

# AC/DC 350W Enclosed Switching Power Supply

## LM350-10Bxx(-C, -Q) Series

# MORNSUN®



- FEATURES
- Selectable AC input range: 90 - 132VAC/180 - 264VAC
- DC input range: 240 - 370VDC
- Ultra low standby power consumption <0.75W @230VAC
- Operating ambient temperature range: - 30℃ to +70℃
- LED indicator for power on
- Output short circuit, over-current, over-voltage, over-temperature protection
- Built-in DC fan
- Operating up to 5000m altitude
- 3 years warranty

CE Report  
EN62368-1

CB  
IEC62368-1

CQC  
GB4943.1

UK  
BS EN62368-1

RoHS



LM350-10Bxx series is one of Mornsun's enclosed AC-DC switching power supply. It features selectable AC input and at the same time accepts DC input voltage, cost-effective, low no load power consumption, high efficiency and high reliability. These power supply offer excellent EMC performance and meet IEC/EN61000-4, CISPR32/EN55032, IEC/UL/EN62368, EN60335, GB4943 standards and they are widely used in areas of industrial, LED, street light control, electricity, security, telecommunications, smart home etc.

### Selection Guide

| Certification  | Part No.*   | Output Power (W) | Nominal Output Voltage and Current (Vo/Io) | Output Voltage Adjustable Range (V) | Efficiency at 230VAC (%) Typ. | Max. Capacitive Load (uF) |
|----------------|-------------|------------------|--------------------------------------------|-------------------------------------|-------------------------------|---------------------------|
| EN/IEC/CQC/BIS | LM350-10B05 | 300              | 5V/60A                                     | 4.5-5.5                             | 83.5                          | 10000                     |
|                | LM350-10B12 | 348              | 12V/29A                                    | 10.2-13.8                           | 85                            | 4000                      |
|                | LM350-10B15 | 348              | 15V/23.2A                                  | 13.5-18                             | 86                            | 3300                      |
|                | LM350-10B24 | 350.4            | 24V/14.6A                                  | 21.6-28.8                           | 87                            | 1500                      |
|                | LM350-10B36 | 349.2            | 36V/9.7A                                   | 32.4-39.6                           | 88                            | 1500                      |
|                | LM350-10B48 | 350.4            | 48V/7.3A                                   | 43.2-52.8                           | 88.5                          | 470                       |

Note:\*1. Use suffix "C" for terminal with protective cover, suffix "Q" for bottom conformal coating.  
2. The product picture is for reference only. For details, please refer to the actual product.

### Input Specifications

| Item                    | Operating Conditions |                                          | Min.        | Typ. | Max. | Unit |
|-------------------------|----------------------|------------------------------------------|-------------|------|------|------|
| Input Voltage Range     | AC input             | Low voltage (switch in position of 115)  | 90          | --   | 132  | VAC  |
|                         |                      | High voltage (switch in position of 230) | 180         | --   | 264  |      |
|                         | DC input             | Switch in position of 230                | 240         | --   | 370  | VDC  |
| Input Voltage Frequency |                      |                                          | 47          | --   | 63   | Hz   |
| Input Current           | 115VAC               |                                          | --          | 6.8  | 8    | A    |
|                         | 230VAC               |                                          | --          | 3.4  | 4    |      |
| Inrush Current          | 115VAC               | Cold start                               | --          | 60   | --   |      |
|                         | 230VAC               |                                          | --          | 60   | --   |      |
| Leakage Current         | 240VAC               |                                          | --          | --   | 0.75 | mA   |
| Hot Plug                |                      |                                          | Unavailable |      |      |      |

### Output Specifications

| Item                    | Operating Conditions |                 | Min. | Typ. | Max. | Unit |
|-------------------------|----------------------|-----------------|------|------|------|------|
| Output Voltage Accuracy | Full load range      | 5V              | --   | ±3   | --   | %    |
|                         |                      | 12V             | --   | ±1.5 | --   |      |
|                         |                      | 15V/24V/36V/48V | --   | ±1   | --   |      |
| Line Regulation         | Rated load           |                 | --   | ±0.5 | --   |      |
| Load Regulation         | 0% - 100% load       | 5V              | --   | ±2   | --   |      |

# MORNSUN®

MORNSUN Guangzhou Science & Technology Co., Ltd.

2024.08.12-A/1

Page 1 of 5

MORNSUN Guangzhou Science & Technology Co., Ltd. reserves the copyright and right of final interpretation

# AC/DC 350W Enclosed Switching Power Supply

## LM350-10Bxx(-C, -Q) Series

**MORNSUN®**

|                                                                                                                                                                                                                           |                                                     |                 |                                    |       |      |      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|-----------------|------------------------------------|-------|------|------|
|                                                                                                                                                                                                                           |                                                     | 12V             | --                                 | ±1    | --   | %    |
|                                                                                                                                                                                                                           |                                                     | 15V/24V/36V/48V | --                                 | ±0.5  | --   |      |
| Output Ripple & Noise*                                                                                                                                                                                                    | 20MHz bandwidth<br>(peak-to-peak<br>value)          | 5V/12V/15V/24V  | --                                 | 150   | --   | mV   |
|                                                                                                                                                                                                                           |                                                     | 36V/48V         | --                                 | 200   | --   |      |
| Temperature Coefficient                                                                                                                                                                                                   |                                                     |                 | --                                 | ±0.02 | --   | %/°C |
| Minimum Load                                                                                                                                                                                                              |                                                     |                 | 0                                  | --    | --   | %    |
| Stand-by Power Consumption                                                                                                                                                                                                | 230VAC, 25°C                                        |                 | --                                 | --    | 0.75 | W    |
| Hold-up Time                                                                                                                                                                                                              | 115VAC                                              |                 | --                                 | 12    | --   | ms   |
|                                                                                                                                                                                                                           | 230VAC                                              |                 | --                                 | 16    | --   |      |
| Short Circuit Protection                                                                                                                                                                                                  | Recovery time <8s after the short circuit disappear |                 | Hiccup, continuous, self-recover   |       |      |      |
| Over-current Protection                                                                                                                                                                                                   |                                                     |                 | 110% - 180% Io, self-recover       |       |      |      |
| Over-voltage Protection                                                                                                                                                                                                   | 5V                                                  |                 | 5.75V-6.75V (Hiccup, self-recover) |       |      |      |
|                                                                                                                                                                                                                           | 12V                                                 |                 | 13.8V-16.2V (Hiccup, self-recover) |       |      |      |
|                                                                                                                                                                                                                           | 15V                                                 |                 | 18V-21V (Hiccup, self-recover)     |       |      |      |
|                                                                                                                                                                                                                           | 24V                                                 |                 | 28.8V-33.6V (Hiccup, self-recover) |       |      |      |
|                                                                                                                                                                                                                           | 36V                                                 |                 | 41.4V-46.8V (Hiccup, self-recover) |       |      |      |
|                                                                                                                                                                                                                           | 48V                                                 |                 | 55.2V-59.5V (Hiccup, self-recover) |       |      |      |
| Over-temperature Protection                                                                                                                                                                                               |                                                     |                 | Hiccup, self-recover               |       |      |      |
| Note: *The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor, details please refer to Enclosed Switching Power Supply Application Notes. |                                                     |                 |                                    |       |      |      |

### General Specifications

| Item                  |                                | Operating Conditions                                   |              | Min.                                                                                                                 | Typ. | Max. | Unit   |
|-----------------------|--------------------------------|--------------------------------------------------------|--------------|----------------------------------------------------------------------------------------------------------------------|------|------|--------|
| Isolation             | Input - ⊕                      | Electric strength test for 1min., leakage current <3mA |              | 2000                                                                                                                 | --   | --   | VAC    |
|                       | Input - output                 | Electric strength test for 1min., leakage current <5mA |              | 3000                                                                                                                 | --   | --   |        |
|                       | Output - ⊕                     | Electric strength test for 1min., leakage current <3mA |              | 500                                                                                                                  | --   | --   |        |
| Insulation Resistance | Input - ⊕                      | Ambient temperature: 25 ± 5℃                           |              | 100                                                                                                                  | --   | --   | MΩ     |
|                       | Input - output                 | Relative humidity: < 95%RH, no condensation            |              | 100                                                                                                                  | --   | --   |        |
|                       | Output - ⊕                     | Test voltage: 500VDC                                   |              | 100                                                                                                                  | --   | --   |        |
| Operating Temperature |                                |                                                        |              | -30                                                                                                                  | --   | +70  | ℃      |
| Storage Temperature   |                                |                                                        |              | -40                                                                                                                  | --   | +85  |        |
| Fan On/Off Control    | Fan On, temperature for Rth3   |                                                        | 50           | --                                                                                                                   | --   |      |        |
|                       | Fan Off, temperature for Rth3  |                                                        | --           | --                                                                                                                   | 40   |      |        |
| Operating Humidity    |                                | Non-condensing                                         |              | 20                                                                                                                   | --   | 90   | %RH    |
| Storage Humidity      |                                |                                                        |              | 10                                                                                                                   | --   | 95   |        |
| Switching Frequency   |                                |                                                        |              | --                                                                                                                   | 65   | --   | kHz    |
| Power Derating        | Operating temperature derating |                                                        | +50℃ to +70℃ | 2                                                                                                                    | --   | --   | %/℃    |
|                       | Input voltage derating         | 90VAC - 100VAC                                         |              | 2                                                                                                                    | --   | --   | % /VAC |
|                       |                                | 100VAC -132VAC                                         |              | 0                                                                                                                    | --   | --   |        |
|                       |                                | 180VAC - 264VAC                                        |              | 0                                                                                                                    | --   | --   |        |
|                       |                                | 240VDC - 370VDC                                        |              | 0                                                                                                                    | --   | --   | %/VDC  |
| Safety Standard       |                                |                                                        |              | IEC/ BS EN/EN62368-1, GB4943.1, IS 13252 (Part1) safety approved;<br>Design refer to UL62368-1, EN60950-1, EN60335-1 |      |      |        |
| Safety Class          |                                |                                                        |              | CLASS I                                                                                                              |      |      |        |
| MTBF                  |                                | MIL-HDBK-217F@25℃                                      |              | ≥300,000 h                                                                                                           |      |      |        |

**MORNSUN®**

MORNSUN Guangzhou Science & Technology Co., Ltd.

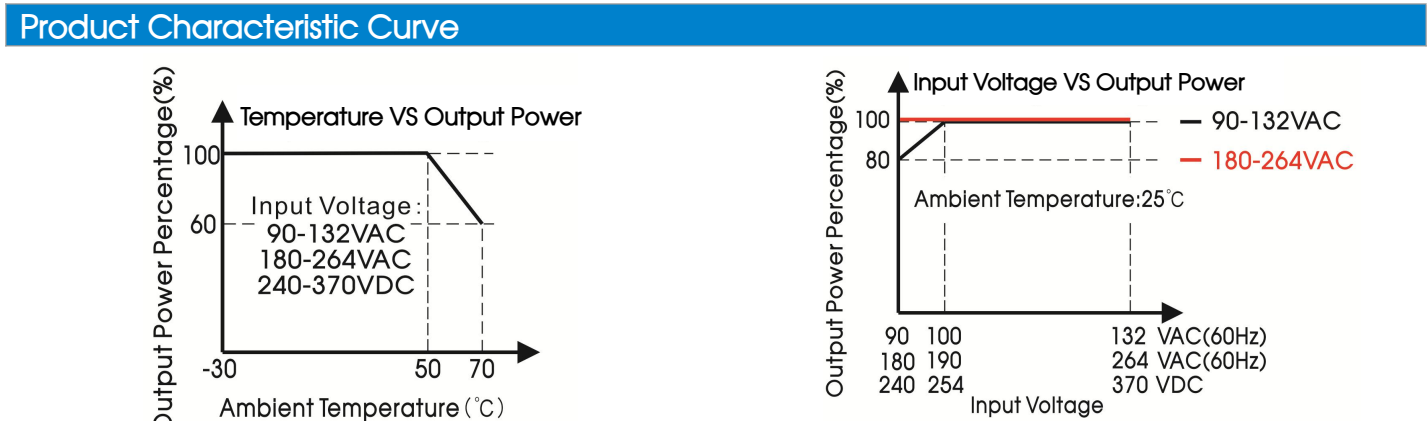
2024.08.12-A/1

Page 2 of 5

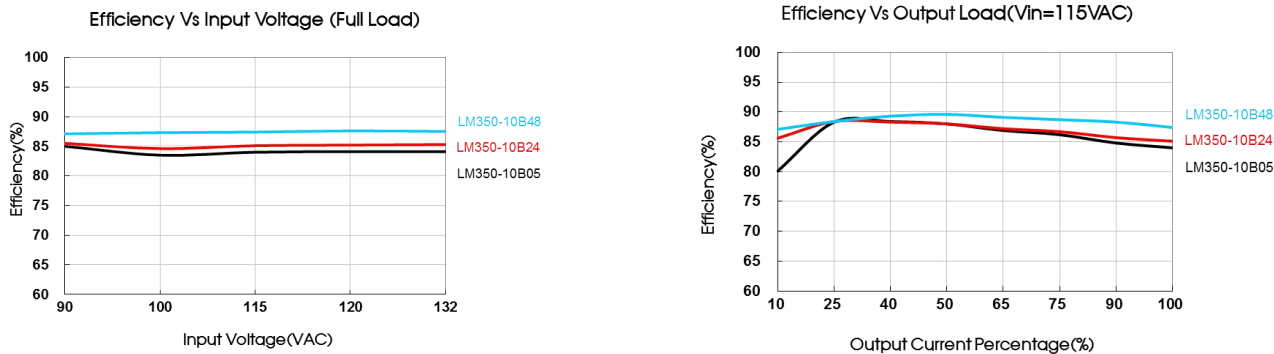
MORNSUN Guangzhou Science & Technology Co., Ltd. reserves the copyright and right of final interpretation

| Mechanical Specifications |                                 |
|---------------------------|---------------------------------|
| Case Material             | Metal (AL1100, SGCC)            |
| Dimensions                | 215.00 mm x 115.00 mm x 30.00mm |
| Weight                    | 700g (Typ.)                     |
| Cooling Method            | Forced air cooling              |

| Electromagnetic Compatibility (EMC)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |                  |                                   |                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------------|-----------------------------------|------------------|
| Emissions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | CE    | CISPR32/EN55032  | CLASS A                           |                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | RE    | CISPR32/EN55032  | CLASS A                           |                  |
| Immunity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ESD   | IEC/EN 61000-4-2 | Contact ±6KV/Air ±8KV             | perf. Criteria A |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | RS    | IEC/EN 61000-4-3 | 10V/m                             | perf. Criteria A |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | EFT   | IEC/EN 61000-4-4 | ±2KV                              | perf. Criteria A |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Surge | IEC/EN 61000-4-5 | line to line ±2KV/line to PE ±4KV | perf. Criteria A |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | CS    | IEC/EN61000-4-6  | 10 Vr.m.s                         | perf. Criteria A |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | DIP   | IEC/EN61000-4-11 | 0%,70%                            | perf. Criteria B |
| Remark: 1. One magnetic bead should be coupled with the output load line during CE/RE testing.<br>2. Matching our filter FC-L06WX series, can meet the higher level of EMC.<br>3. The power supply does not meet the requirements of harmonic current stipulated in EN61000-3-2; This power supply is not suitable for the following situations.<br>1) The terminal equipment is used in the European Union;<br>2) The terminal equipment is connected to public mains supply with 220VAC or greater rated nominal voltage that mandatory to meet the requirements of EN61000-3-2;<br>3) The power supply is installed in terminal equipment with average or continuous input power greater than 75W;<br>4) The power supply belong to a part of lighting system;<br>In addition, the power supply can be used in the following terminals which do not need to meet EN61000-3-2;<br>(1) Professional equipment with total fixed input power greater than 1000W;<br>(2) symmetrical controlled heating element with rated power less than or equal to 200W.<br>4. If no harmonic current is required or customers can solve harmonic current problems by themselves, this product can be used. |       |                  |                                   |                  |



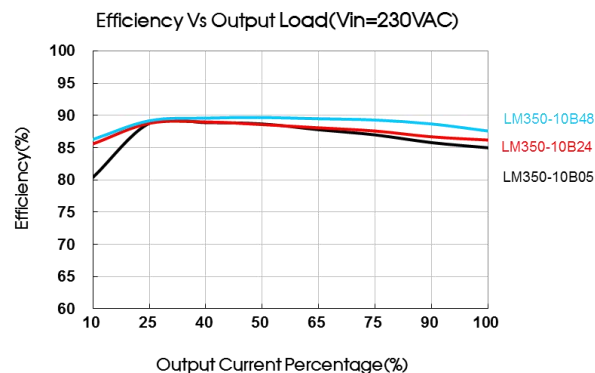
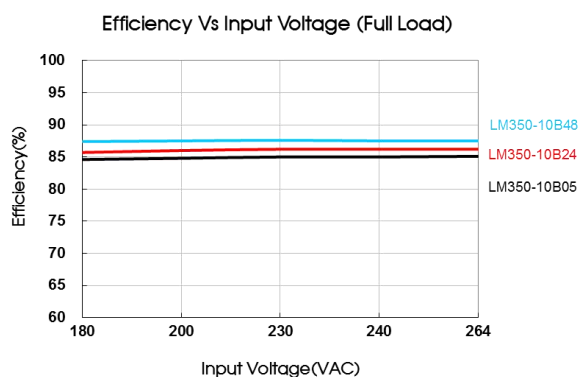
Note: This product is suitable for applications using natural air cooling; for applications in closed environment please consult Mornsun FAE.



# AC/DC 350W Enclosed Switching Power Supply

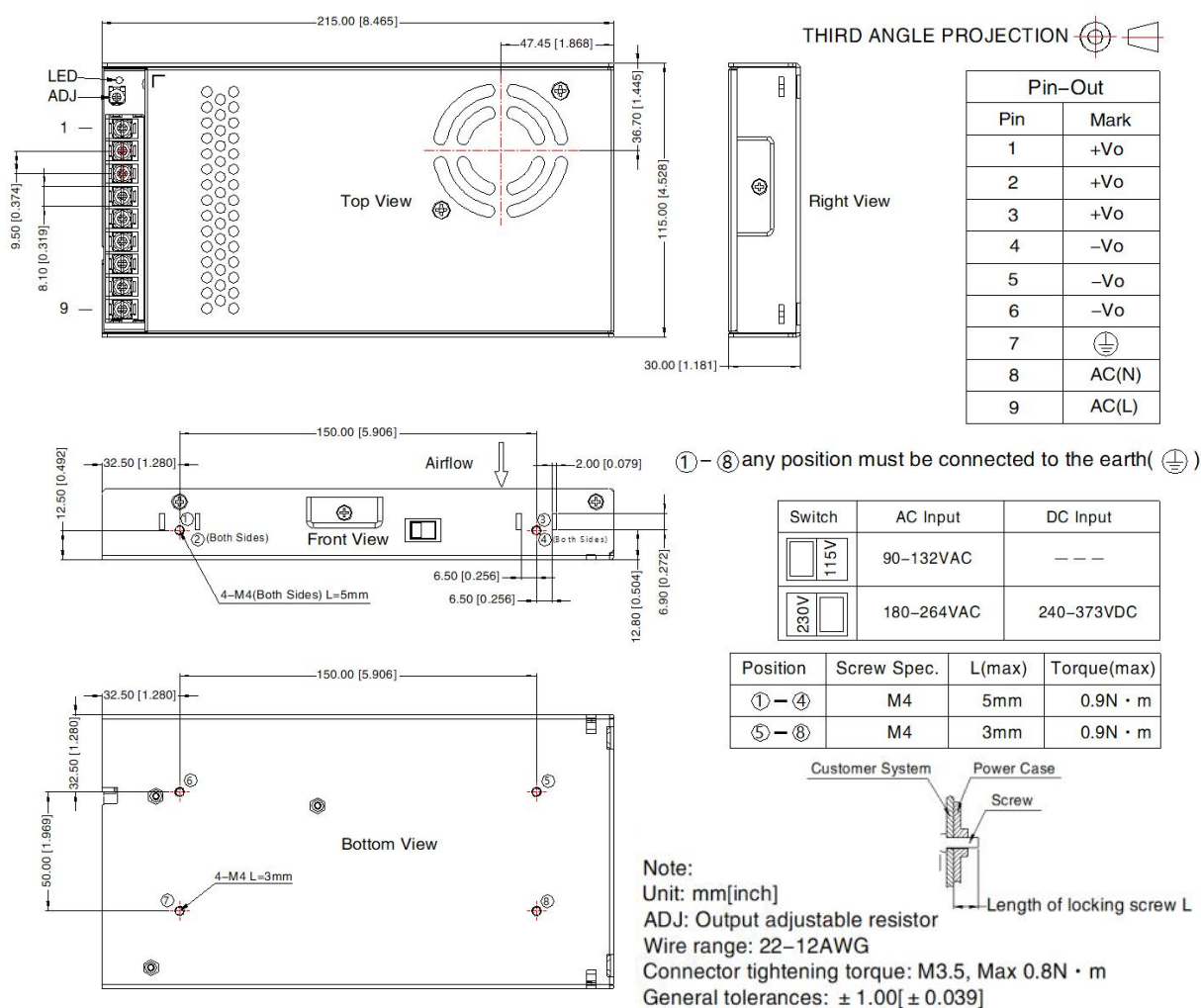
## LM350-10Bxx(-C, -Q) Series

**MORNSUN®**

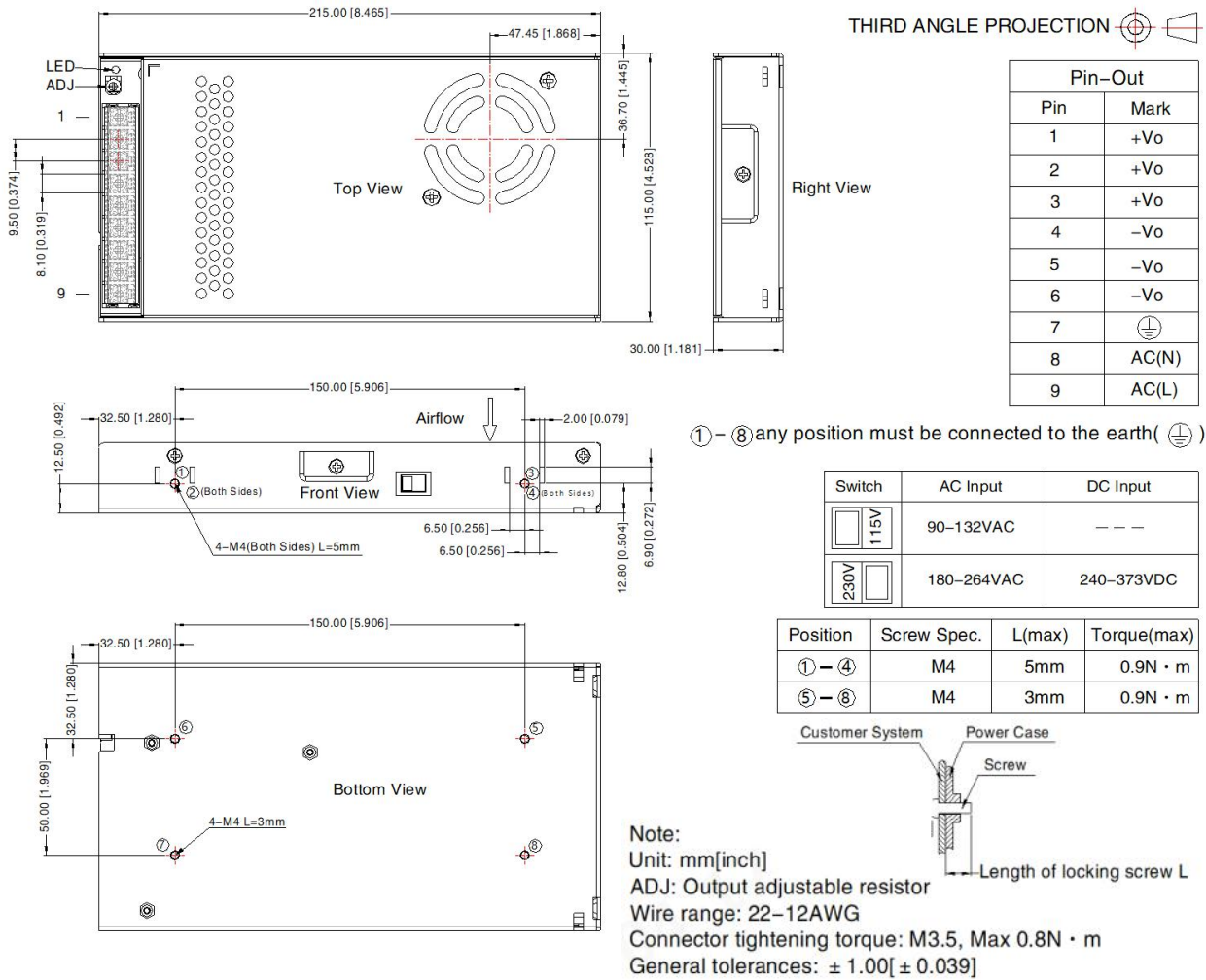


## Dimensions and Recommended Layout

### LM350-10Bxx, LM350-10Bxx-Q Series



### LM350-10Bxx-C Series



#### Note:

- For additional information on Product Packaging please refer to [www.mornsun-power.com](http://www.mornsun-power.com). Packaging bag number: 58220115;
- Unless otherwise specified, parameters in this datasheet were measured under the conditions of  $T_a=25^{\circ}\text{C}$ , humidity<75%RH with nominal input voltage and rated output load;
- The ambient temperature derating of  $5^{\circ}\text{C}/1000\text{m}$  is needed for operating altitude greater than 2000m;
- All index testing methods in this datasheet are based on our company corporate standards;
- In order to improve the efficiency at high input voltage, there will be audible noise generated, but it does not affect product performance and reliability;
- We can provide product customization service, please contact our technicians directly for specific information;
- Products are related to laws and regulations: see "Features" and "EMC";
- The out case needs to be connected to the earth(⊕) of system when the terminal equipment in operating;
- The output voltage can be adjusted by the ADJ, clockwise to decrease;
- Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units;
- The power supply is considered a component which will be installed into a final equipment. All EMC tests should be confirmed with the final equipment. Please consult our FAE for EMC test operation instructions.

## Mornsun Guangzhou Science & Technology Co., Ltd.

Address: No. 5, Kehui St. 1, Kehui Development Center, Science Ave., Guangzhou Science City, Huangpu District, Guangzhou, P. R. China

Tel: 86-20-38601850

Fax: 86-20-38601272

E-mail: [info@mornsun.cn](mailto:info@mornsun.cn)

[www.mornsun-power.com](http://www.mornsun-power.com)