## DESCRIPTIONS

50W,AC-DC Converter



RoHS

UL62368-1 EN62368-1 EN61558-1 EN60335-1 BS EN62368-1 IEC62368-1 IEC61558-1

## FEATURES

- Universal 85 - 264VAC or 120 - 370VDC input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -30℃ to +70℃
- Low standby power consumption, high efficiency
- High I/O isolation test voltage up to 4000VAC
- Low ripple & noise
- Output short circuit, over-current, over-voltage protection
- OVC III (designed to meet EN62477)
- Operating altitude up to 5000m

## APPLICATIONS

- Industrial
- LED
- Street light control
- Electricity
- Security
- Telecommunications

## Selection Guide

| Certification | Part No* | Output Power (W) | Nominal Output Voltage and Current (Vo/Io) | Output Voltage Adjustable Range(V) | Efficiency at 230VAC (%) Typ. | Capacitive Load (uF) Max. |
|---|---|---|---|---|---|---|
| UL/EN/BS EN/IEC | AE50-2B-05 | 50 | 5V/10A | 4.5-5.5 | 86 | 8500 |
| | AE50-2B-12 | 50.4 | 12V/4.2A | 10.2-13.8 | 87 | 2000 |
| | AE50-2B-15 | 51 | 15V/3.4A | 13.5-18 | 88 | 1500 |
| | AE50-2B-24 | 52.8 | 24V/2.2A | 21.6-28.8 | 89 | 1000 |
| | AE50-2B-36 | 52.2 | 36V/1.45A | 32.4-39.6 | 89 | 800 |
| | AE50-2B-48 | 52.8 | 48V/1.1A | 43.2-52.8 | 90 | 680 |

Note: *1. Use suffix "Q" for conformal coating.

2.If the terminal cover is required, please order "CPJ-032" for self-installation.

3.The product picture is for reference only. For details, please refer to the actual product.

## Specifications

| Product Specifications | Item | | Operating Conditions | | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|---|
| Input Specifications | Input Voltage Range | | AC input | | 85 | -- | 264 | VAC |
| | | | DC input | | 120 | -- | 370 | VDC |
| | Input Voltage Frequency | | | | 47 | -- | 63 | Hz |
| | Input Current | | 115VAC | | -- | -- | 1.2 | A |
| | | | 230VAC | | -- | -- | 0.8 | |
| | Inrush Current | | 115VAC | Cold start | -- | 30 | -- | |
| | | | 230VAC | | -- | 50 | -- | |
| | Leakage Current | | 240VAC | | < 0.75mA | | | |
| | Hot Plug | | | | Unavailable | | | |
| Output Specifications | Output Voltage Accuracy | | Full load range | 5V | -- | ±2 | -- | % |
| | | | | 12V/15V/24V/36V/48V | -- | ±1 | -- | |
| | Line Regulation | | Full load | | -- | ±0.5 | -- | |
| | Load Regulation | | 0% - 100% load | 5V | -- | ±1 | -- | |
| | | | | 12V/15V/24V/36V/48V | -- | ±0.5 | -- | |
| | Ripple & Noise* | | 20MHz bandwidth (peak-to-peak value) | 5V | -- | 80 | -- | mV |
| | | | | 12V/15V | -- | 120 | -- | |
| | | | | 24V | -- | 150 | -- | |
| | | | | 36V/48V | -- | 200 | -- | |
| | Temperature Coefficient | | | | -- | ±0.03 | -- | %/℃ |
| | Minimum Load | | | | 0 | -- | -- | % |
| | Stand-by Power Consumption | | 230VAC | | -- | -- | 0.3 | W |
| | Hold-up Time | | 115VAC | | 8 | -- | -- | ms |
| | | | 230VAC | | 30 | -- | -- | |
| | Short Circuit Protection | | Recovery time <5s after the short circuit disappear. | | Hiccup, continuous, self-recover | | | |
| | Over-current Protection | | | | 110%-200% Io, self-recover | | | |
| | Over-voltage Protection | | 5V | | ≤6.3VDC (Output voltage clamp or hiccup) | | | |
| | | | 12V | | ≤16.2VDC (Output voltage clamp or hiccup) | | | |
| | | | 15V | | ≤21.75VDC (Output voltage clamp or hiccup) | | | |
| | | | 24V | | ≤33.6VDC (Output voltage clamp or hiccup) | | | |
| | | | 36V | | ≤48.6VDC (Output voltage clamp or hiccup) | | | |
| | | | 48V | | ≤60.0VDC (Output voltage clamp or hiccup) | | | |
| General Specifications | Isolation | Input - ⏚ | Electric strength test for 1min., leakage current <10mA | | 2000 | -- | -- | VAC |
| | | Input - output | | | 4000 | -- | -- | |
| | | Output - ⏚ | | | 1250 | -- | -- | |

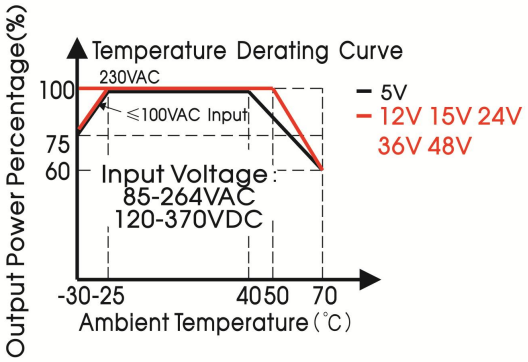
| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Insulation Resistance | Input - ⏚ | At 500VDC | | | 100 | -- | -- | MΩ |
| | | Input - output | | | | 100 | -- | -- | |
| | | Output - ⏚ | | | | 100 | -- | -- | |
| | Operating Temperature | | | | | -30 | -- | +70 | ℃ |
| | Storage Temperature | | | | | -40 | -- | +85 | |
| | Storage Humidity | | Non-condensing | | | -- | -- | 95 | %RH |
| | Operating Humidity | | Non-condensing | | | 20 | -- | 90 | |
| | Switching Frequency | | | | | -- | 65 | -- | KHz |
| | Power Derating | | -30℃ to -25℃ | | 85-100VAC | 5 | -- | -- | %/℃ |
| | | | 5V | +40℃ to +70℃ | 85-165VAC | 1.33 | -- | -- | |
| | | | | +50℃ to +70℃ | 165-264VAC | 2 | -- | -- | |
| | | | Other output | | +50 to +70℃ | 2 | -- | -- | |
| | | | 85VAC - 100VAC | | | 1.33 | -- | -- | %/VAC |
| | Safety Class | | | | | CLASS I | | | |
| | MTBF | | MIL-HDBK-217F@25℃ | | | ≥300,000 h | | | |
| Mechanical Specifications | Case Material | | Metal (AL1100, SGCC) | | | | | | |
| | Dimension | | 99.00 x 82.00 x 30.00 mm | | | | | | |
| | Weight | | 180g (Typ.) | | | | | | |
| | Cooling Method | | Free air convection | | | | | | |

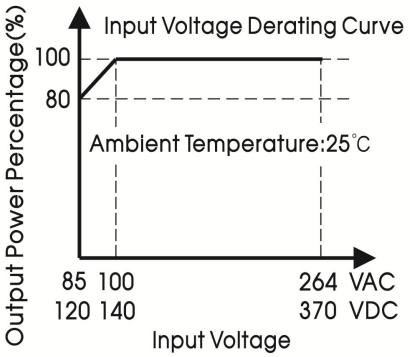
Note: *The "Tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor

## Electromagnetic Compatibility (EMC)

| | | | | |
|---|---|---|---|---|
| Electromagnetic Compatibility (EMC) | Emissions (EMI) | CE | CISPR32/EN55032 CLASS B | |
| | | RE | CISPR32/EN55032 CLASS B | |
| | | Harmonic current | IEC/EN61000-3-2 CLASS A | |
| | Immunity (EMS) | ESD | IEC/EN61000-4-2 Contact ±6KV/Air ±8KV | perf. Criteria A |
| | | RS | IEC/EN61000-4-3 10V/m | perf. Criteria A |
| | | EFT | IEC/EN61000-4-4 ±2KV | perf. Criteria A |
| | | Surge | IEC/EN61000-4-5 line to line ±2KV/line to PE ±4KV | perf. Criteria A |
| | | CS | IEC/EN61000-4-6 10 Vr.m.s | perf. Criteria A |
| | | MS | IEC/EN61000-4-8 30A/m | perf. Criteria A |
| | | Voltage dip, short interruption and voltage variation | IEC/EN61000-4-11 0%, 70% | perf. Criteria B |

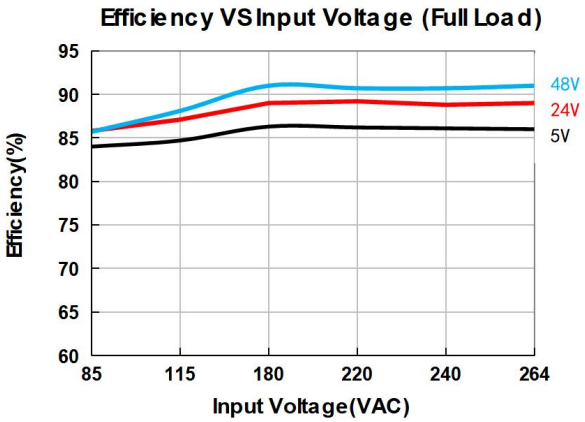
## Characteristic Curve

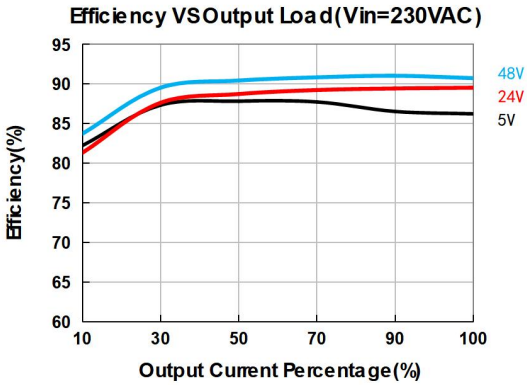


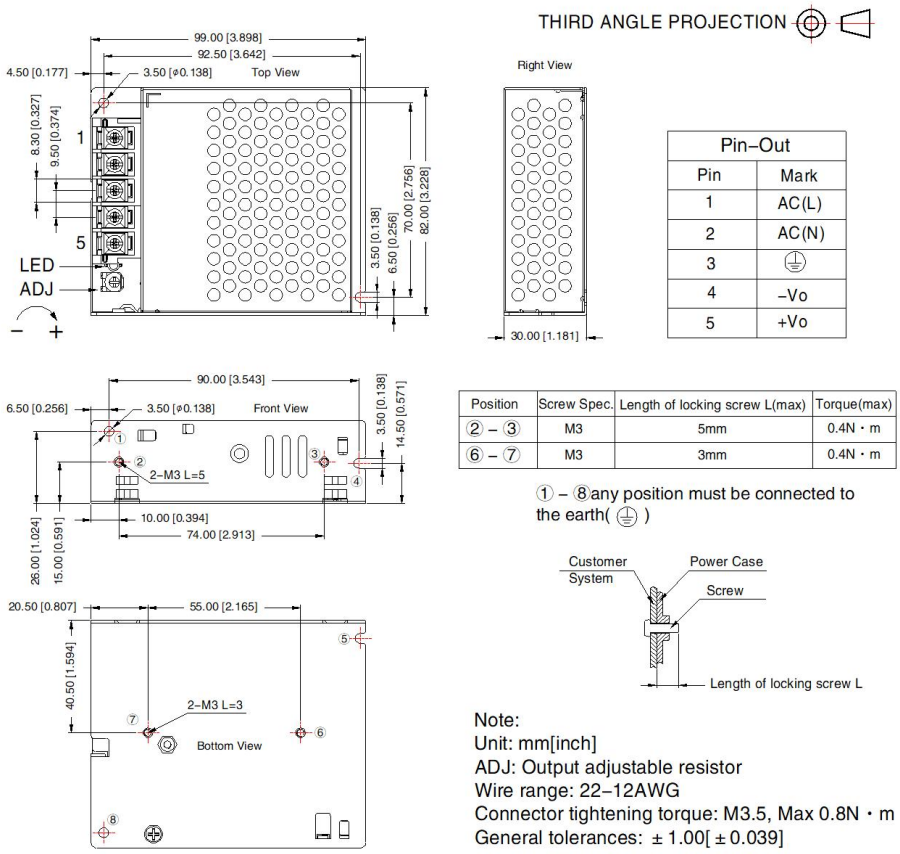

Note: 1. With an AC input voltage between 85 -100VAC and a DC input between 120-140VDC the output power must be derated as per the temperature derating curves;

2. This product is suitable for applications using natural air cooling.



## Dimensions and Recommended




| Pin–Out | |
|---|---|
| Pin | Mark |
| 1 | AC(L) |
| 2 | AC(N) |
| 3 | ⏚ |
| 4 | –Vo |
| 5 | +Vo |

| Position | Screw Spec. | Length of locking screw L(max) | Torque(max) |
|---|---|---|---|
| ② – ③ | M3 | 5mm | 0.4N・m |
| ⑥ – ⑦ | M3 | 3mm | 0.4N・m |

① – ⑧ any position must be connected to the earth( ⏚ )

Note:
Unit: mm[inch]
ADJ: Output adjustable resistor
Wire range: 22–12AWG
Connector tightening torque: M3.5, Max 0.8N・m
General tolerances: ± 1.00[ ± 0.039]

Note:

1. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, humidity <75% RH with nominal input voltage and rated output load;
2. The room temperature derating of 5℃/1000m is needed for operating altitude greater than 2000m;
3. All index testing methods in this datasheet are based on our company corporate standards;
4. 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;
5. We can provide product customization service, please contact our technicians directly for specific information;
6. Products are related to laws and regulations: see "Features" and "EMC";
7. The out case needs to be connected to the earth (⏚) of system when the terminal equipment in operating;
8. The output voltage can be adjusted by the ADJ, clockwise to increase;
9. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units;
10. 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.
11. The image certification marks are for reference only; please refer to the selection table for actual specifications. Certification is based on the physical mark or packaging label.