

1. SCOPE

The document detail the electrical, mechanical and environmental specifications of a SMPS, the power supply provide 12W continuous output power.

The power supply shall meet the **RoHS** requirement.

1.1. Description

SMPS Adapter(Wall mount)

2. Input Characteristics

2.1. Input Voltage & Frequency

The range of input voltage is from 90Vac to 264Vac single phase.

	Minimum	Nominal	Maximum
Input Voltage	90Vac	100Vac~240Vac	264Vac
Input Frequency	47Hz	60Hz/50Hz	63Hz

2.2. Input AC Current

0.4Amax. @ 100-240Vac input & Full load

Inrush Current (cold start)

30Amax. @ 264Vac input

2.4. Efficiency (Average)

77.8% min. @ 115Vac , 230Vac input 25%,50%,75%,100% load
115Vac 230Vac
25% , 50% , 75% , 100%

2.5. Energy Consumption

100-240V 0.3

3. Output Characteristics

3.1. Static Output Characteristics <Vo & R+N>

Output Rate	Rated Load		Output Range	R+N	Remark
	Min. Load	Max. Load			
+24V	0.0A	0.5A	22.8V ~25.2V	100mVp-p	

Ripple & Noise: Measurement is done by 20MHz bandwidth oscilloscope and the output paralleled a 0.1uF ceramic capacitor and a 10uF electrolysis capacitor. (test under the condition of rated input and rated output)

3.2. Line/ Load Regulation

Output Rate	Load Condition		Cross Regulation	Remark
	Min. Load	Max. Load		
+24V	0.0A	0.5A	-----	

3.3. Turn - on Delay Time

2S max. @ 100 Vac to 240 Vac input & Full load

3.4. Hold-up Time

10mS min. @ Full load & 115Vac/60Hz input turn off at worst case

30mS min. @ Full load & 230Vac/50Hz input turn off at worst case

3.5. Rise Time

30mS max. @ Rated load

3.6. Fall Time

20mS max. @ Full load

3.7. Output Overshoot / Undershoot

10% max. When the power on or off

3.8. Output Load Transient Response

output voltage within 22.8 -25.2V for load step from 20% to 80%, R/S: 0.5A/uS, frequency: 100Hz duration and 8mS at 80%.

4. Protection Requirements

4.1. Over Current Protection

The output shall hiccup when the over currents applied to the output rail, and shall be self-recovery when the fault condition is removed

4.2. Short Circuit Protection

The input power shall decrease when the output rail short, the power supply shall no damage, and shall be self-recovery when the fault condition is removed

4.3. Over Voltage Protection

The power supply shall protection when the output over voltage

5. Environment Requirements

5.1. Operating Temperature and Relative Humidity

0°C to +40°C

10%RH to 90%RH

5.2. Storage Temperature and Relative Humidity

-20°C to +80°C

5%RH to 95%RH non-condensing @ Sea level shall be low 10,000 feet/低于10,000 英尺

5.3. Vibration

10 to 300Hz sweep at a constant acceleration of 1.0G(Breadth: 3.5mm) for 1Hour for each of the perpendicular axes X, Y, Z

5.4. Drop in

Height: 1m; the product should be fell off on the hardwood with the thickness of 20mm, and the hardwood should be put on the base of the cement or on the ground without flexibility. Apply two times on all surface.

6. Reliability Requirements

6.1. Burn-in

The power supply shall be burn-in for 4 Hours under normal input and 80% rated load at 40°C ± 5°C

6.2. MTBF Qualification

The MTBF shall be at least 10,000hours at 25°C, Full load and nominal input condition

7. EMI/EMS Standards

7.1. EMI Standards

EN 55022:2006, +A2:2010, Class B
EN55024:1998+A1:2001+A2:2003
CISPR 22:2003, Class B
AS/NZS CISPR 22: 2004, Class B

7.2. EMS Standards

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 1kV, line to earth 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

8. Safety Standards

8.1. Dielectric Strength(Hi-pot)

Primary to Secondary: 3000Vac / 10mA Max / 60second(3second for production)

8.2. Leakage Current

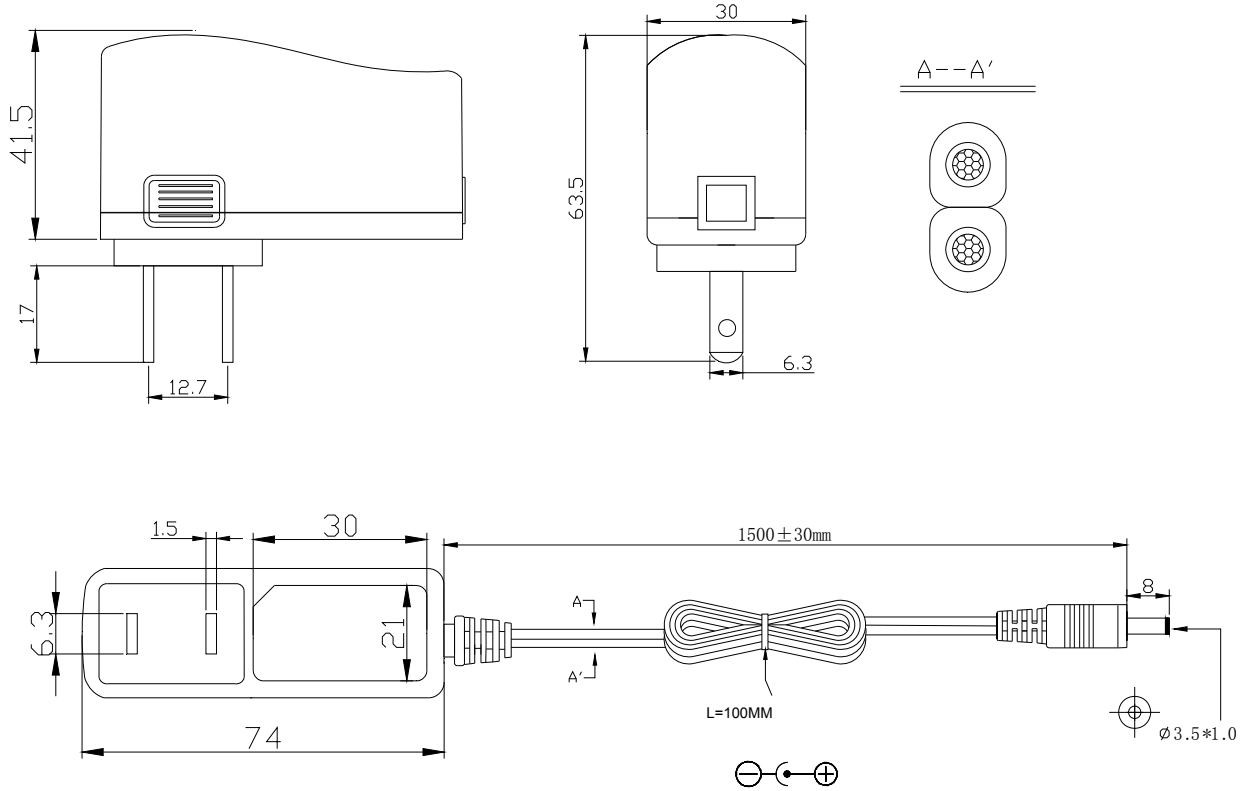
0.25mA max. at 264Vac / 50Hz

8.3. Insulation Resistance

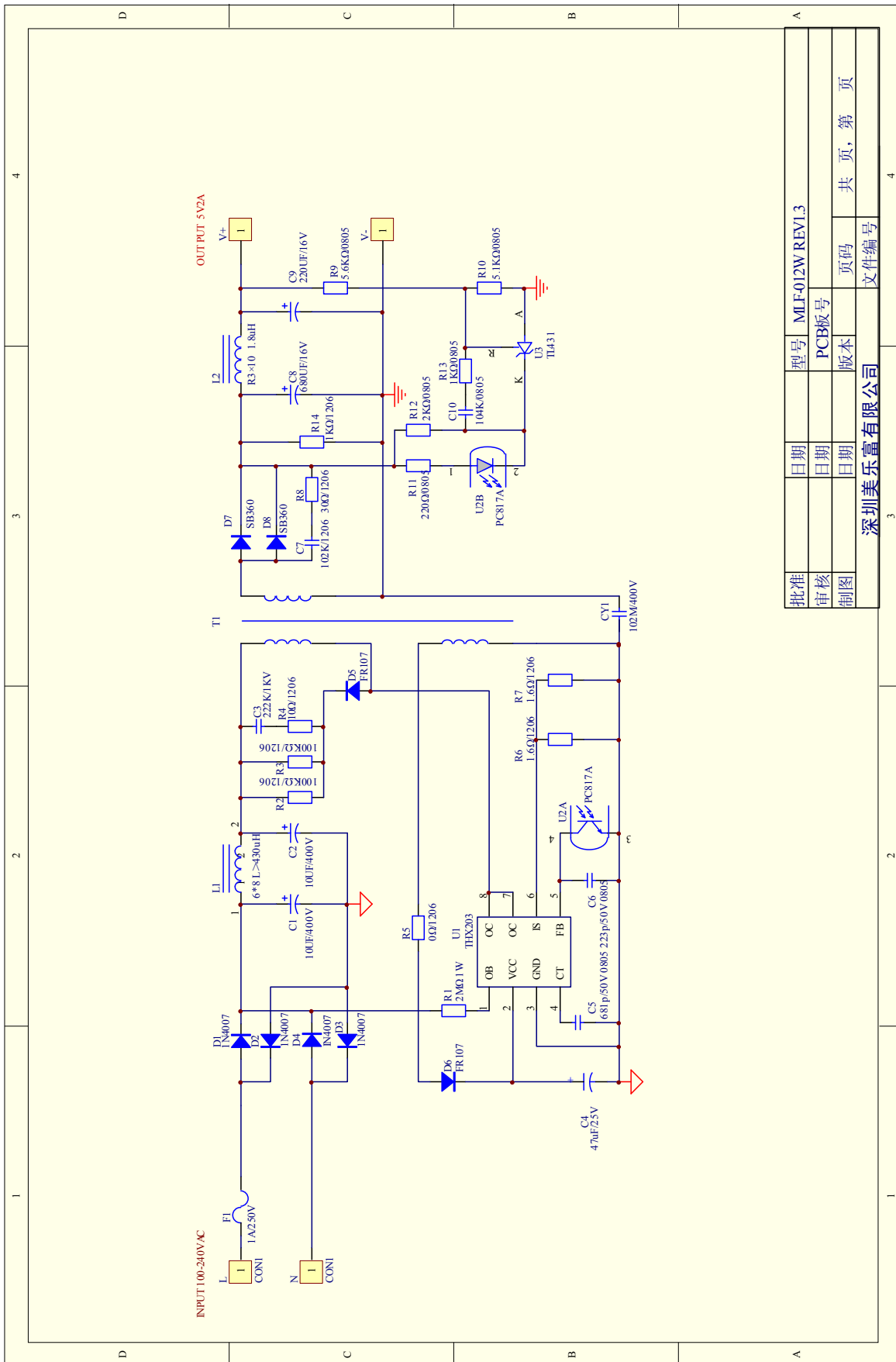
50MΩ min. at primary to secondary add 500Vdc test voltage

8.4. Regulatory Standards

Type	Country	Standard	Statued	
UL	USA/美国	UL 60950-1	已认证	

9. Mach. Outline Drawing

Circuit Schematic Drawing



批准	日期	型号	MLF-012W REV1.3
审核	日期	PCB板号	
制图	日期	版本	
		页码	共 页, 第 页
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