

## Features

- ◆ Operating temperature: -40 to +85°C
- ◆ 4.5-9/9-18/18-36/36-75/9-36/18-75Vdc input
- ◆ 5V/9V/12V/15V/24V/±5V/±9V/±12V/±15V output
- ◆ Efficiency up to 85%
- ◆ Lowest noise & ripple
- ◆ 100% burn-In
- ◆ No external heat sink
- ◆ Continuous short circuit protection
- ◆ RoHS compliance
- ◆ Case size 31.8×20.3×11.5mm 25.4×25.4×10.2mm

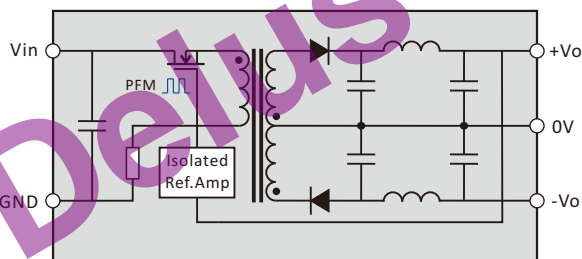
## General Description

WA/B/E/F\_P(D)-6W series high power density, can help you save valuable board space. Wide input voltage range, low starting current, good load characteristics, and minimum noise characteristics.

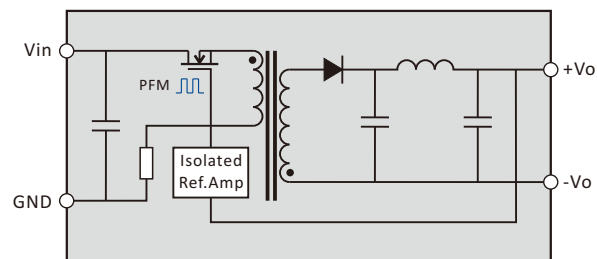
The products used in all ceramic capacitors, all SMT processing technology, excellent performance, stable and reliable.



## Functional Diagram



WA/WE Series



WB/WF Series

## Selection Guide

### WB1205P-6W

| Product Series   | Input Voltage   | Output Voltage   | Package Style  | Rated Power |
|--|---|--|--|-------------|
| WA:<br>wide input isolated 1.5kVdc dual<br>WE:<br>wide input isolated 3.0kVdc dual<br>WB:<br>wide input isolated 1.5kVdc single<br>WF:<br>wide input isolated 3.0kVdc single | 05 = 4.5-9 Vdc Range<br>12 = 9-18 Vdc Range<br>24 = 18-36 Vdc Range<br>48 = 36-75 Vdc Range | 05 = 5Vdc ±5Vdc<br>09 = 9Vdc ±9Vdc<br>12 = 12Vdc ±12Vdc<br>15 = 15Vdc ±15Vdc<br>24 = 24Vdc ±24Vdc<br>↑     ↑<br>WB    WA<br>WF    WE | P(Matel):<br>31.8×20.3×11.5mm<br>D(Matel):<br>25.4×25.4×10.2mm | 6W = 6Watts |

# WA/B/E/F\_P/D-6W Series

6w, wide input, isolated & regulated dual/single output dc-dc converter



## Output Specifications

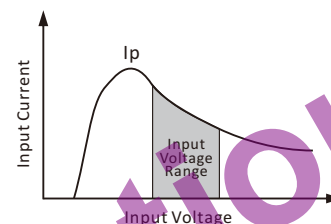
| Item                     | Test Conditions              | Min                            | Typ  | Max  | Units |
|--------------------------|------------------------------|--------------------------------|------|------|-------|
| Output Power             | Ta=-40-+71°C                 |                                |      | 6    | W     |
| Line Regulation          | 100% load, input low to high |                                | ±0.1 | ±0.3 | %     |
| Load Regulation          | Nominal, 10%-100% load       |                                | ±0.3 | ±0.5 |       |
| Output Voltage Accuracy  | Nominal, 100% load           |                                | ±1   | ±3   |       |
|                          |                              |                                | ±2.5 | ±5   |       |
| Temperature Drift        | Nominal, 100% load           |                                |      | 0.03 | %/°C  |
| Ripple & Noise           | DC-20MHz bandwidth           |                                | 40   | 100  | mVp-p |
| Switching Frequency      | Nominal, 100% load           | 180                            |      | 550  | KHz   |
| Short Circuit Protection |                              | Continuous, Automatic Recovery |      |      |       |

## Application Note

### 1. The power requirements

When it is used in unregulated power supply, be sure that the fluctuating range of the power supply and the rippled voltage do not exceed the module standard. Input current of power supply should afford the startup current of this kind of DC/DC module.

General:  $I_p < 1.6I_{in-max}$ .



### 2. Input polarity protection

The series product no positive & negative reverse polarity protection, solution is the input series in a diode.

### 3. Recommended Circuit

This series of products have a very good ripple and noise performance, general applications, the output does not require any external filter components (such as capacitors, inductors).

If necessary, the proportion by 100uF/1A external capacitor, not too large, avoid affect the module's startup performance.

**4. This product cannot be used in parallel, can not hot-swappable.**

### 5. On derating

When the environmental temperature exceeds 71°C the module must be derating use, please refer to derating curve.

## Isolation Specifications

| Item                  | Test Conditions           | Min  | Typ  | Max | Units |
|-----------------------|---------------------------|------|------|-----|-------|
| Isolation Resistance  | Test at 500Vdc            | 1000 |      |     | MΩ    |
| Isolation Voltage     | Tested for 1S and 1mA max | 1500 |      |     | Vdc   |
|                       |                           | 3000 |      |     |       |
| Isolation Capacitance | 100kHz/0.1Vdc             |      | 1000 |     | pF    |

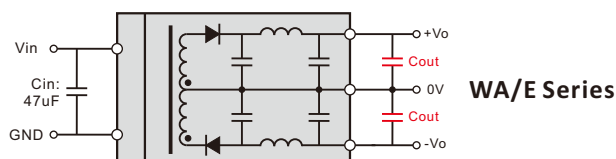
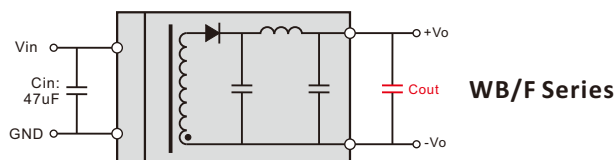
## Common Specification

| Item                  | Test Conditions                | Min             | Typ | Max  | Units |
|-----------------------|--------------------------------|-----------------|-----|------|-------|
| Operating Temperature | Ta>71°C Derating               | -45             |     | +85  | °C    |
| Maximum Case Temp.    |                                |                 |     | 65   |       |
| Storage Temperature   |                                | -50             |     | +130 |       |
| Lead Temperature      | 1.5mm from case for 10 seconds |                 |     | +300 |       |
| Storage Humidity      |                                |                 |     | 95   | %     |
| Case Material         |                                | Aluminium Alloy |     |      |       |

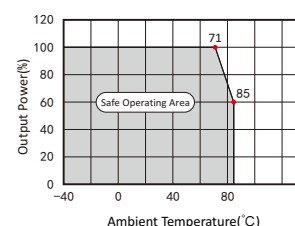
## Absolute Maximum

|                       |                  |         |
|-----------------------|------------------|---------|
| Input Voltage Maximum | 05V input models | 0~12Vdc |
|                       | 12V input models | 0~20Vdc |
|                       | 24V input models | 0~40Vdc |
|                       | 48V input models | 0~80Vdc |

## Standard Recommended Circuit



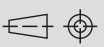
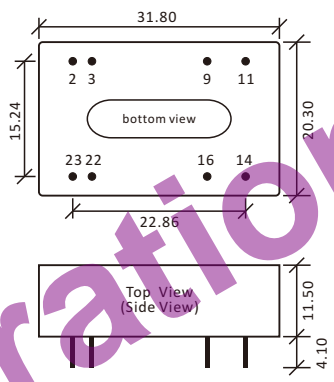
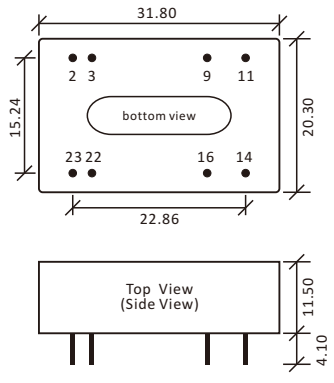
Temperature Derating Curve



# WA\_P-6W & WE\_P-6W Series

6w, wide input, isolated & regulated dual output dc-dc converter



| Product Program |              |                  |              |             |     |                |         |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
|-----------------|--------------|------------------|--------------|-------------|-----|----------------|---------|--|---|--|-----|-----|-------|----|------|----|----------|-----|-----|-----|----|-----|
| Model           | Input        |                  | Output       |             |     |                | Eff (%) | Certificate  | Mechanical Dimensions<br>First Angle Projection      |  |     |     |       |    |      |    |          |     |     |     |    |     |
|                 | Voltage(Vdc) |                  | Voltage(Vdc) | Current(mA) |     | Ripple (mVp-p) |         |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
|                 | Nominal      | Range            | Nominal      | Max         | Min |                |         |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| WA1205P-6W      | 12           | 9-18             | ±5           | ±600        | ±60 |                | 77      |  <p>Weight: 16g</p>   | <p>Isolation: 1500Vdc</p> <p>Note: all size units mm, diameter of all terminal 0.5mm, distance between all adjacent terminal 2.54mm</p> | <table border="1"> <tr> <td>Pin</td> <td>2,3</td> <td>22,23</td> <td>14</td> <td>9,16</td> <td>11</td> </tr> <tr> <td>Function</td> <td>GND</td> <td>Vin</td> <td>+Vo</td> <td>0V</td> <td>-Vo</td> </tr> </table> | Pin | 2,3 | 22,23 | 14 | 9,16 | 11 | Function | GND | Vin | +Vo | 0V | -Vo |
| Pin             |              |                  | 2,3          | 22,23       | 14  | 9,16           | 11      |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| Function        |              |                  | GND          | Vin         | +Vo | 0V             | -Vo     |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| WA1209P-6W      |              |                  | ±9           | ±333        | ±33 |                | 77      |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| WA1212P-6W      |              |                  | ±12          | ±250        | ±25 |                | 79      |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| WA1215P-6W      | ±15          | ±200             | ±20          |             | 80  |                |         |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| WA1224P-6W      | ±24          | ±125             | ±13          |             | 80  |                |         |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| PWA2405P-6W     | 24           | 18-36<br>(9-36)  | ±5           | ±600        | ±60 |                | 77      |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| PWA2409P-6W     |              |                  | ±9           | ±333        | ±33 |                | 78      |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| PWA2412P-6W     |              |                  | ±12          | ±250        | ±25 |                | 82      |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| PWA2415P-6W     |              |                  | ±15          | ±200        | ±20 |                | 85      |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| PWA2424P-6W     |              |                  | ±24          | ±125        | ±13 |                | 85      |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| PWA4805P-6W     | 48           | 36-75<br>(18-75) | ±5           | ±600        | ±60 |                | 77      |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| PWA4809P-6W     |              |                  | ±9           | ±333        | ±33 |                | 78      |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| PWA4812P-6W     |              |                  | ±12          | ±250        | ±25 |                | 82      |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| PWA4815P-6W     |              |                  | ±15          | ±200        | ±20 |                | 85      |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| PWA4824P-6W     |              |                  | ±24          | ±125        | ±13 |                | 85      |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| WE1205P-6W      | 12           | 9-18             | ±5           | ±600        | ±60 |                | 77      |  <p>Weight: 16g</p> | <p>Isolation: 3000Vdc</p> <p>Note: all size units mm, diameter of all terminal 0.5mm, distance between all adjacent terminal 2.54mm</p> | <table border="1"> <tr> <td>Pin</td> <td>2,3</td> <td>22,23</td> <td>14</td> <td>9,16</td> <td>11</td> </tr> <tr> <td>Function</td> <td>GND</td> <td>Vin</td> <td>+Vo</td> <td>0V</td> <td>-Vo</td> </tr> </table> | Pin | 2,3 | 22,23 | 14 | 9,16 | 11 | Function | GND | Vin | +Vo | 0V | -Vo |
| Pin             |              |                  | 2,3          | 22,23       | 14  | 9,16           | 11      |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| Function        |              |                  | GND          | Vin         | +Vo | 0V             | -Vo     |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| WE1209P-6W      |              |                  | ±9           | ±333        | ±33 |                | 77      |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| WE1212P-6W      |              |                  | ±12          | ±250        | ±25 |                | 79      |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| WE1215P-6W      | ±15          | ±200             | ±20          |             | 80  |                |         |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| WE1224P-6W      | ±24          | ±125             | ±13          |             | 80  |                |         |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| PWE2405P-6W     | 24           | 18-36<br>(9-36)  | ±5           | ±600        | ±60 |                | 77      |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| PWE2409P-6W     |              |                  | ±9           | ±333        | ±33 |                | 78      |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| PWE2412P-6W     |              |                  | ±12          | ±250        | ±25 |                | 82      |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| PWE2415P-6W     |              |                  | ±15          | ±200        | ±20 |                | 85      |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| PWE2424P-6W     |              |                  | ±24          | ±125        | ±13 |                | 85      |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| PWE4805P-6W     | 48           | 36-75<br>(18-75) | ±5           | ±600        | ±60 |                | 77      |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| PWE4809P-6W     |              |                  | ±9           | ±333        | ±33 |                | 78      |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| PWE4812P-6W     |              |                  | ±12          | ±250        | ±25 |                | 82      |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| PWE4815P-6W     |              |                  | ±15          | ±200        | ±20 |                | 85      |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |
| PWE4824P-6W     |              |                  | ±24          | ±125        | ±13 |                | 85      |  |   |  |     |     |       |    |      |    |          |     |     |     |    |     |

Note: The prefix "P" for 4:1 input range

# WA\_D-6W & WE\_D-6W Series

6w, wide input, isolated & regulated dual output dc-dc converter



| Product Program |              |                  |              |             |     |         |             |  |                |    |   |   |   |   |          |     |     |     |    |     |
|-----------------|--------------|------------------|--------------|-------------|-----|---------|-------------|--|----------------|----|---|---|---|---|----------|-----|-----|-----|----|-----|
| Model           | Input        |                  | Output       |             |     | Eff (%) | Certificate | Mechanical Dimensions<br>First Angle Projection  |                |    |   |   |   |   |          |     |     |     |    |     |
|                 | Voltage(Vdc) |                  | Voltage(Vdc) | Current(mA) |     |         |             |  | Ripple (mVp-p) |    |   |   |   |   |          |     |     |     |    |     |
|                 | Nominal      | Range            | Nominal      | Max         | Min |         |             |  |                |    |   |   |   |   |          |     |     |     |    |     |
| WA1205D-6W      | 12           | 9-18             | ±5           | ±600        | ±60 |         | 77          | <p>Weight: 16g</p> <p>Isolation: 1500Vdc</p> <p>Note: all size units mm, diameter of all terminal 0.5mm, distance between all adjacent terminal 2.54mm</p> <table border="1"> <tr> <td>Pin</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>Function</td> <td>GND</td> <td>Vin</td> <td>+Vo</td> <td>0V</td> <td>-Vo</td> </tr> </table> | Pin            | 1  | 2 | 3 | 4 | 5 | Function | GND | Vin | +Vo | 0V | -Vo |
| Pin             |              |                  | 1            | 2           | 3   | 4       | 5           |  |                |    |   |   |   |   |          |     |     |     |    |     |
| Function        |              |                  | GND          | Vin         | +Vo | 0V      | -Vo         |  |                |    |   |   |   |   |          |     |     |     |    |     |
| WA1209D-6W      |              |                  |              |             | ±9  | ±333    | ±33         |  |                | 77 |   |   |   |   |          |     |     |     |    |     |
| WA1212D-6W      |              |                  |              |             | ±12 | ±250    | ±25         |  |                | 79 |   |   |   |   |          |     |     |     |    |     |
| WA1215D-6W      |              |                  | ±15          | ±200        | ±20 |         | 80          |  |                |    |   |   |   |   |          |     |     |     |    |     |
| WA1224D-6W      |              |                  |              |             |     |         |             |  |                |    |   |   |   |   |          |     |     |     |    |     |
| PWA2405D-6W     | 24           | 18-36<br>(9-36)  | ±5           | ±600        | ±60 |         | 77          |  |                |    |   |   |   |   |          |     |     |     |    |     |
| PWA2409D-6W     |              |                  |              |             | ±9  | ±333    | ±33         |  |                | 78 |   |   |   |   |          |     |     |     |    |     |
| PWA2412D-6W     |              |                  |              |             | ±12 | ±250    | ±25         |  |                | 82 |   |   |   |   |          |     |     |     |    |     |
| PWA2415D-6W     |              |                  |              |             | ±15 | ±200    | ±20         |  |                | 85 |   |   |   |   |          |     |     |     |    |     |
| PWA2424D-6W     |              |                  |              |             |     |         |             |  |                |    |   |   |   |   |          |     |     |     |    |     |
| PWA4805D-6W     | 48           | 36-75<br>(18-75) | ±5           | ±600        | ±60 |         | 77          |  |                |    |   |   |   |   |          |     |     |     |    |     |
| PWA4809D-6W     |              |                  |              |             | ±9  | ±333    | ±33         |  |                | 78 |   |   |   |   |          |     |     |     |    |     |
| PWA4812D-6W     |              |                  |              |             | ±12 | ±250    | ±25         |  |                | 82 |   |   |   |   |          |     |     |     |    |     |
| PWA4815D-6W     |              |                  |              |             | ±15 | ±200    | ±20         |  | 85             |    |   |   |   |   |          |     |     |     |    |     |
| PWA4824D-6W     |              |                  |              |             |     |         |             |  |                |    |   |   |   |   |          |     |     |     |    |     |

|             |    |                  |     |      |     |      |     |  |     |    |   |   |   |   |          |     |     |     |    |     |
|-------------|----|------------------|-----|------|-----|------|-----|--|-----|----|---|---|---|---|----------|-----|-----|-----|----|-----|
| WE1205D-6W  | 12 | 9-18             | ±5  | ±600 | ±60 |      | 77  | <p>Weight: 16g</p> <p>Isolation: 3000Vdc</p> <p>Note: all size units mm, diameter of all terminal 0.5mm, distance between all adjacent terminal 2.54mm</p> <table border="1"> <tr> <td>Pin</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>Function</td> <td>GND</td> <td>Vin</td> <td>+Vo</td> <td>0V</td> <td>-Vo</td> </tr> </table> | Pin | 1  | 2 | 3 | 4 | 5 | Function | GND | Vin | +Vo | 0V | -Vo |
| Pin         |    |                  | 1   | 2    | 3   | 4    | 5   |  |     |    |   |   |   |   |          |     |     |     |    |     |
| Function    |    |                  | GND | Vin  | +Vo | 0V   | -Vo |  |     |    |   |   |   |   |          |     |     |     |    |     |
| WE1209D-6W  |    |                  |     |      | ±9  | ±333 | ±33 |  |     | 77 |   |   |   |   |          |     |     |     |    |     |
| WE1212D-6W  |    |                  |     |      | ±12 | ±250 | ±25 |  |     | 79 |   |   |   |   |          |     |     |     |    |     |
| WE1215D-6W  |    |                  | ±15 | ±200 | ±20 |      | 80  |  |     |    |   |   |   |   |          |     |     |     |    |     |
| WE1224D-6W  |    |                  |     |      |     |      |     |  |     |    |   |   |   |   |          |     |     |     |    |     |
| PWE2405D-6W | 24 | 18-36<br>(9-36)  | ±5  | ±600 | ±60 |      | 77  |  |     |    |   |   |   |   |          |     |     |     |    |     |
| PWE2409D-6W |    |                  |     |      | ±9  | ±333 | ±33 |  |     | 78 |   |   |   |   |          |     |     |     |    |     |
| PWE2412D-6W |    |                  |     |      | ±12 | ±250 | ±25 |  |     | 82 |   |   |   |   |          |     |     |     |    |     |
| PWE2415D-6W |    |                  |     |      | ±15 | ±200 | ±20 |  |     | 85 |   |   |   |   |          |     |     |     |    |     |
| PWE2424D-6W |    |                  |     |      |     |      |     |  |     |    |   |   |   |   |          |     |     |     |    |     |
| PWE4805D-6W | 48 | 36-75<br>(18-75) | ±5  | ±600 | ±60 |      | 77  |  |     |    |   |   |   |   |          |     |     |     |    |     |
| PWE4809D-6W |    |                  |     |      | ±9  | ±333 | ±33 |  |     | 78 |   |   |   |   |          |     |     |     |    |     |
| PWE4812D-6W |    |                  |     |      | ±12 | ±250 | ±25 |  |     | 82 |   |   |   |   |          |     |     |     |    |     |
| PWE4815D-6W |    |                  |     |      | ±15 | ±200 | ±20 |  | 85  |    |   |   |   |   |          |     |     |     |    |     |
| PWE4824D-6W |    |                  |     |      |     |      |     |  |     |    |   |   |   |   |          |     |     |     |    |     |

Note: The prefix "P" for 4:1 input range

# WB\_P-6W & WF\_P-6W Series

6w, wide input, isolated & regulated single output dc-dc converter



## Product Program

| Model       | Input        |                  | Output       |             |     |                | Eff (%) | Certificate  | Mechanical Dimensions<br>First Angle Projection |     |       |    |    |      |          |     |     |     |     |    |
|-------------|--------------|------------------|--------------|-------------|-----|----------------|---------|--|---|-----|-------|----|----|------|----------|-----|-----|-----|-----|----|
|             | Voltage(Vdc) |                  | Voltage(Vdc) | Current(mA) |     | Ripple (mVp-p) |         |  |   |     |       |    |    |      |          |     |     |     |     |    |
|             | Nominal      | Range            | Nominal      | Max         | Min |                |         |  |   |     |       |    |    |      |          |     |     |     |     |    |
| WB1205P-6W  | 12           | 9-18             | 5            | 1200        | 120 |                | 77      | <p>Weight: 16g</p> <p>Isolation: 1500Vdc<br/>Note: all size units mm, diameter of all terminal 0.5mm, distance between all adjacent terminal 2.54mm</p> <table border="1"> <tr> <td>Pin</td> <td>2,3</td> <td>22,23</td> <td>14</td> <td>16</td> <td>9,11</td> </tr> <tr> <td>Function</td> <td>GND</td> <td>Vin</td> <td>+Vo</td> <td>-Vo</td> <td>NC</td> </tr> </table> | Pin   | 2,3 | 22,23 | 14 | 16 | 9,11 | Function | GND | Vin | +Vo | -Vo | NC |
| Pin         |              |                  | 2,3          | 22,23       | 14  | 16             | 9,11    |  |   |     |       |    |    |      |          |     |     |     |     |    |
| Function    |              |                  | GND          | Vin         | +Vo | -Vo            | NC      |  |   |     |       |    |    |      |          |     |     |     |     |    |
| WB1209P-6W  |              |                  | 9            | 667         | 67  |                | 77      |  |   |     |       |    |    |      |          |     |     |     |     |    |
| WB1212P-6W  |              |                  | 12           | 500         | 50  |                | 79      |  |   |     |       |    |    |      |          |     |     |     |     |    |
| WB1215P-6W  | 15           | 400              | 40           |             | 80  |                |         |  |   |     |       |    |    |      |          |     |     |     |     |    |
| WB1224P-6W  | 24           | 250              | 25           |             | 80  |                |         |  |   |     |       |    |    |      |          |     |     |     |     |    |
| PWB2405P-6W | 24           | 18-36<br>(9-36)  | 5            | 1200        | 120 |                | 77      |  |   |     |       |    |    |      |          |     |     |     |     |    |
| PWB2409P-6W |              |                  | 9            | 667         | 67  |                | 78      |  |   |     |       |    |    |      |          |     |     |     |     |    |
| PWB2412P-6W |              |                  | 12           | 500         | 50  |                | 82      |  |   |     |       |    |    |      |          |     |     |     |     |    |
| PWB2415P-6W |              |                  | 15           | 400         | 40  |                | 85      |  |   |     |       |    |    |      |          |     |     |     |     |    |
| PWB2424P-6W |              |                  | 24           | 250         | 25  |                | 85      |  |   |     |       |    |    |      |          |     |     |     |     |    |
| PWB4805P-6W | 48           | 36-75<br>(18-75) | 5            | 1200        | 120 |                | 77      |  |   |     |       |    |    |      |          |     |     |     |     |    |
| PWB4809P-6W |              |                  | 9            | 667         | 67  |                | 78      |  |   |     |       |    |    |      |          |     |     |     |     |    |
| PWB4812P-6W |              |                  | 12           | 500         | 50  |                | 82      |  |   |     |       |    |    |      |          |     |     |     |     |    |
| PWB4815P-6W |              |                  | 15           | 400         | 40  |                | 85      |  |   |     |       |    |    |      |          |     |     |     |     |    |
| PWB4824P-6W |              |                  | 24           | 250         | 25  |                | 85      |  |   |     |       |    |    |      |          |     |     |     |     |    |

|             |    |                  |     |       |     |     |      |  |     |     |       |    |    |      |          |     |     |     |     |    |
|-------------|----|------------------|-----|-------|-----|-----|------|--|-----|-----|-------|----|----|------|----------|-----|-----|-----|-----|----|
| WF1205P-6W  | 12 | 9-18             | 5   | 1200  | 120 |     | 77   | <p>Weight: 16g</p> <p>Isolation: 3000Vdc<br/>Note: all size units mm, diameter of all terminal 0.5mm, distance between all adjacent terminal 2.54mm</p> <table border="1"> <tr> <td>Pin</td> <td>2,3</td> <td>22,23</td> <td>14</td> <td>16</td> <td>9,11</td> </tr> <tr> <td>Function</td> <td>GND</td> <td>Vin</td> <td>+Vo</td> <td>-Vo</td> <td>NC</td> </tr> </table> | Pin | 2,3 | 22,23 | 14 | 16 | 9,11 | Function | GND | Vin | +Vo | -Vo | NC |
| Pin         |    |                  | 2,3 | 22,23 | 14  | 16  | 9,11 |  |     |     |       |    |    |      |          |     |     |     |     |    |
| Function    |    |                  | GND | Vin   | +Vo | -Vo | NC   |  |     |     |       |    |    |      |          |     |     |     |     |    |
| WF1209P-6W  |    |                  | 9   | 667   | 67  |     | 77   |  |     |     |       |    |    |      |          |     |     |     |     |    |
| WF1212P-6W  |    |                  | 12  | 500   | 50  |     | 79   |  |     |     |       |    |    |      |          |     |     |     |     |    |
| WF1215P-6W  | 15 | 400              | 40  |       | 80  |     |      |  |     |     |       |    |    |      |          |     |     |     |     |    |
| WF1224P-6W  | 24 | 250              | 25  |       | 80  |     |      |  |     |     |       |    |    |      |          |     |     |     |     |    |
| PWF2405P-6W | 24 | 18-36<br>(9-36)  | 5   | 1200  | 120 |     | 77   |  |     |     |       |    |    |      |          |     |     |     |     |    |
| PWF2409P-6W |    |                  | 9   | 667   | 67  |     | 78   |  |     |     |       |    |    |      |          |     |     |     |     |    |
| PWF2412P-6W |    |                  | 12  | 500   | 50  |     | 82   |  |     |     |       |    |    |      |          |     |     |     |     |    |
| PWF2415P-6W |    |                  | 15  | 400   | 40  |     | 85   |  |     |     |       |    |    |      |          |     |     |     |     |    |
| PWF2424P-6W |    |                  | 24  | 250   | 25  |     | 85   |  |     |     |       |    |    |      |          |     |     |     |     |    |
| PWF4805P-6W | 48 | 36-75<br>(18-75) | 5   | 1200  | 120 |     | 77   |  |     |     |       |    |    |      |          |     |     |     |     |    |
| PWF4809P-6W |    |                  | 9   | 667   | 67  |     | 78   |  |     |     |       |    |    |      |          |     |     |     |     |    |
| PWF4812P-6W |    |                  | 12  | 500   | 50  |     | 82   |  |     |     |       |    |    |      |          |     |     |     |     |    |
| PWF4815P-6W |    |                  | 15  | 400   | 40  |     | 85   |  |     |     |       |    |    |      |          |     |     |     |     |    |
| PWF4824P-6W |    |                  | 24  | 250   | 25  |     | 85   |  |     |     |       |    |    |      |          |     |     |     |     |    |

Note: The prefix "P" for 4:1 input range

# WB\_D-6W & WF\_D-6W Series

6w, wide input, isolated & regulated single output dc-dc converter



| Product Program |              |                  |              |             |     |         |         |  |   |    |   |   |   |   |          |     |     |     |    |     |
|-----------------|--------------|------------------|--------------|-------------|-----|---------|---------|--|---|----|---|---|---|---|----------|-----|-----|-----|----|-----|
| Model           | Input        |                  | Output       |             |     |         | Eff (%) | Certificate  | Mechanical Dimensions<br>First Angle Projection |    |   |   |   |   |          |     |     |     |    |     |
|                 | Voltage(Vdc) |                  | Voltage(Vdc) | Current(mA) |     | Ripple  |         |  |   |    |   |   |   |   |          |     |     |     |    |     |
|                 | Nominal      | Range            | Nominal      | Max         | Min | (mVp-p) |         |  |   |    |   |   |   |   |          |     |     |     |    |     |
| WB1205D-6W      | 12           | 9-18             | 5            | 1200        | 120 |         | 77      | <p>Isolation: 1500Vdc<br/>Note: all size units mm, diameter of all terminal 0.5mm, distance between all adjacent terminal 2.54mm</p> <table border="1"> <tr> <td>Pin</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>Function</td> <td>GND</td> <td>Vin</td> <td>+Vo</td> <td>NP</td> <td>-Vo</td> </tr> </table> | Pin   | 1  | 2 | 3 | 4 | 5 | Function | GND | Vin | +Vo | NP | -Vo |
| Pin             |              |                  | 1            | 2           | 3   | 4       | 5       |  |   |    |   |   |   |   |          |     |     |     |    |     |
| Function        |              |                  | GND          | Vin         | +Vo | NP      | -Vo     |  |   |    |   |   |   |   |          |     |     |     |    |     |
| WB1209D-6W      |              |                  |              |             | 9   | 667     | 67      |  |   | 77 |   |   |   |   |          |     |     |     |    |     |
| WB1212D-6W      |              |                  |              |             | 12  | 500     | 50      |  |   | 79 |   |   |   |   |          |     |     |     |    |     |
| WB1215D-6W      |              |                  | 15           | 400         | 40  |         | 80      |  |   |    |   |   |   |   |          |     |     |     |    |     |
| WB1224D-6W      |              |                  | 24           | 250         | 25  |         | 80      |  |   |    |   |   |   |   |          |     |     |     |    |     |
| PWB2405D-6W     | 24           | 18-36<br>(9-36)  | 5            | 1200        | 120 |         | 77      |  |   |    |   |   |   |   |          |     |     |     |    |     |
| PWB2409D-6W     |              |                  |              |             | 9   | 667     | 67      |  |   | 78 |   |   |   |   |          |     |     |     |    |     |
| PWB2412D-6W     |              |                  |              |             | 12  | 500     | 50      |  |   | 82 |   |   |   |   |          |     |     |     |    |     |
| PWB2415D-6W     |              |                  |              |             | 15  | 400     | 40      |  |   | 85 |   |   |   |   |          |     |     |     |    |     |
| PWB2424D-6W     |              |                  |              |             | 24  | 250     | 25      |  |   | 85 |   |   |   |   |          |     |     |     |    |     |
| PWB4805D-6W     | 48           | 36-75<br>(18-75) | 5            | 1200        | 120 |         | 77      |  |   |    |   |   |   |   |          |     |     |     |    |     |
| PWB4809D-6W     |              |                  |              |             | 9   | 667     | 67      |  |   | 78 |   |   |   |   |          |     |     |     |    |     |
| PWB4812D-6W     |              |                  |              |             | 12  | 500     | 50      |  |   | 82 |   |   |   |   |          |     |     |     |    |     |
| PWB4815D-6W     |              |                  |              |             | 15  | 400     | 40      |  | 85  |    |   |   |   |   |          |     |     |     |    |     |
| PWB4824D-6W     |              |                  |              |             | 24  | 250     | 25      |  | 85  |    |   |   |   |   |          |     |     |     |    |     |

|             |    |                  |     |      |     |     |     |  |     |    |   |   |   |   |          |     |     |     |    |     |
|-------------|----|------------------|-----|------|-----|-----|-----|--|-----|----|---|---|---|---|----------|-----|-----|-----|----|-----|
| WF1205D-6W  | 12 | 9-18             | 5   | 1200 | 120 |     | 77  | <p>Isolation: 3000Vdc<br/>Note: all size units mm, diameter of all terminal 0.5mm, distance between all adjacent terminal 2.54mm</p> <table border="1"> <tr> <td>Pin</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>Function</td> <td>GND</td> <td>Vin</td> <td>+Vo</td> <td>NP</td> <td>-Vo</td> </tr> </table> | Pin | 1  | 2 | 3 | 4 | 5 | Function | GND | Vin | +Vo | NP | -Vo |
| Pin         |    |                  | 1   | 2    | 3   | 4   | 5   |  |     |    |   |   |   |   |          |     |     |     |    |     |
| Function    |    |                  | GND | Vin  | +Vo | NP  | -Vo |  |     |    |   |   |   |   |          |     |     |     |    |     |
| WF1209D-6W  |    |                  |     |      | 9   | 667 | 67  |  |     | 77 |   |   |   |   |          |     |     |     |    |     |
| WF1212D-6W  |    |                  |     |      | 12  | 500 | 50  |  |     | 79 |   |   |   |   |          |     |     |     |    |     |
| WF1215D-6W  |    |                  | 15  | 400  | 40  |     | 80  |  |     |    |   |   |   |   |          |     |     |     |    |     |
| WF1224D-6W  |    |                  | 24  | 250  | 25  |     | 80  |  |     |    |   |   |   |   |          |     |     |     |    |     |
| PWF2405D-6W | 24 | 18-36<br>(9-36)  | 5   | 1200 | 120 |     | 77  |  |     |    |   |   |   |   |          |     |     |     |    |     |
| PWF2409D-6W |    |                  |     |      | 9   | 667 | 67  |  |     | 78 |   |   |   |   |          |     |     |     |    |     |
| PWF2412D-6W |    |                  |     |      | 12  | 500 | 50  |  |     | 82 |   |   |   |   |          |     |     |     |    |     |
| PWF2415D-6W |    |                  |     |      | 15  | 400 | 40  |  |     | 85 |   |   |   |   |          |     |     |     |    |     |
| PWF2424D-6W |    |                  |     |      | 24  | 250 | 25  |  |     | 85 |   |   |   |   |          |     |     |     |    |     |
| PWF4805D-6W | 48 | 36-75<br>(18-75) | 5   | 1200 | 120 |     | 77  |  |     |    |   |   |   |   |          |     |     |     |    |     |
| PWF4809D-6W |    |                  |     |      | 9   | 667 | 67  |  |     | 78 |   |   |   |   |          |     |     |     |    |     |
| PWF4812D-6W |    |                  |     |      | 12  | 500 | 50  |  |     | 82 |   |   |   |   |          |     |     |     |    |     |
| PWF4815D-6W |    |                  |     |      | 15  | 400 | 40  |  | 85  |    |   |   |   |   |          |     |     |     |    |     |
| PWF4824D-6W |    |                  |     |      | 24  | 250 | 25  |  | 85  |    |   |   |   |   |          |     |     |     |    |     |

Note: The prefix "P" for 4:1 input range

# File Release Notes

DBN-404 Technical Data Sheet Version



| No. | Version | Data       | Description   |
|-----|---------|------------|---|
| 1   | V0      | 2011/11/01 | First release                                       |
| 2   | V1      | 2013/08/24 | The fifth page error correction "-Vo(11) to-Vo(16)" |
| 3   |         |            |   |
| 4   |         |            |   |
| 5   |         |            |   |

Delus Corporation

1. All data in addition to particular things, are  $T_a = 25^{\circ}\text{C}$ , humidity < 75%, nominal input voltage and output measured at rated load;
2. Non-standard models with some of the following indicators may be different from the specific circumstances of the Secretary to direct contact with me;
3. In the use of this manual, if some of them do not quite understand terms please refer to our <<DC / DC Converter Application Guide>>;
4. The Company focused on technological improvements, product specifications and parameter updates without notice, to pay attention to the latest information on website:  
[www.delus-power.com](http://www.delus-power.com)

All Delus Corporation's products are manufactured, assembled and tested utilizing ISO9001 quality systems.  
For information regarding Delus Corporation and its products please see [www.delus.cn](http://www.delus.cn)