## FEATURES：

- Wide input range
- Continuous short-circuit protection,self recover
- I/O isolation voltage 1.5KV
- Working temperature：-40℃～+85℃
- No additional components required
- Stable performance and high reliability (MTBF≥1000K hours)
- Industry standard pin-out
- Metal case
- DIP package

## Selection Guide

| Part No. | INPUT | | OUTPUT | | | | CapacitiveLoad(μF) |
|---|---|---|---|---|---|---|---|
| | Norminal (Vdc) | Range (Vdc) | Voltage (V1dc) | current (mA) | Voltage (V2dc) | current (mA) | |
| LD15-12S3V3A | 12 | 9-18 | 3.3 | 3000 | | | |
| LD15-12S05A | | | 5 | 3000 | | | |
| LD15-12S09A | | | 9 | 1600 | | | |
| LD15-12S12A | | | 12 | 1250 | | | |
| LD15-12S15A | | | 15 | 1000 | | | |
| LD15-12S18A | | | 18 | 833 | | | |
| LD15-12S24A | | | 24 | 630 | | | |
| LD15-12S28A | | | 28 | 536 | | | |
| LD15-12S48A | | | 48 | 313 | | | |
| LD15-12D3V3A | | | +3.3 | 500 | -3.3 | 500 | |
| LD15-12D05A | | | +5 | 500 | -5 | 500 | |
| LD15-12D09A | | | +9 | 830 | -9 | 830 | |
| LD15-12D12A | | | +12 | 625 | -12 | 625 | |
| LD15-12D15A | | | +15 | 500 | -15 | 500 | |
| LD15-12D24A | | | +24 | 310 | -24 | 310 | |
| LD15-18S3V3A | 18 | 9-36 | 3.3 | 3000 | | | |
| LD15-18S05A | | | 5 | 3000 | | | |
| LD15-18S09A | | | 9 | 1600 | | | |
| LD15-18S15A | | | 15 | 1000 | | | |
| LD15-18S18A | | | 18 | 833 | | | |
| LD15-18S24A | | | 24 | 630 | | | |
| LD15-18S28A | | | 28 | 536 | | | |
| LD15-18S48A | | | 48 | 313 | | | |
| LD15-18D3V3A | | | +3.3 | 500 | -3.3V | 500 | |
| LD15-18D05A | | | +5 | 500 | -5V | 500 | |
| LD15-18D09A | | | +9 | 830 | -9V | 830 | |
| LD15-18D12A | | | +12 | 625 | -12V | 625 | |
| LD15-18D15A | | | +15 | 500 | -15V | 500 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| LD15-18D24A | | | +24 | 310 | -24 | 310 | |
| LD15-24S3V3A | 24 | 18-36 | 3.3 | 3000 | | | |
| LD15-24S05A | | | 5 | 3000 | | | |
| LD15-24S09A | | | 9 | 1600 | | | |
| LD15-24S12A | | | 12 | 1250 | | | |
| LD15-24S15A | | | 15 | 1000 | | | |
| LD15-24S18A | | | 18 | 833 | | | |
| LD15-24S24A | | | 24 | 630 | | | |
| LD15-24S28A | | | 28 | 536 | | | |
| LD15-24S48A | | | 48 | 313 | | | |
| LD15-24D3V3A | | | +3.3 | 500 | -3.3 | 500 | |
| LD15-24D05A | | | +5 | 500 | -5 | 500 | |
| LD15-24D09A | | | +9 | 830 | -9 | 830 | |
| LD15-24D12A | | | +12 | 625 | -12 | 625 | |
| LD15-24D15A | | | +15 | 500 | -15 | 500 | |
| LD15-24D24A | | | +24 | 310 | -24 | 310 | |
| LD15-36S3V3A | 36 | 18-72 | 3.3 | 3000 | | | |
| LD15-36S05A | | | 5 | 3000 | | | |
| LD15-36S09A | | | 9 | 1600 | | | |
| LD15-36S12A | | | 12 | 1250 | | | |
| LD15-36S15A | | | 15 | 1000 | | | |
| LD15-36S18A | | | 18 | 833 | | | |
| LD15-36S24A | | | 24 | 630 | | | |
| LD15-36S28A | | | 28 | 536 | | | |
| LD15-36S48A | | | 48 | 313 | | | |
| LD15-36D3V3A | | | +3.3 | 500 | -3.3 | 500 | |
| LD15-36D05A | | | +5 | 500 | -5 | 500 | |
| LD15-36D09A | | | +9 | 830 | -9 | 830 | |
| LD15-36D12A | | | +12 | 625 | -12 | 625 | |
| LD15-36D15A | | | +15 | 500 | -15 | 500 | |
| LD15-36D24A | | | +24 | 310 | -24 | 310 | |
| LD15-48S3V3A | 48 | 36-72 | 3.3 | 3000 | | | |
| LD15-48S05A | | | 5 | 3000 | | | |
| LD15-48S09A | | | 9 | 1600 | | | |
| LD15-48S12A | | | 12 | 1250 | | | |
| LD15-48S15A | | | 15 | 1000 | | | |
| LD15-48S18A | | | 18 | 833 | | | |
| LD15-48S24A | | | 24 | 630 | | | |
| LD15-48S28A | | | 28 | 536 | | | |
| LD15-48S48A | | | 48 | 313 | | | |
| LD15-48D3V3A | | | +3.3 | 500 | -3.3 | 500 | |
| LD15-48D05A | | | +5 | 500 | -5 | 500 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| LD15-48D09A | | | +9 | 830 | -9 | 830 | |
| LD15-48D12A | | | +12 | 625 | -12 | 625 | |
| LD15-48D15A | | | +15 | 500 | -15 | 500 | |
| LD15-48D24A | | | +24 | 310 | -24 | 310 | |
| LD15-110S3V3A | 110 | 72-144 | 3.3 | 3000 | | | |
| LD15-110S05A | | | 5 | 3000 | | | |
| LD15-110S09A | | | 9 | 1600 | | | |
| LD15-110S12A | | | 12 | 1250 | | | |
| LD15-110S15A | | | 15 | 1000 | | | |
| LD15-110S18A | | | 18 | 833 | | | |
| LD15-110S24A | | | 24 | 630 | | | |
| LD15-110S28A | | | 28 | 536 | | | |
| LD15-110S48A | | | 48 | 313 | | | |
| LD15-110D3V3A | | | +3.3 | 500 | -3.3 | 500 | |
| LD15-110D05A | | | +5 | 500 | -5 | 500 | |
| LD15-110D09A | | | +9 | 830 | -9 | 830 | |
| LD15-110D12A | | | +12 | 625 | -12 | 625 | |
| LD15-110D15A | | | +15 | 500 | -15 | 500 | |
| LD15-110D24A | | | +24 | 310 | -24 | 310 | |

**customized accepted,pls contact sales for details**

## Input Specifications

| | Input Voltage Range（Vdc） | Nom(Vdc) | Max（Vdc） |
|---|---|---|---|
| Input Voltage | 9-18 | 12 | 18 |
| | 9-36 | 18 | 36 |
| | 18-36 | 24 | 36 |
| | 36-72 | 48 | 72 |
| | 18-72 | 36 | 72 |
| | 72-144 | 110 | 144 |
| Hot Plug | Unavailable | | |

## Output Specifications

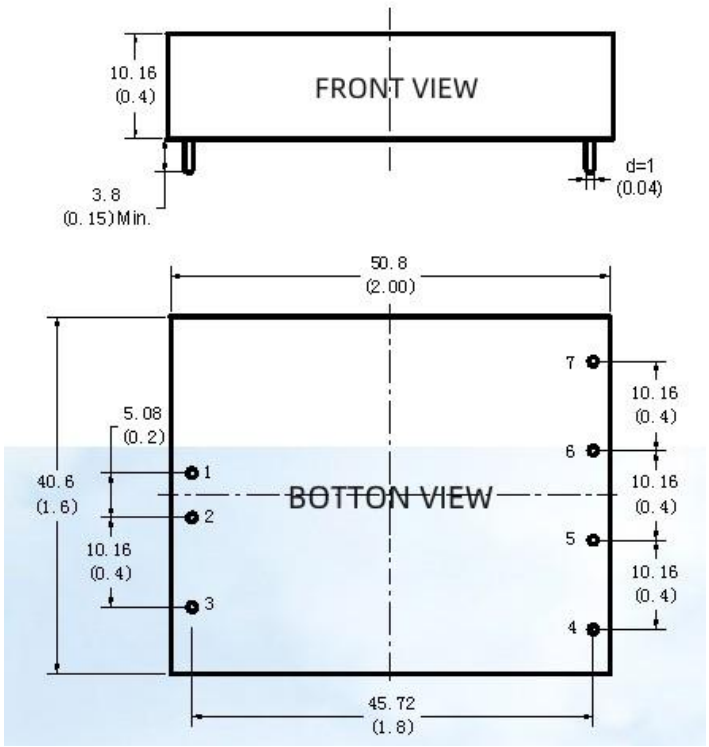
| Item | Typ | Max | Test Conditions |
|---|---|---|---|
| Voltage Accuracy | ±1% | ±3% | 0-100% load |
| Line Regulation | ±0.2% | ±0.5% | Input voltage variation from low to high at full load |
| Load Regulation | ±0.5% | ±1% | 5%-100% load |
| Ripple&Noise | - | 100mVp-p | 20MHz bandwidth, 5%-100% load |
| Transient Recovery Time | 300μs | 500μs | 25% load step change, Nominal input voltage |
| Over-voltage Protection | - | 160%Vo | 110%Vo(Min) |
| Over-current Protection | 140%Io | 190%Io | 110%Io(Min) |
| Short-circuit Protection | | | Continuous, self-recovery |

## Gerneral Specifications

| | | |
|---|---|---|
| Switching Frequency | 300KHz(Typ) | PWM mode |
| MTBF | 1000 K hours | MIL-HDBK-217F@25℃ |
| Temperature Coefficient | 0.03%/℃ | 100% full load |
| Isolation（Input-Output） | 1.5KVDC | |
| Insulation Resistance | 1000MΩ | Input-output resistance 500Vdc |
| Operating Temperature | -40～+85℃ | |
| Storage Temperature | -55～+125℃ | |
| Storage Humidity | 5-95% | Non-condensing |
| Cooling Method | Free air convection | |
| Case Material | Aluminum alloy | |
| Weight | 12g（Typ） | |

**Unless specified, otherwise all other parameters are tested under the following conditions: nominal input voltage, pure resistive load, 25℃ room temperature environment.

## Dimensions and Recommended Layout



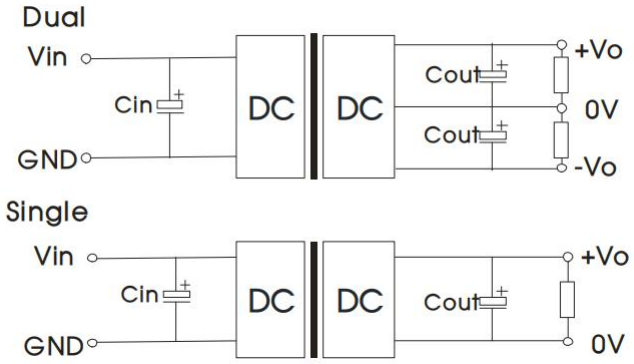

Note:
Unit: mm[inch]
Pin diameter tolerances: ± 0.10[ ± 0.004]
General tolerances: ± 0.50[ ± 0.020]

## Pins

| Pin | Single | Dual | |
|---|---|---|---|
| 1 | +Vin | +Vin | |
| 2 | -Vin | -Vin | |

| | | | |
|---|---|---|---|
| 3 | REM | REM | |
| 4 | TRIM | TRIM | |
| 5 | GND | -Vo2 | |
| 6 | Vo1 | COM | |
| 7 | No Pin | +Vo1 | |

## Recommended Circuit




| Recommended input and output capacitor values | | | | |
|---|---|---|---|---|
| Vin | Cin | Cout | | |
| 5 | 100uF/16V | | | |
| 12 | 100uF/25V | | | |
| 24 | 10uF/50V-47uF/50V | | | |
| 48 | 10uF/100V-47uF/100V | | | |

## Noted

1. Input current: Ensure that the output current of the power supply meets the instantaneous starting current of the power module (that is, twice the average input current of the power module).
2. Output load requirements: Avoid no-load use. When the actual power consumption of the load is less than 10% of the rated output power of the module or no load occurs, connect an external resistance to the output end (the sum of the external resistance and the load power is greater than or equal to 10% of the rated load) or select a module with a smaller rated power.
3. The external capacitance of the output end should not be too large; otherwise, the module may be overcurrent or poorly started. For details, see the external capacitance recommendation table.
4. External LC filter circuit can be connected for occasions with high ripple noise requirements.