

SPECIFICATION

High Quality Switching Power Adapter

Universal AC Input 90W 19VDC Single Output

P/N: A190047EDL

**** Specification Approval ****

This specification (total 8 pages including cover page) is approved in it's entirety by:

Company Name

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1. 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 part number A190047EDL.

This product is an AC to DC switching power transfer device. It can provide for 19VDC 4.75A max with 90W max DC output with constant voltage source. This specification defines the input, output, performance characteristics, environment, noise and safety requirement for the power adapter

2. Input Electrical Specification

2.1. Input Voltage

Maximum Voltage: 264Vac

Normal Voltage: 100~240Vac

Minimum Voltage: 90Vac

2.2. Input Frequency

Maximum Frequency: 63Hz

Normal Frequency: 50~60Hz

Minimum Frequency: 47Hz

2.3. Input Current

2.5A (Max.) @ 115Vac input with full load.

1.25A (Max.) @ 230Vac input with full load.

2.4. Efficiency

≥ 87% (avg.) at 115V/230V input voltage and 25% , 50% , 75% & 100% of max output current. Meets CEC Level V requirements.

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

≥ 10 mSec., @ normal line, with full load.

2.10. Rise Time

≤ 50 mSec., @ Rated 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 seconds from AC connection.

2.12. Harmonic Standard and Power Factor

The adapter complies with IEC 61000-3-2 Class D harmonic standard while input power is over 75W. The PF shall > 0.95 @100Vac input and > 0.9 @240Vac input, full load.

2.13. No Load Power Consumption.

Less than $< 0.5W$ @230Vac/50Hz

Meet CEC Level V requirements.

3. Output Electrical Specification

3.1. Output Voltage and Current

Output Voltage (Vdc)	Current Min. (A)	Current Max. (A)
+19V	0	4.73A

3.2. Load Regulation

Voltage (Vdc)	Tolerance (%)
+19V	+5/, -5 (18.05V ~ 19.95V)

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 measured with a 20MHz bandwidth oscilloscope.

Output	Ripple/Noise
+19V	2.0% 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 is measured at the end of output cable which is added a 0.1uF ceramic capacitor and a 47uF electrolytic capacitor

3.5. Over Voltage Protection

The adapter shall have over-voltage protection, auto recover mode, the adapter output voltage is not exceed 150% Max. of rated voltage during the feedback open loop test condition.

3.6. Temperature Rise

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

3.7. 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

3.8. Voltage Isolation

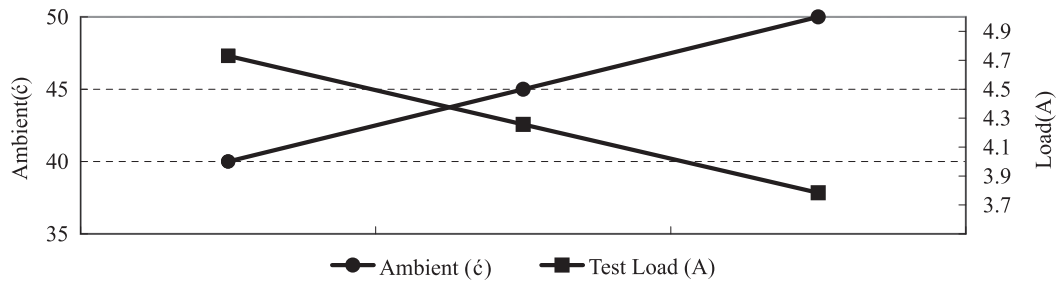
The DC ground will be isolated from the AC neutral and AC line.

4. Environment Specification

4.1 Temperature

- a. Operating : 0 to 50 °C
- b. Storage : -20 to 85 °C

4.2 Derating Curve



4.3 Humidity

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

4.4 Altitude

From sea level to 2,000 Meters (operation) and 5,000 Meters (non operation)

5. Safety Specification

5.1. Hi-Pot Test

2121 Vdc 5mA 3 Sec. between primary and secondary circuit

5.2. Insulation Test

500Vdc, 2 Sec. between primary and secondary circuit

IR should \geq 50 M Ω .

5.3. Leakage Current

\leq 750 uA at 240Vac/50 Hz

5.4. Safety

UL, CUL, TUV/GS, CE, FCC, C-TICK, PSE

5.5. 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)	

5.6. EMI

Comply with Standards
CISPR 22, EN 55022 Class B

6. Mechanical Specification

6.1. Physical Size : 137 mm (L) * 59 mm (W) * 34 mm (H)

6.2. Enclosure material : 94V-1 minimum

6.3. Output Cable (Reference): UL1185*18AWG

6.4. Vibration Test

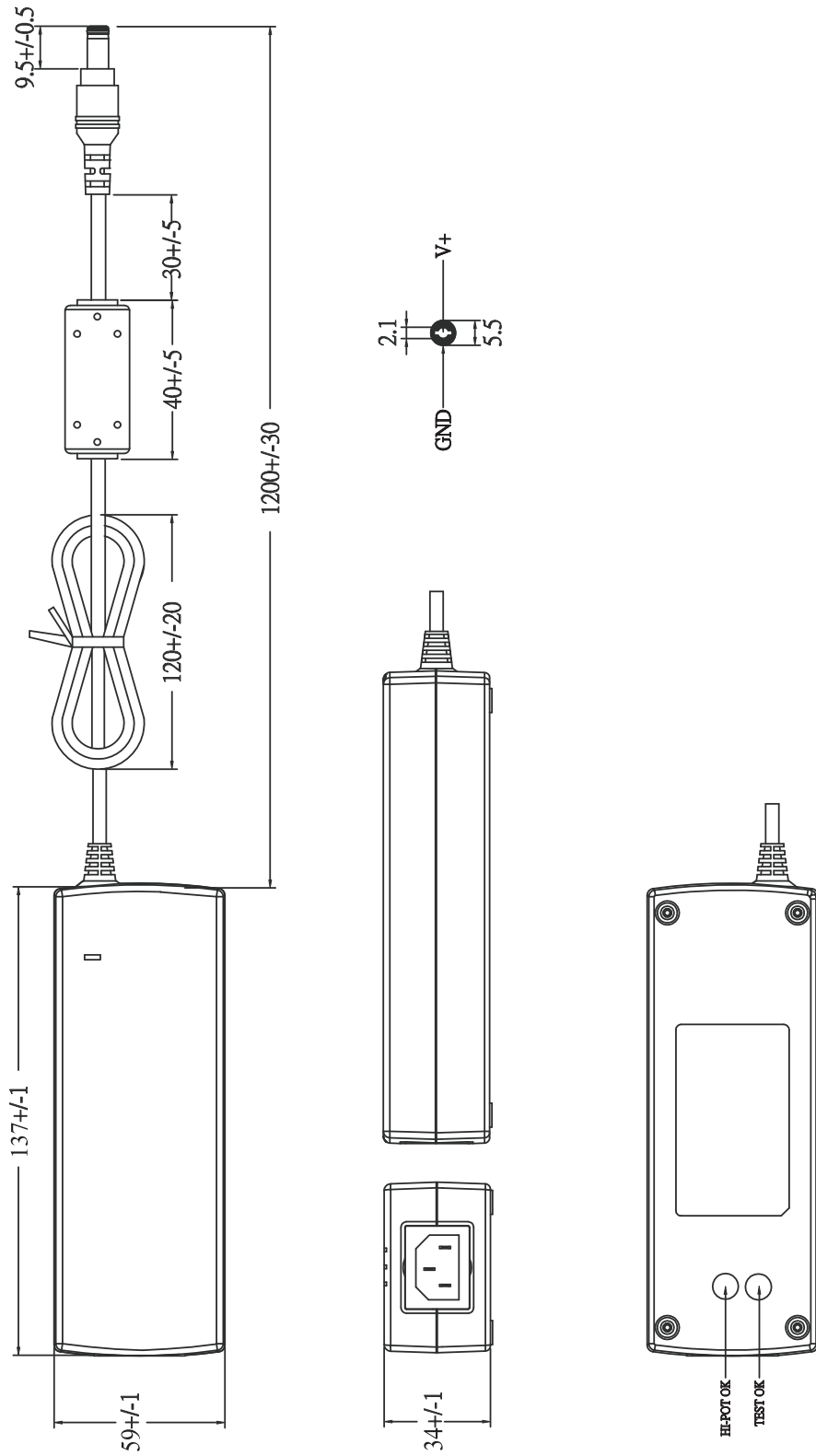
The vibration frequencies are set at 20Hz, with total amplitude of 1.5mm
Along the 3 directions namely X-Y-Z. The each direction should be vibrated
for 60 minutes, after testing no abnormal electrical or mechanical should occur.

6.5. 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.

6.6. Net Weight (Reference) : 450g

7.0. DC Plug



8.0. Label

 Switching Power	
P/N: A190047EDL Input: 100-240VAC 50-60Hz Output: 19V \equiv 4.7A 	
	 
	LPS RoHS 
	入力: AC100-240V 50-60Hz xxxxx 出力: DC19V \equiv 4.7A
CAUTION DO NOT OPEN. RISK OF ELECTRIC SHOCK. S/N: TED-YYWWXXXX WWW.TOPMICRO.COM Made in China	