

SPECIFICATION FOR
YA50WS3-8U
SMART USB CHARGER
REV. : 1.0

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1.0 SCOPE

This document details the electrical, mechanical and environmental specifications of a 90VAC~264VAC input, one output, voltage 5V, 50Watts switching power supply, model number YA50WS3-8U

2.0 INPUT REQUIREMENTS

2.1 VOLTAGE

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

2.2 FREQUENCY

The range of input frequency is from 47Hz to 63Hz.

2.3 CURRENT

The maximum input current is 1.2A at 115Vac.

2.4 Power waste at the empty load:

$\leq 0.3W$ @Vin100Vac-240Vac

3.0 OUTPUT REQUIREMENTS

3.1 Static load:

Output#	Voltage	Minimum load	Maximum load	Peak load
8 USB	5V	0A	10A	12A

Table 3.1.1

表 3.1.1

3.2 Output voltage:

The output voltage shall be statically regulated for all combinations of load, line and environment including cross regulation as shown.

Output	Voltage	Tolerance
8 USB	5V	±5%

Table 3.1.2

3.3 Ripple and Noise

Output	Voltage	Maximum peak to peak ripple & Noise
8 USB	5V	200mVp-p

Table 3.1.3

Measuring is done by 20MHz bandwidth oscilloscope and terminated each output with a 10uF capacitor and a 0.1uF capacitor.

3.4 Temperature coefficient:

$\pm 0.05\%/^{\circ}C$ typical on all output.

3.5 Turn on delay:

During turn on and turn off, no voltage shall exceed its nominal voltage by more than 10% and no output will change its polarity with respect to its return line. All output shall reach their steady state values within 5 seconds of turn on.

3.6 Hold – up time:

10 msec minimum from loss of nominal AC input at full load condition, 115VAC/60Hz input, output will remain within regulation.

3.7 Efficiency:

The efficiency (watts out / watts in) is higher than 82% typical while measuring at nominal line and rated load.

3.8 Transient Response and Deviation:

The power supply will meet all specifications and maintain output voltage regulation within 4% of steady state with up to a current change of 50% of maximum current in load for the output #1 no output exceed the maximum rating set in table 3.1.2.

4.0 PROTECTION REQUIREMENT:

4.1 Over – voltage protection:

The power supply shall be shutdown when output voltage reaches to its over – voltage protection trigger point 6V Max.

The power supply would be self-recovering when over-voltage protection was removed.

4.2 Short circuit protection:

No damage to the power supply shall be sustained when operating any output under any line condition, into a short circuit condition for an indefinite period of time. The power supply shall be self – recovering when fault condition remove.

4.3 Over-current protection:

The Max point of over-current protection is 1.5 times of full-load current. The power supply would be self-recovering when over-current protection was removed.

5.0 ENVIRONMENTAL CONDITIIONS

5.1 Operating

The power supply shall be capable of operating continuously in any mode without performance deterioration in the following environmental conditions.

5.1.1 Ambient Temperature: 0°C ~40°C

5.1.2 Relative Humidity : 20% ~ 90%

5.1.3 Altitude : Sea level to 10,000 feet.

5.1.4 Vibration : 1.0mm, 10 –25Hz, 15 minutes per cycle for each axis (X, Y, Z)

5.2 Non - operating:

The power supply shall be capable of standing the following environmental conditions extended periods of time, without sustaining electrical or mechanical damage and subsequent operational deficiencies:

5.2.1 Ambient Temperature : -20°C ~ 85°C

5.2.2 Relative Humidity : 20% ~ 90%

5.2.3 Altitude : Sea level to 10,000 feet

5.2.4 Vibration and Shock:

The power supply shall be designed to with stand normal transportation vibration per MIL–STD-810D, method 514 and procedures X, as it is mounted in the chassis assembly and packed for shipping.

6.0 RELIABILITY AND QUALITY CONTROL

6.1 MTBF

When the supply is operation within any of the limits of this specification the MTBF shall be at least 100,000 hours at 25°C (MIL-STD-217F).

6.2 Burn-In

The power supply will be performed a minimum for 4 hours Burn-In at 40°C ±5 °C under full load on all power supplies calculate MTBF.

6.3 Component derating

Semiconductor junction temperatures shall not exceed the manufactures maximum thermal rating.

7.0 MECHANICAL

7.1 INPUT CONNECTION: 3PIN

7.2 OUTPUT CONNECTION: USB

7.3 CASE Physical Dimensions And Appearance:

1, CASE MATERIAL: WHITE plastic

2, Case Size:

3, CASE APPEARANCE:

7.4 Weight:

The weigh of the power supply is about g.

8.0 SAFETY

8.1 Meet A Criterion

8.1.1 EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013

8.1.2 EN 55022:2010

EN 61000-3-2:2006+A1:2009+A2:2009

EN 61000-3-3:2013

EN 55024:2010

8.1.3 FCC Part 15 Subpart B

8.1.4 GB4943.1-2011;GB9254-2008;GB17625.1-2012