

SPECIFICATION

High Efficiency Switching Power Module

**120W 19VDC Output
Universal AC Input
Efficiency Level VI**

P/N: A190063EDL

Specification Approval

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

Company Name

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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. Top Micro P/N: A190063EDL. This product is an AC to DC switching power transfer device, and can provide a 19V 6.31A 120W max DC output. This specification defines the input, output, performance characteristics, environment, noise and safety requirements for the power supply.

2.0 Input Requirements

2.1 Input Voltage

Rated voltage 100-240 Vac +/- 10% full range. Nominal line input 110Vac/220Vac

2.2 Input Frequency

47~63 Hz

2.3 Input Current

2.0A Max.@115V, 1.0A Max.@230V input

2.4 Efficiency

>88% typical at nominal line input and full load output. Meets DOE Level VI regulations.

2.5 Configuration

3-prong AC inlet (Line, Neutral, FG)

2.6 Input Fuse

The hot line side of the input shall have a fuse rating (T3.15A/250V).

2.7 Inrush Current

$\leq 60\text{A}$ at 110 Vac at cold start, max. load

$\leq 120\text{A}$ at 220 Vac at cold start, max. load

2.8 Line Regulation

This line regulation is less than 1% of rated output voltage @ full load.

2.9 Hold-up Time

≥ 10 mSec, @ nominal line, full load

2.10 Rise Time

≤ 50 mSec, @ rated AC input, with full load
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 application.

3.0 Output Requirements**3.1 Output Voltage and Current**

Output Voltage (Vdc)	Current Min.(A)	Current Max.(A)
+19V	0	6.3A

3.2 Load Regulation

Voltage (Vdc)	Tolerance (%)
+19V	+/- 5

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 following limits on indicated voltage for 60Hz
or 50Hz ripple, switching frequency ripple and noise and dynamic load variations
are measured with a 20MHz bandwidth oscilloscope.

Output	Ripple/Noise
+19V	1.5% Max. of rated output

Ripple/Noise: 60Hz ripple + switching ripple and noise

Ripple/Noise are measured at the end of output cable with a 0.1uF ceramic
capacitor and 47uF electrolytic capacitor.

3.5 Over Voltage Protection

150% Max. rated voltage

The output voltage shall shutdown and latch-off when OVP occurs.

3.6 Over Current Protection

110%-150%. Unit shall auto-recover.

3.7 Stability

2% Max. at constant load with constant output (after 30 minutes operation).

3.8 Temperature Rise

Less than 45C on top/bottom case at normal AC input & 80% load at DC output at environmental temperature 70C.

3.9 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.

3.10 Voltage Isolation

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

4.0 Environmental

4.1 Temperature

- a. Operating: 0°C to 40°C
- b. Storage: -20°C to 85°C

4.2 Humidity

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

4.3 Altitude

From sea level to 5,000m (operation)

5.0 Safety

5.1 Hi-Pot Test

1800Vac, 3mA 2 seconds between primary and secondary

5.2 Leakage Current

≤ 750uA at 240Vac/50 Hz

5.3 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 FG: ± 2KV (peak)	

5.4 EMI

CISPR 22, EN55022 Class B

6.0 Mechanical Characteristics

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

6.2 Enclosure Material: 94V-1 Min.

6.3 Output Cable: UL1185#16

6.4 Vibration Test

The vibration frequencies are set at 20Hz with total amplitude of 1.5mm along the X-Y-Z axes. Each direction should be tested for 60 minutes.

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 consisting of 13mm thick hardwood, mounted on two layers of plywood each 19mm to 20mm thick, all supported on a concrete or equivalent non-resilient floor.

6.6 Net Weight: 450g

7.0 Mechanical

