

Specification for Approval

Product Name: 50W Constant Voltage LED Driver
Product Model: LSV-050B036 CE UL
Rev. A.1
Sample Date: _____

| CUSTOMER AUTHORIZED SIGNATURE | | |
|---|-------------------|--------------------|
| Tested By | Checked By | Approved By |
| | | |
| (Company seal)Return one copy to MOSO with approved signature and company seal. | | |

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1 Scope

This document defines the electrical, mechanical and environmental specifications of a 50W constant voltage LED driver. The LED driver shall meet the RoHS requirement.

This enclosure of LED driver is:

- With AL Case With Plastic Case Open Frame Others

Note: For all items do not list test temperature in this document, all tests are under 25°C±10°C ambient temperature.

2 Input Characteristics

2.1 Input Voltage and Frequency

| Item | Minimum | Nominal | Maximum |
|-----------------|---------|------------|---------|
| Input Voltage | 90Vac | 100-277Vac | 305Vac |
| Input Frequency | 47Hz | 60Hz/50Hz | 63Hz |

2.2 AC Input Current

Under 25°C±10°C ambient temperature, rated input and output range (reference input voltage –Load curve), maximum AC input current value is 0.8A.

2.3 Inrush Current(Cold Start)

Under 25°C±10°C ambient temperature, 230Vac input, the peak value of the inrush current is less than 75 A.

2.4 Power Factor

2.4.1 Under 25°C±10°C ambient temperature, 230Vac input, 100% load, the typical value of power factor is 0.96; the minimum value is 0.95. (reference Power Factor vs. Load Curve).

2.5 Efficiency

2.5.1 Under 25°C±10°C ambient temperature, 230Vac input, 100% load, the typical value of efficiency is 89% the minimum value of efficiency is 87%. (reference Efficiency vs. Load Curve).

2.6 Input Current THD

2.6.1 Under 25°C±10°C ambient temperature, 230Vac input, 100% load, the maximum value of input current THD is 15%.

3 Output Characteristics

3.1 Output Power

Under full input voltage range(reference Input Voltage vs. Load Curve), the maximum value of output power is 50W.

3.2 Output voltage and Current

| Item(Unit) | Value | Test Condition(Under 25°C±10°C Ambient Temperature) |
|--------------------------|--------|---|
| Maximum Output Power(W) | 50 | full input voltage range |
| Rated Output Voltage(V) | 36 | full input voltage range |
| Load Current Range(A) | 0~1.39 | full input voltage range |
| Output Voltage Precision | ±5% | full input voltage range, full load range |
| No Load Voltage(V) | ≤38 | full input voltage range |

3.3 Output Voltage Ripple

Under 25°C±10°C ambient temperature, 230Vac input, 100% load, the ratio of output voltage ripple peak value and average output voltage is less than 2%.

3.4 Turn-On Delay Time

Under 25°C±10°C ambient temperature, rated input voltage, 100% load, turn-on delay time is less than 3000ms.

3.5 Output Voltage Overshoot

Under 25°C±10°C ambient temperature, 100% load, turn-on at full input voltage range, the ratio of output voltage overshoot and rated output voltage is less than 10%.

3.6 Line Regulation

Under 25°C±10°C ambient temperature, 100% load, change input from 90Vac to 305Vac, line regulation is less than 3%.

3.7 Load Regulation

Under 25°C±10°C ambient temperature, 230Vac input voltage, change load from 50% to 100%, load regulation is less than 3%.

4 Protection

4.1 Short Circuit Protection

The input power shall decrease when the output rail short, the power supply shall not be damaged.

4.2 Over Current Protection

The product will enter hiccup status when 1.6 maximum load current applied to the output, and the product shall be self-recovery when the fault condition is removed.

4.3 Over Voltage Protection

When the output voltage is over 1.1-1.5Rated Load Voltage, the driver shuts off automatically and enters protection status, the driver will work normally after fault condition removed and AC input reapply.

5 Safety and Electromagnetic Compatibility

5.1 Safety Standards

| Safety Category | Country and region | Standards | Accordant |
|-----------------|--------------------|--|-----------|
| CCC | China | GB19510.1 | |
| | | GB19510.14 | |
| CE | Europe | EN61347-1 | √ |
| | | EN61347-2-13 | |
| CB | CB member | IEC61347-1 | √ |
| | | IEC61347-2-13 | |
| UL | America | UL 8750 | √ |
| | | UL 1310 (Class 2 Power Units) | |
| | | UL 1012 | |
| cUL | Canada | CSA C22.2 No.107.1-01 | √ |
| | | CSA C22.2 No.223-M91 (Power Supplies With Extra-Low-Voltage Class 2 Outputs) | |
| KC | Korea | K61347-1 | |
| | | K61347-2-13 | |
| | | K62384 | |
| PSE | Japan | J61347-1 | |
| | | J61347-2-13 | |
| SAA | Australia | IEC 61347-2-13 | |
| | | AS/NZS 61347.1 | |

5.2 Electromagnetic Compatibility Standards

| EMC Certification | Country and region | Standards | Accordant |
|-------------------|--------------------|---------------|-----------|
| CCC | China | GB 17743 | |
| | | GB 17625.1 | |
| FCC | America | FCC part 15 | |
| CE | Europe | EN 55015 | √ |
| | | IEC 61000-3-2 | |
| | | IEC 61000-3-3 | |
| | | IEC 61547 | |
| KC | Korea | K61547 | |
| | | K00015 | |
| PSE | Japan | J55015 | |

6 Details of Safety Specifications

6.1 Dielectric Strength

6.1.1 input to output : 3750Vac, 60s, current is less than 10mA;

6.1.2 input to FG: 1600Vac, 60s, current is less than 10mA;

6.1.3 output to FG: 1600Vac, 60s, current is less than 10mA.

Note: 25°C±10°C ambient temperature, I/P: L,N Line;O/P: Vo+, Vo-.

6.2 Grounding Resistance

Under 25°C±10°C ambient temperature, pass 25A current for 60s, the measured grounding resistance is less than 0.1Ω.

6.3 Leakage Current

Leakage Current is defined as the current flowing through the ground wire. Under 25°C±10°C ambient temperature and 230Vac/50Hz input, the leakage current shall be less than 0.75mA.

6.4 Insulation Resistance

Under 25°C±10°C ambient temperature and less than 70% relative humidity, apply 500V dc voltage to each port of Input to output, input to GND, output to GND and last 60s, the insulation resistance is at least 100MΩ.

6.5 Surge Immunity Test

Under 25°C±10°C ambient temperature, L line to N line is 4000V, L line to FG is 6000V, N line to FG is 6000V.

7 Environmental Specifications

7.1 Operated Temperature And Humidity

Temperature: -40°C to +60°C, please refer to Temperature vs Load Curve; Relative Humidity: 20% to 95%, non-condensing.

7.2 Storage Temperature And Humidity

Temperature: -40°C to +85°C; Relative Humidity: 20% to 95%, non-condensing.

7.3 Vibration

10 to 500HZ Sweep at constant acceleration of 1.0G (depth: 3.5mm) for 1 Hour for each of the perpendicular axes X, Y, Z.

7.4 Degrees of Protection

IP67

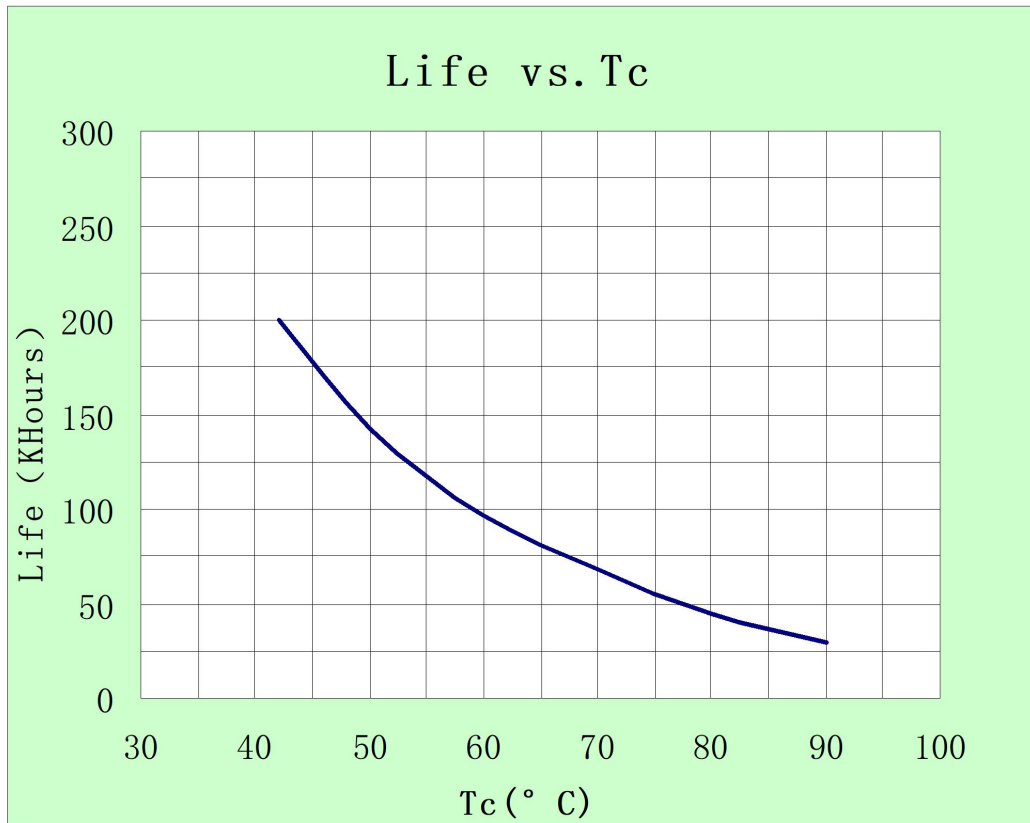
8 Reliability

8.1 Mean Time Between Failure (MTBF) Qualification (According as MIL-HDBK-217F Standards)

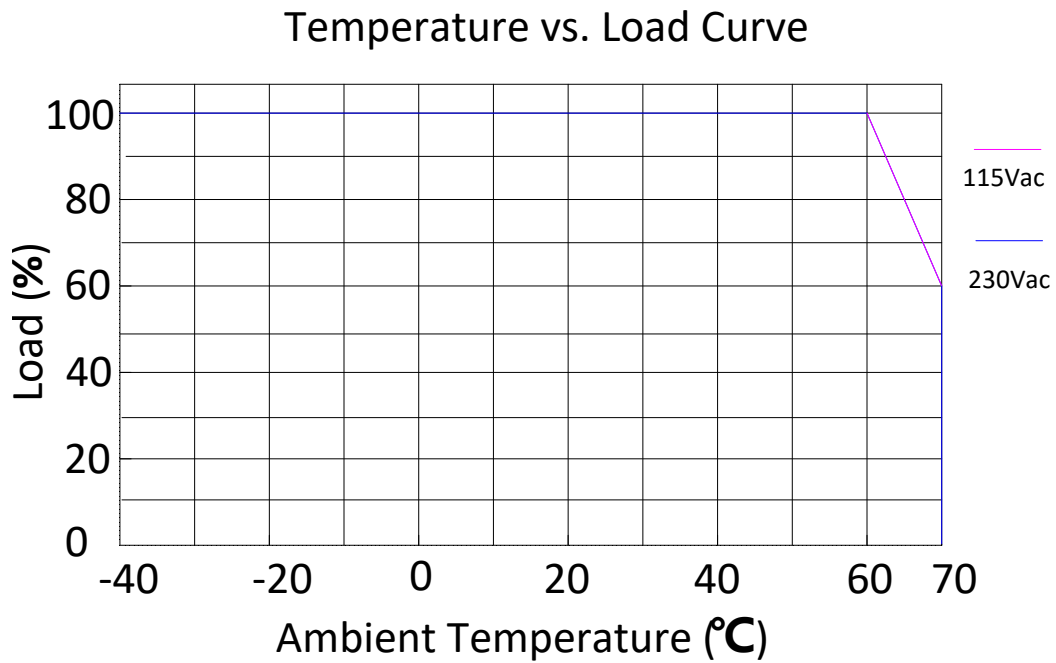
Mean time between failure is at least 200,000 hours under 25°C ambient temperature, 230Vac input, and 80% load.

8.2 Life Time Qualification

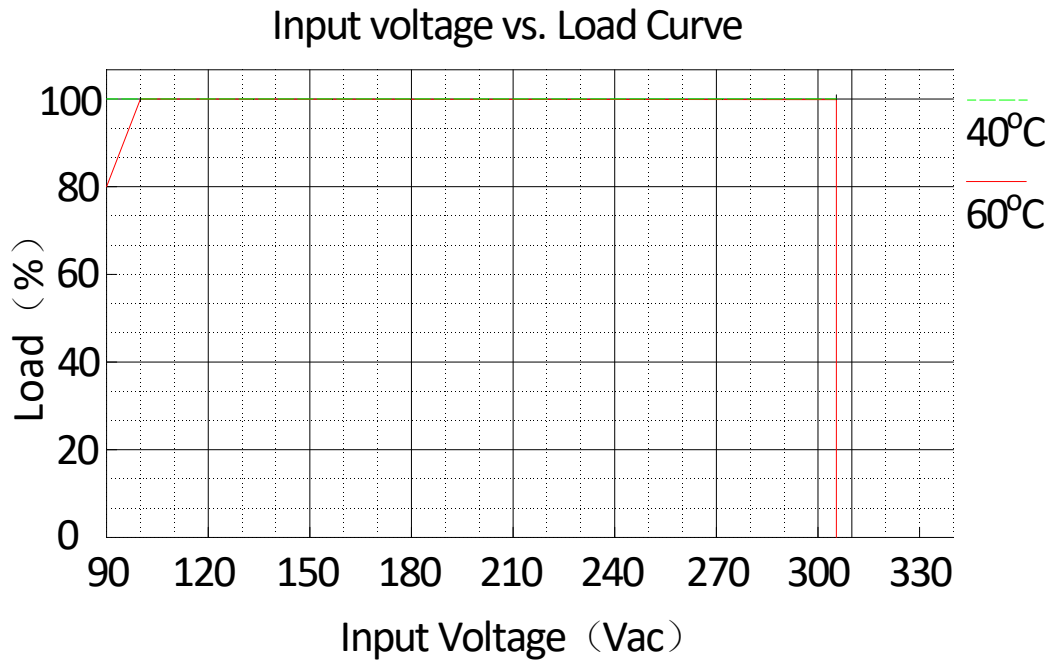
The life time is at least 50,000 hours, under 70°C case temperature, 230Vac input, and 100% load(reference Life vs.TC curve).



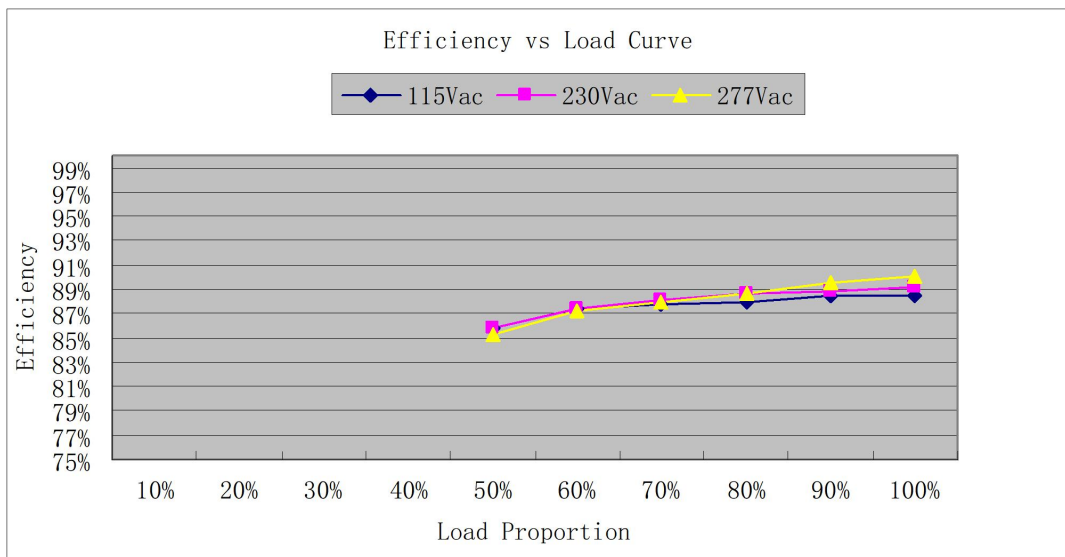
9 Temperature vs. Load Curve



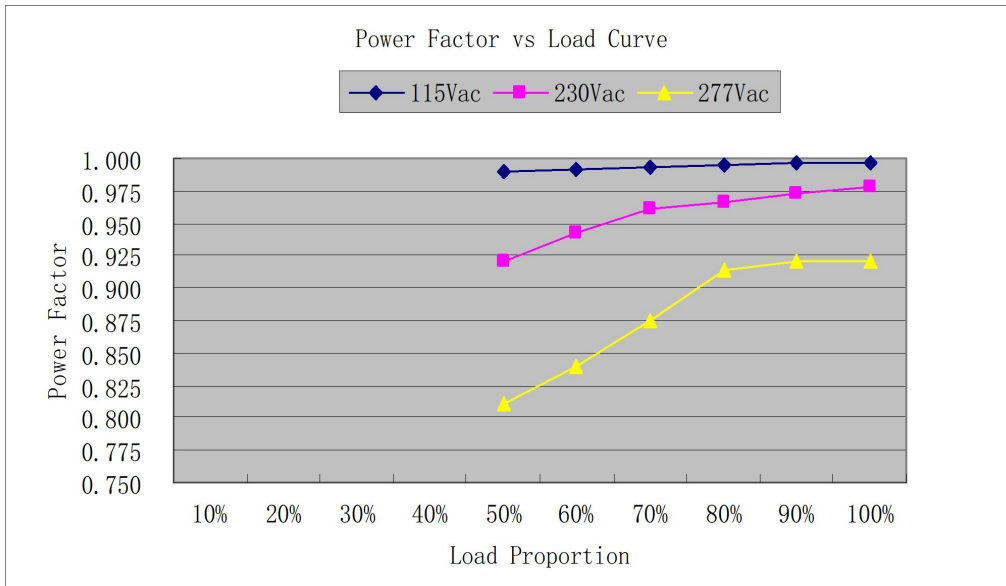
10 Input voltage vs. Load Curve



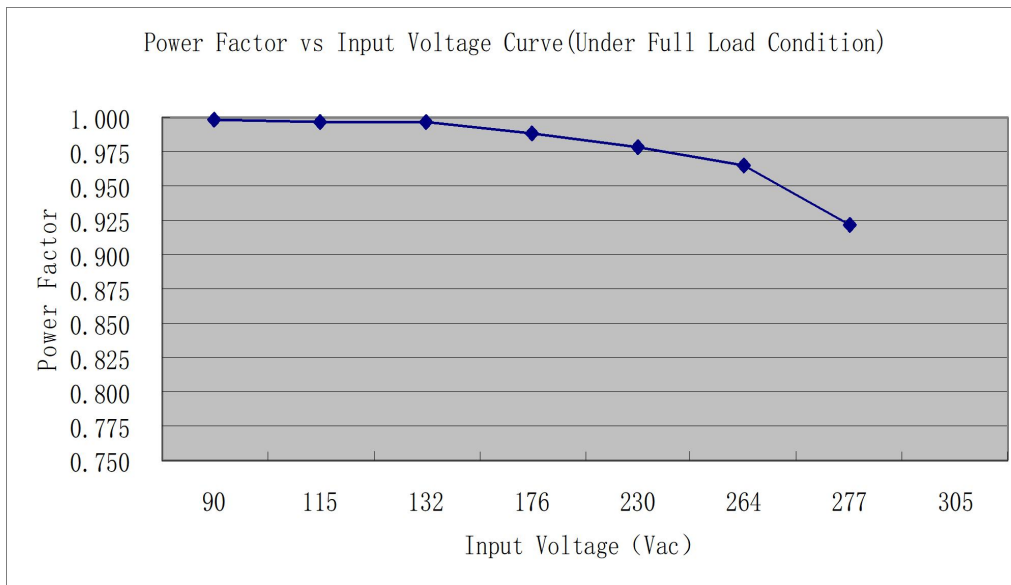
11 Efficiency vs. Load Curve



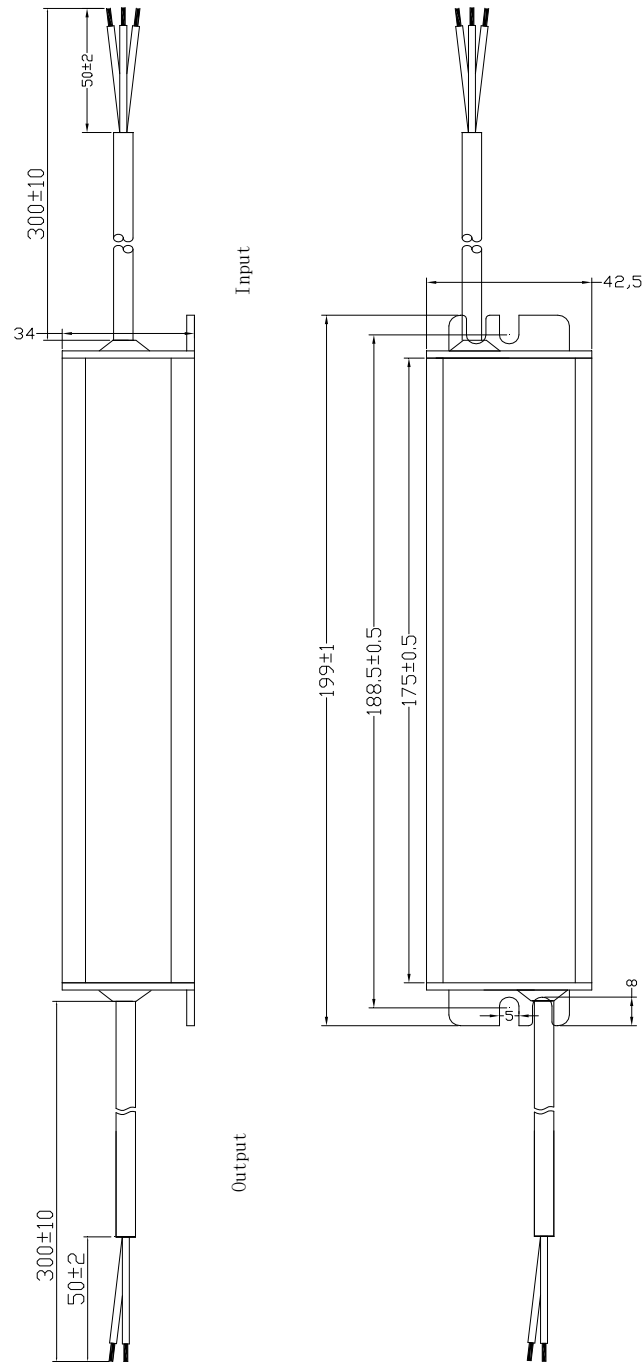
12 Power Factor vs. Load Curve



13 Power Factor vs. Input Voltage Curve



14 Mechanical Outline Drawing



| Wire | Specification | Note |
|-----------|--------------------------------------|--------|
| AC Input | CCC+VDE 3x1.0mm ² L=300mm | for CE |
| | 18AWG 3C L=300mm | For UL |
| DC Output | CCC+VDE 2x1.0mm ² L=300mm | for CE |
| | 18AWG 2C L=300mm | For UL |

15 Label

15.1 Label of CE Marking



Remark:
 Above label is laser engraved

1607 15 0957 A 0001
 Y M D CODE LINE NO.

Bar code for 128 formate
 Date of production need to be updated

15.2 Label of UL Marking



Remark:
 Above label is laser engraved

1607 06 0765 A 0001
 Y M D CODE LINE NO.

Bar code for 128 formate
 Date of production need to be updated

16 Weight

510±50g