

## FEATURES:

- Wide input range 4:1
- Continuous short-circuit protection,self recover
- I/O isolation voltage 1.5KV
- Working temperature: -40℃~+85℃
- Switching frequency 280KHz
- Stable performance and high reliability (MTBF≥2X10<sup>5</sup>Hrs)
- Low standby power consumption
- Metal case
- Efficiency up to 90%
- Input under-voltage,output over-voltage,short-circuit and over current protection



## Selection Guide

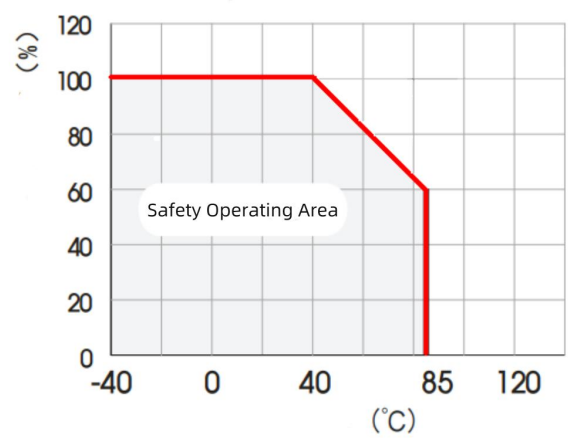
| Part No.        | INPUT             |                | OUTPUT            |                 |                   |                 | CapacitiveLoad(μF) |
|-----------------|-------------------|----------------|-------------------|-----------------|-------------------|-----------------|--------------------|
|                 | Norminal<br>(Vdc) | Range<br>(Vdc) | Voltage<br>(V1dc) | current<br>(mA) | Voltage<br>(V2dc) | current<br>(mA) |                    |
| URB2405LD-20WR3 | 24                | 9-36           | 5                 | 0               | 4000              | 0               | 2000               |
| URB2412LD-20WR3 |                   |                | 12                | 0               | 1660              | 0               | 680                |
| URB2415LD-20WR3 |                   |                | 15                | 0               | 1330              | 0               | 470                |
| URB2424LD-20WR3 |                   |                | 24                | 0               | 830               | 0               | 330                |
| URA2405LD-20WR3 |                   |                | +5                | +2000           | -5                | -2000           | 1000               |
| URA2412LD-20WR3 |                   |                | +12               | +830            | -12               | -830            | 330                |
| URA2415LD-20WR3 |                   |                | +15               | +660            | -15               | -660            | 220                |
| URA2424LD-20WR3 |                   |                | +24               | +410            | -24               | -410            | 150                |
| URB4805LD-20WR3 | 48                | 18-75          | 5                 | 0               | 4000              | 0               | 2000               |
| URB4812LD-20WR3 |                   |                | 12                | 0               | 1660              | 0               | 680                |
| URB4815LD-20WR3 |                   |                | 15                | 0               | 1330              | 0               | 470                |
| URB4824LD-20WR3 |                   |                | 24                | 0               | 830               | 0               | 330                |
| URA4805LD-20WR3 |                   |                | +5                | +2000           | -5                | -2000           | 1000               |
| URA4812LD-20WR3 |                   |                | +12               | +830            | -12               | -830            | 330                |
| URA4815LD-20WR3 |                   |                | +15               | +660            | -15               | -660            | 220                |
| URA4824LD-20WR3 |                   |                | +24               | +410            | -24               | -410            | 150                |
| URB1D05LD-20WR3 | 110               | 40-160         | 5                 | 0               | 4000              | 0               | 2000               |
| URB1D12LD-20WR3 |                   |                | 12                | 0               | 1660              | 0               | 680                |
| URB1D15LD-20WR3 |                   |                | 15                | 0               | 1330              | 0               | 470                |
| URB1D24LD-20WR3 |                   |                | 24                | 0               | 830               | 0               | 330                |
| URA1D05LD-20WR3 |                   |                | +5                | +2000           | -5                | -2000           | 1000               |
| URA1D12LD-20WR3 |                   |                | +12               | +830            | -12               | -830            | 330                |
| URA1D15LD-20WR3 |                   |                | +15               | +660            | -15               | -660            | 220                |
| URA1D24LD-20WR3 |                   |                | +24               | +410            | -24               | -410            | 150                |

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

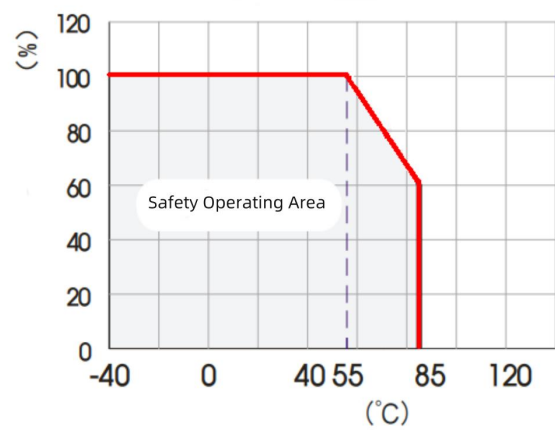
## Input Specifications

| Input Voltage Range | Nom(Vdc) | Max (Vdc) |
|---------------------|----------|-----------|
|---------------------|----------|-----------|

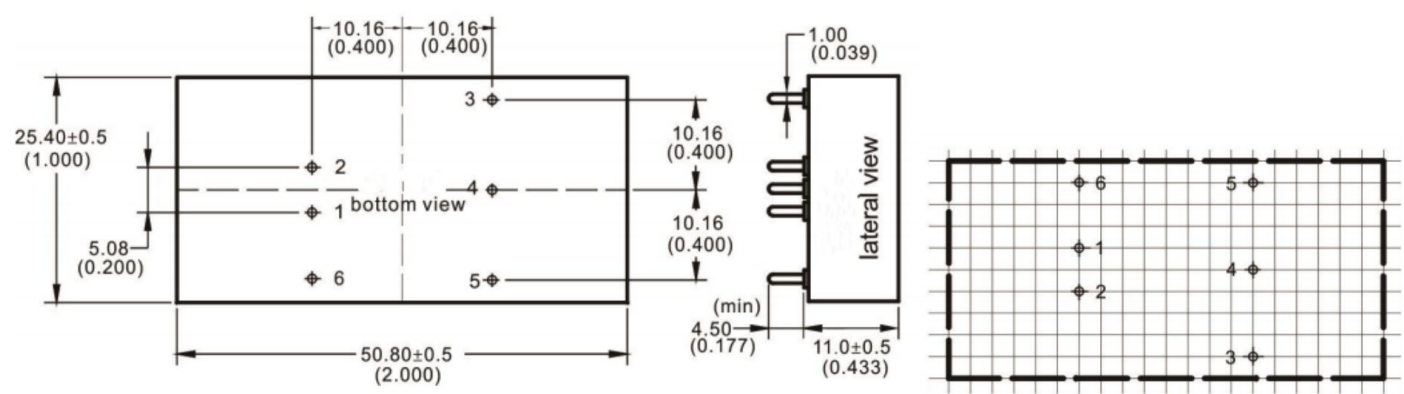
|                                                                                                                                                                             |     |                           |                                 |                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---------------------------|---------------------------------|-------------------------------------------------------|
| Input Voltage                                                                                                                                                               |     | (Vdc)                     |                                 |                                                       |
|                                                                                                                                                                             |     | 9-36                      | 24                              | 36                                                    |
|                                                                                                                                                                             |     | 18-75                     | 48                              | 75                                                    |
|                                                                                                                                                                             |     | 40-160                    | 110                             | 160                                                   |
| Hot Plug                                                                                                                                                                    |     | Unavailable               |                                 |                                                       |
| Output Specifications                                                                                                                                                       |     |                           |                                 |                                                       |
| Item                                                                                                                                                                        |     | Typ                       | Max                             | Test Conditions                                       |
| Voltage Accuracy                                                                                                                                                            | +Vo | ±1%                       | ±2%                             | 0-100% load                                           |
|                                                                                                                                                                             | -Vo | ±2%                       | ±3%                             |                                                       |
| Line Regulation                                                                                                                                                             | +Vo | ±0.2%                     | ±0.5%                           | Input voltage variation from low to high at full load |
|                                                                                                                                                                             | -Vo | ±0.5%                     | ±1%                             |                                                       |
| Load Regulation                                                                                                                                                             | +Vo | ±0.5%                     | ±1%                             | 5%-100% load                                          |
|                                                                                                                                                                             | -Vo | ±0.5%                     | ±1.5%                           |                                                       |
| Ripple&Noise                                                                                                                                                                |     | 60mVp-p                   | 80mVp-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-load Protection                                                                                                                                                        |     | -                         | 200%Io                          | 110%Io(Min)                                           |
| Short-circuit Protection                                                                                                                                                    |     | Continuous, self-recovery |                                 |                                                       |
| Transient Response Deviation                                                                                                                                                |     | 5Vout                     | ≤5%TYP; ≤8%MAX,Instant recovery | 25% load step change, nominal input                   |
|                                                                                                                                                                             |     | Other output              | ≤3%TYP; ≤5%MAX,Instant recovery |                                                       |
| Start-up Time                                                                                                                                                               |     |                           | 50ms                            |                                                       |
| Output voltage adjustment range                                                                                                                                             |     | ≥±10% Vo                  |                                 |                                                       |
| Output the start-up overshoot voltage                                                                                                                                       |     |                           | ≤2%Vo                           |                                                       |
| Gernal Specifications                                                                                                                                                       |     |                           |                                 |                                                       |
| Switching Frequency                                                                                                                                                         |     | 280KHz(Typ)               |                                 |                                                       |
| MTBF                                                                                                                                                                        |     | 2X10 <sup>5</sup> Hrs     |                                 | MIL-HDBK-217F@25℃                                     |
| Isolation (Input-Output)                                                                                                                                                    |     | 1.5KVDC                   |                                 |                                                       |
| Operating Temperature                                                                                                                                                       |     | -40~+85℃                  |                                 |                                                       |
| Storage Temperature                                                                                                                                                         |     | -55~+125℃                 |                                 |                                                       |
| Storage Humidity                                                                                                                                                            |     | 5-95%RH                   |                                 | Non-condensing                                        |
| Cooling Method                                                                                                                                                              |     | Free air convection       |                                 |                                                       |
| Case Material                                                                                                                                                               |     | Aluminum alloy            |                                 |                                                       |
| Weight                                                                                                                                                                      |     | 20g (Typ)                 |                                 |                                                       |
| **Unless specified, otherwise all other parameters are tested under the following conditions: nominal input voltage, pure resistive load, 25℃ room temperature environment. |     |                           |                                 |                                                       |
| Temperature derating curve                                                                                                                                                  |     |                           |                                 |                                                       |
| 5V Dual output                                                                                                                                                              |     |                           |                                 |                                                       |



Other output



Dimensions and Recommended Layout



Unit:mm(inch)

Pins

| Pin | Single | Dual |  |
|-----|--------|------|--|
|-----|--------|------|--|

|   |      |      |  |
|---|------|------|--|
| 1 | CTRL | CTRL |  |
| 2 | -Vin | -Vin |  |
| 3 | +Vin | +Vin |  |
| 4 | TRIM | COM  |  |
| 5 | -Vo  | -Vo  |  |
| 6 | CTRL | CTRL |  |

Recommended Circuit



| Vout (VDC) | Cin (μF)  | Cout (μF) |
|------------|-----------|-----------|
| 5          | 100μF/50V | 220uF/16V |
| 12/15      |           | 100μF/50V |
| 24         |           | 47μF/50V  |

Note

- 1. The product should be used within the specified range; otherwise, it may cause permanent damage to the product.
- 2. If the product operates beyond its load range, it cannot be guaranteed that all performance indicators of the product comply with those in this manual.
- 3. Unless otherwise specified, all the above data were measured at Ta=25℃, humidity <75%, input nominal voltage and output rated load (pure resistance load).
- 4. The above are all performance indicators of the product models listed in this manual. Some indicators of non-standard models may exceed the above requirements. For specific situations, you can directly contact our technical personnel.
- 5. Product specification changes will not be notified separately. Please pay attention to the latest manual published on our company's official website.

\*The final interpretation right of the product belongs to ECCO ELECTRONICS.