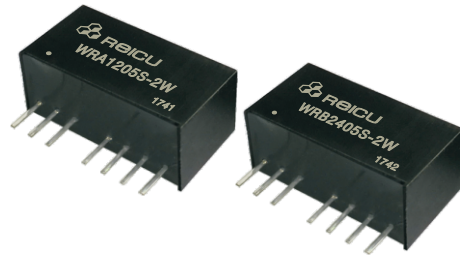


## Features

- Efficiency up to 80%
- 1600VDC Isolation
- Singl/Double output
- Regulated output
- Remote On/Off Control
- Continous short circuit protection
- 2:1 Wide input voltage range
- Wide temperature -40℃ to 85℃
- Low ripple and noise



## Model Selection Guide

| Order Code  | Vin(V)  |         | Output |        | Max capacitive Load | Efficiency(%) (Typ) |
|-------------|---------|---------|--------|--------|---------------------|---------------------|
|             | Nominal | Range   | Vo(V)  | Io(mA) |                     |                     |
| WRB0505S-2W | 5       | 4.5-9.0 | 5      | 400    | 330                 | 70                  |
| WRB0509S-2W |         |         | 9      | 222    | 330                 | 70                  |
| WRB0512S-2W |         |         | 12     | 167    | 330                 | 75                  |
| WRB0515S-2W |         |         | 15     | 133    | 220                 | 72                  |
| WRB1205S-2W | 12      | 9-18    | 5      | 400    | 330                 | 76                  |
| WRB1209S-2W |         |         | 9      | 222    | 330                 | 77                  |
| WRB1212S-2W |         |         | 12     | 167    | 330                 | 79                  |
| WRB1215S-2W |         |         | 15     | 133    | 220                 | 81                  |
| WRB2405S-2W | 24      | 18-36   | 5      | 400    | 330                 | 75                  |
| WRB2409S-2W |         |         | 9      | 222    | 330                 | 78                  |
| WRB2412S-2W |         |         | 12     | 167    | 330                 | 80                  |
| WRB2415S-2W |         |         | 15     | 133    | 220                 | 81                  |
| WRB4805S-2W | 48      | 36-72   | 5      | 400    | 330                 | 76                  |
| WRB4809S-2W |         |         | 9      | 222    | 330                 | 78                  |
| WRB4812S-2W |         |         | 12     | 167    | 330                 | 80                  |
| WRB4815S-2W |         |         | 15     | 133    | 220                 | 80                  |
| WRA0505S-2W | 5       | 4.5-9.0 | ±5     | ±200   | 220                 | 72                  |
| WRA0512S-2W |         |         | ±12    | ±83    | 220                 | 74                  |
| WRA0515S-2W |         |         | ±15    | ±67    | 150                 | 73                  |
| WRA1205S-2W | 12      | 9-18    | ±5     | ±200   | 220                 | 76                  |
| WRA1212S-2W |         |         | ±12    | ±83    | 220                 | 73                  |
| WRA1215S-2W |         |         | ±15    | ±67    | 150                 | 75                  |
| WRA2405S-2W | 24      | 18-36   | ±5     | ±200   | 220                 | 78                  |
| WRA2412S-2W |         |         | ±12    | ±83    | 220                 | 78                  |
| WRA2415S-2W |         |         | ±15    | ±67    | 150                 | 76                  |
| WRA4805S-2W | 48      | 36-72   | ±5     | ±200   | 220                 | 75                  |
| WRA4812S-2W |         |         | ±12    | ±83    | 220                 | 77                  |
| WRA4815S-2W |         |         | ±15    | ±67    | 150                 | 75                  |

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\*All the specifications typical at Ta=+25℃ resistive load, nominal input voltage and rated output current unless otherwise noted.

## Input Characteristics

| Parameter                         | Condition        | Min                | Typ | Max | Units |
|-----------------------------------|------------------|--------------------|-----|-----|-------|
| Input Surge Voltage (1 sec. Max.) | 5V Input Models  | -0.7               | --  | 15  | VDC   |
|                                   | 12V Input Models | -0.7               | --  | 25  |       |
|                                   | 24V Input Models | -0.7               | --  | 50  |       |
|                                   | 48V Input Models | -0.7               | --  | 90  |       |
| Input Filter Type                 | All Models       | Internal Capacitor |     |     |       |

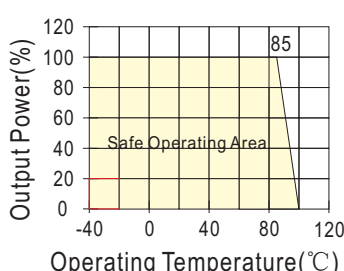
## Output Characteristics

| Parameter                | Condition                      | Min   | Typ  | Max  | Units |
|--------------------------|--------------------------------|-------|------|------|-------|
| Line regulation          | Full load, Vin(Min~Max)        | ±0.15 | --   | ±0.5 | %     |
| Switching frequency      | Full load,nominal input        | --    | 250  | --   | KHz   |
| Load regulation          | 10%~100% load                  | --    | ±0.5 | ±1   | %     |
| Ripple and noise         | BW=DC to 20MHz                 | --    | 30   | 75   | mVp-p |
| Short circuit Protection | Continuous, Automatic Recovery |       |      |      |       |

## General Characteristics

| Parameter             | Condition           | Min  | Typ  | Max  | Units   |
|-----------------------|---------------------|------|------|------|---------|
| Operating Temperature | All output types    | -40  | --   | +85  | ℃       |
| Storage               |                     | -55  | --   | +125 | ℃       |
| Storage humidity      |                     | --   | --   | +95  | %       |
| Cooling               | Free air convection | --   | --   | --   |         |
| Isolation voltage     | 1mA≤1minute         | --   | 1600 | --   | VDC     |
| Isolation resistance  | 500VDC              | 1000 | --   | --   | M Ω     |
| MTBF                  | 2×10 <sup>5</sup>   |      |      |      | K hours |
| Case material         | Plastic             |      |      |      |         |

## Temperature Derating Graph Curve



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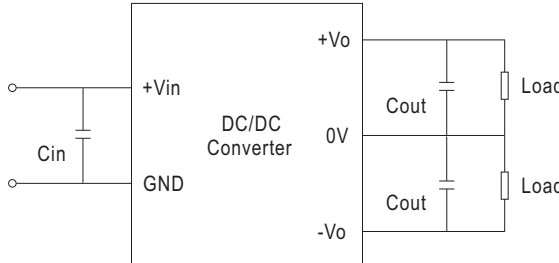
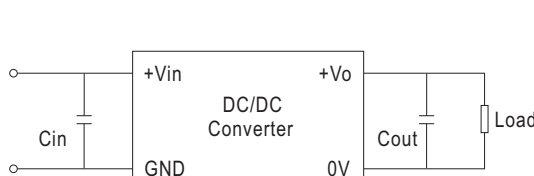
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## Design & Feature Considerations

### 1. Input/Output Ripple Reduction

Reduce output ripple, it is recommended to use capacitors at the input/output.

It is recommended to use 10uF~100uF capacitors at the input; 3.3~22uF capacitors at the output.



### 2. Overload Protection

The products provide protection against overload, the unit is equipped with internal current limiting circuitry .

### 3. Remote On/Off (CTRL Terminal)

When open or high impedance, the converter work well; When this pin is high, the converter shut down; It should be note that the input current should be between 5-10mA, exceeding the maximum 20mA will cause permanence damage to the converter.

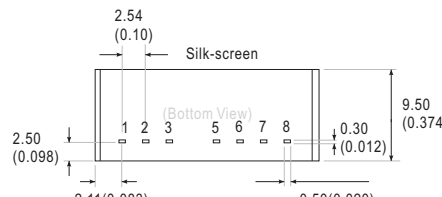
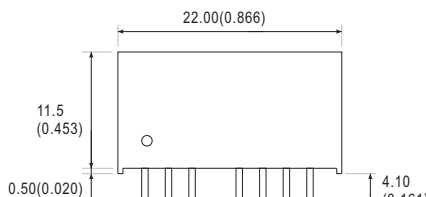
The value of R can be derived as follows:

$$R = \frac{V_C - V_D - 1.0}{I_C}$$

## Note

- 1.To ensure this module can operate effcinetly and reliably,During operation,the minimum output load is not less than 10% of the full load.
- 2.Other input and output voltage may be available, please
- 3.Specifications subject to change without notice

## Mechanical Dimension & Pin Connections


Note:  
Unit:mm(inch)

| Pin    | 1   | 2   | 3    | 5  | 6   | 7   | 8   |
|--------|-----|-----|------|----|-----|-----|-----|
| Single | GND | Vin | CTRL | NC | +Vo | -Vo | CS  |
| Double | GND | Vin | CTRL | NC | +Vo | -Vo | -Vo |

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