

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

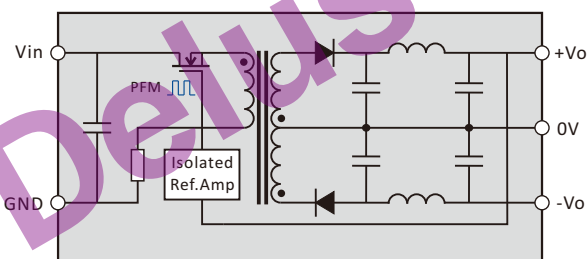
General Description

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.

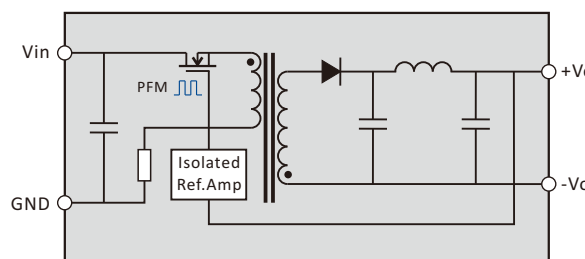
The products used in all ceramic capacitors, all SMT processing technology, excellent performance, stable and reliable.



Functional Diagram



WA/WE Series



WB/WF Series

Selection Guide

WB1205P-6W

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

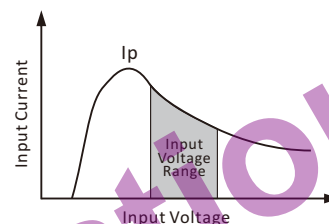
| Item | Test Conditions | Min | Typ | Max | Units |
|--------------------------|------------------------------|--------------------------------|------|------|-------|
| Output Power | Ta=-40-+71°C | | | 6 | W |
| Line Regulation | 100% load, input low to high | | ±0.1 | ±0.3 | % |
| Load Regulation | Nominal, 10%-100% load | | ±0.3 | ±0.5 | |
| Output Voltage Accuracy | Nominal, 100% load | | ±1 | ±3 | |
| | | Mast Slave | | ±2.5 | |
| 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 |

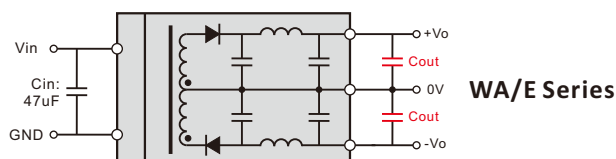
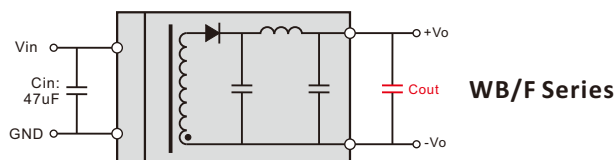
Common Specification

| 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 | | Black Plastic (UL94V-0) | | | |

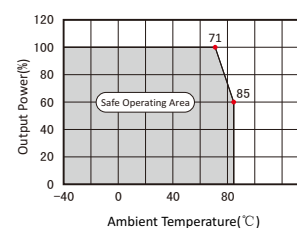
Absolute Maximum

| | | |
|-----------------------|------------------|---------|
| Input Voltage Maximun | 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



WB_D-6W & WF_D-6W Series

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



| Product Program | | | | | | | | Mechanical Dimensions First Angle Projection | | | | | |
|-----------------|-----------------------|------------------|---|------|-----|------------|-------------|---|-----|---------|-----|----|-----|
| Model | Input Voltage(Vdc) | | Output Voltage(Vdc) Current(mA) Ripple | | | Eff (%) | Certificate | | | | | | |
| | Nominal | Range | Nominal | Max | Min | | | | | (mVp-p) | | | |
| | | | | | | | | | | | | | |
| WB1205D-6W | 12 | 9-18 | 5 | 1200 | 120 | | 77 | Weight: 16g Bottom View Side View Isolation: 1500Vdc Note: all size units mm, diameter of all terminal 0.5mm, distance between all adjacent terminal 2.54mm | | | | | |
| 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 (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 (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 | | | | | | |
| | | | | | | | | Pin | 1 | 2 | 3 | 4 | 5 |
| | | | | | | | | Function | GND | Vin | +Vo | NP | -Vo |

| | | | | | | | | | | | | | |
|-------------|----|------------------|----|------|-----|--|----|---|-----|-----|-----|----|-----|
| WF1205D-6W | 12 | 9-18 | 5 | 1200 | 120 | | 77 | Weight: 16g Bottom View Side View Isolation: 3000Vdc Note: all size units mm, diameter of all terminal 0.5mm, distance between all adjacent terminal 2.54mm | | | | | |
| 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 (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 (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 | | | | | | |
| | | | | | | | | Pin | 1 | 2 | 3 | 4 | 5 |
| | | | | | | | | Function | GND | Vin | +Vo | NP | -Vo |

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 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |

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1. All data in addition to particular things, are Ta = 25°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.cn

All Delus Corporation's products are manufactured, assembled and tested utilizing ISO9001 quality systems.
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