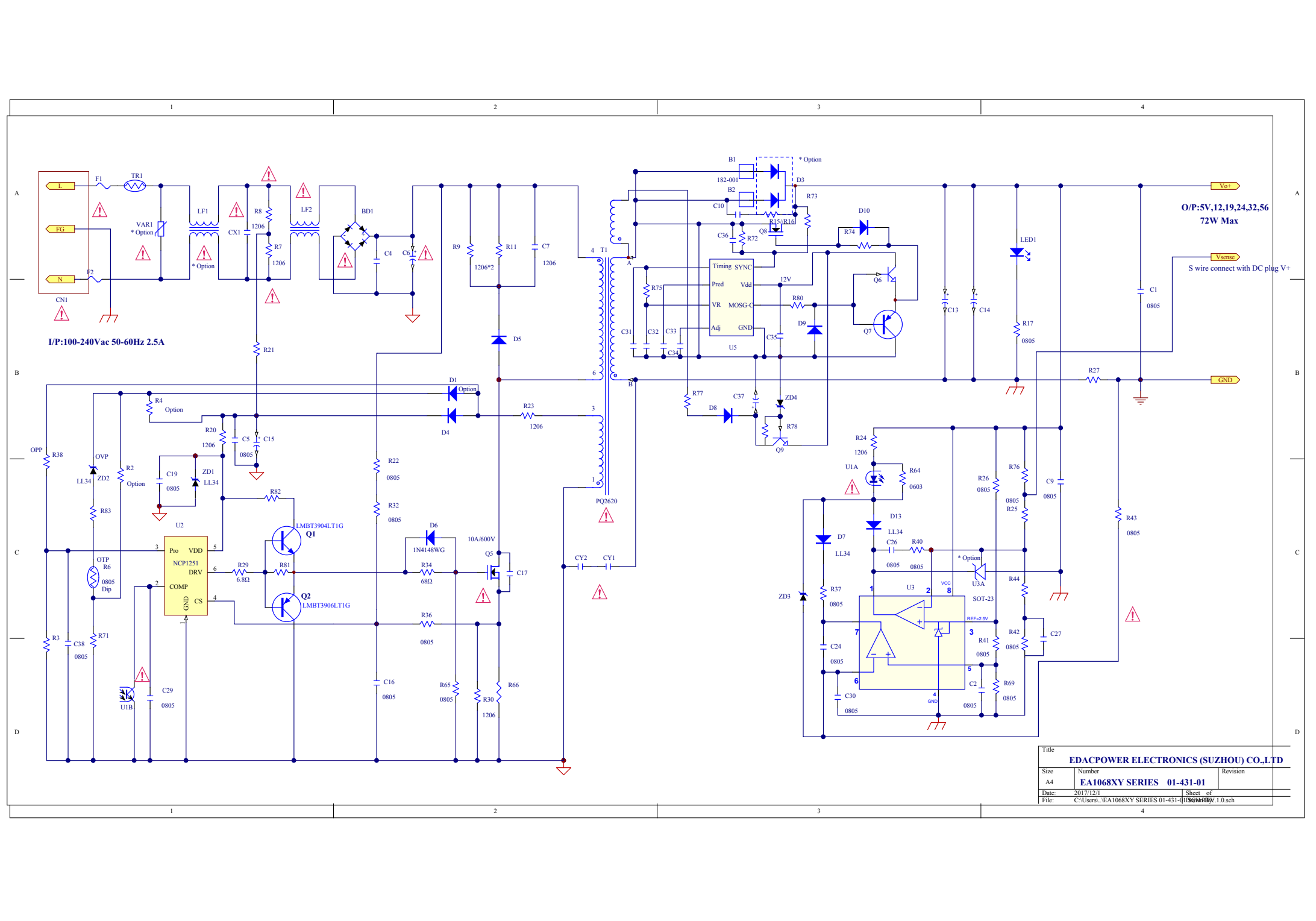








EDAC POWER ELEC.				APPROVED
MODEL	EA10681T(16)	UNIT	mm	DESIGNED
color	BLACK	SCALE		CHECK
cus.		DATE	2018-01-22	DRAWING L.J.YU


I/P:100-240Vac 50-60Hz 2.5A
O/P:5V,12,19,24,32,56
72W Max
S wire connect with DC plug V+
Vo+
Vsense
GND
L
FG
N
CN1
F1
F2
TR1
VAR1
* Option
LF1
LF2
CX1
R8
1206
R7
1206
BD1
C4
C6
R9
1206*2
R11
C7
1206
D5
T1
PQ2620
B1
182-001
* Option
D3
B2
C10
R73
R15/R16
D10
R74
C36
R72
Q8
Timing
SYNC
Pred
Vdd
VR
MOSG-C
Adj
GND
U5
12V
R80
D9
Q6
Q7
R75
C31
C32
C33
C34
C35
C13
C14
LED1
R17
0805
C1
0805
R27
R21
D1
Option
D4
R4
Option
R23
1206
R77
D8
C37
ZD4
R78
Q9
R20
1206
C5
0805
C15
R22
0805
R32
0805
OPP
R38
OVP
LL34
ZD2
R2
Option
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0805
ZD1
LL34
U2
R82
R83
Pro
VDD
NCP1251
DRV
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GND
CS
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Q1
Q2
LMBT3906LT1G
R29
6.8Ω
R81
D6
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R34
68Ω
10A/600V
Q5
C17
CY2
CY1
OTP
R6
0805
Dip
R3
C38
0805
R71
R36
0805
C16
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R65
0805
R30
1206
R66
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C29
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D7
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U3
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C27
R44
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0805
R69
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R26
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R76
0805
R25
C9
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R43
0805
EDACPOWER ELECTRONICS (SUZHOU) CO.,LTD
Size
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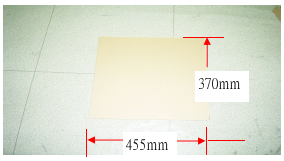
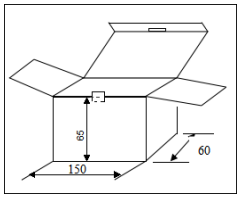
Number
EA1068XY SERIES 01-431-01
Revision
Date:
2017/12/1
Sheet of
File:
C:\Users\..\EA1068XY SERIES 01-431-01 SCH_PRI_V.1.0.sch

EA10681T(16)Package diagram

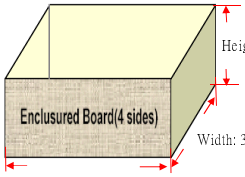
Isolating Board: ISOLATING BOARD 8X8/C楞三层 455*370mm /XINLING --510



Plain Box: 禮盒白色 150*60*65mm—294106801



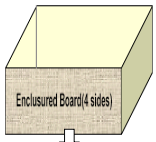
Enclosing board: ENCLOSING BOARD 8X8/C楞 465*382*195mm —510202092



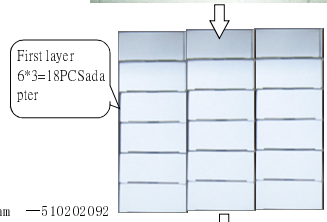
Carton: CARTON G+ZSG/AB 480*397*215mm/ XIN LING --510101274

Carton

Enclosing board



Isolating Board*1



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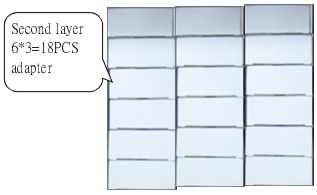

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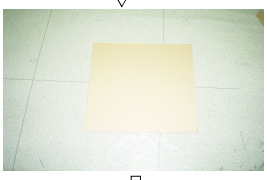

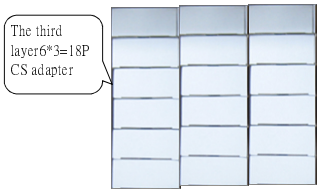

Isolating Board*1