

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 31.8×20.3×10.2mm

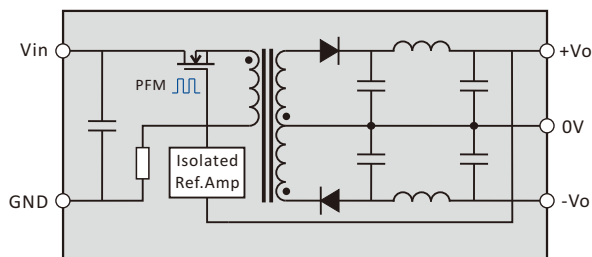
General Description

WA/B/D/E/F_P-3W 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.

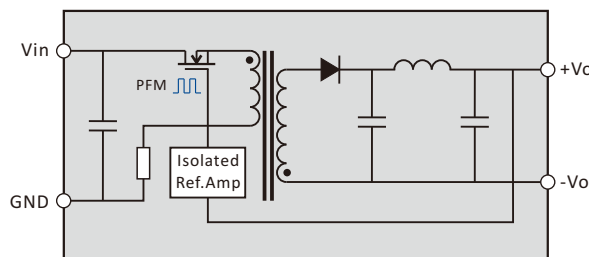
The products used in all ceramic capacitors, all SMT processing technology, excellent performance, stable and reliable.



Functional Diagram



MA/WA/WE Series



WB/WF Series

Selection Guide

WB1205P-3W

Product Series	Input Voltage	Output Voltage	Package Style	Rated Power
WA, MA: 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 MA WE	P(Metall): 31.8×20.3×11.5mm P(Plastic): 31.8×20.3×10.2mm D(Metall): 25.4×25.4×10.2mm	3W = 3Watts

WA/B/D/E/F_P-3W & MA_D-3W Series

3w, wide input, isolated & regulated dual/single output dc-dc converter



Output Specifications

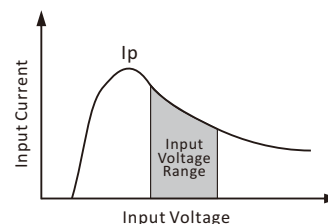
Item	Test Conditions	Min	Typ	Max	Units
Output Power	Ta=-40-+71°C			3	W
Line Regulation	100% load, input low to high		±0.1	±0.3	%
Load Regulation	Nominal, 10%-100% load		±0.3	±0.5	
Output Voltage Accuracy	Nominal, 100% load		±1	±3	
		Mast Slave		±2.5	
Temperature Drift	Nominal, 100% load			0.03	%/°C
Ripple & Noise	DC-20MHz bandwidth		20	40	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	MA/WA/WB	1500		Vdc
		WE/WF	3000		
Isolation Capacitance	100kHz/0.1Vdc		1000		pF

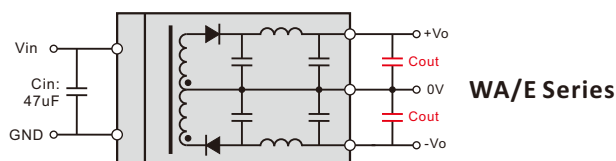
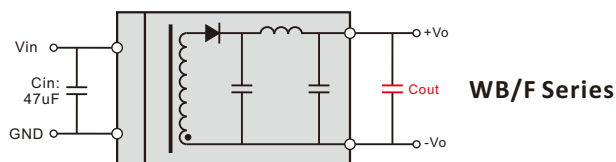
Common Specification

Item	Test Conditions	Min	Typ	Max	Units
Operating Temperature	Ta>71°C Derating	-45		+85	°C
Maximum Case Temp.			50		
Storage Temperature		-50		+130	
Lead Temperature	1.5mm from case for 10 seconds			+300	
Storage Humidity				95	%
Case Material		Black Plastic (UL94V-0)			

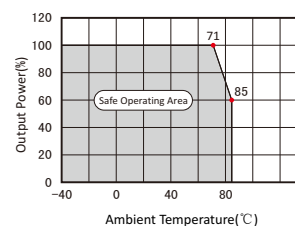
Absolute Maximum

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



WA_P-3W & WE_P-3W Series

3w, wide input, isolated & regulated dual output dc-dc converter



Product Program

Model	Input		Output				Eff (%)	Certificate	Mechanical Dimensions First Angle Projection
	Voltage(Vdc)		Voltage(Vdc)	Current(mA)		Ripple (mVp-p)			
	Nominal	Range	Nominal	Max	Min				
WA0505P-3W	5	4.5-9.0	±5	±300	±30		75	<p>Weight: 16g</p> <p>Isolation: 1500Vdc, black plastic case Note: all size units mm, diameter of all terminal 0.5mm, distance between all adjacent terminal 2.54mm</p>	
WA0509P-3W			±9	±167	±17		77		
WA0512P-3W			±12	±125	±13		78		
WA0515P-3W			±15	±100	±10		78		
WA0524P-3W			±24	±63	±7		78		
WA1205P-3W	12	9-18	±5	±300	±30		77		
WA1209P-3W			±9	±167	±17		77		
WA1212P-3W			±12	±125	±13		79		
WA1215P-3W			±15	±100	±10		80		
WA1224P-3W			±24	±63	±7		80		
PWA2405P-3W	24	18-36 (9-36)	±5	±300	±30		77		
PWA2409P-3W			±9	±167	±17		78		
PWA2412P-3W			±12	±125	±13		82		
PWA2415P-3W			±15	±100	±10		85		
PWA2424P-3W			±24	±63	±7		85		
PWA4805P-3W	48	36-75 (18-75)	±5	±300	±30		77		
PWA4809P-3W			±9	±167	±17		78		
PWA4812P-3W			±12	±125	±13		82		
PWA4815P-3W			±15	±100	±10		85		
PWA4824P-3W			±24	±63	±7		85		
Pin	2,3	22,23	14	9,16	11				
Function	GND	Vin	+Vo	0V	-Vo				

WE0505P-3W	5	4.5-9.0	±5	±300	±30		75	<p>Weight: 16g</p> <p>Isolation: 3000Vdc, black plastic case Note: all size units mm, diameter of all terminal 0.5mm, distance between all adjacent terminal 2.54mm</p>
WE0509P-3W			±9	±167	±17		77	
WE0512P-3W			±12	±125	±13		78	
WE0515P-3W			±15	±100	±10		78	
WE0524P-3W			±24	±63	±7		78	
WE1205P-3W	12	9-18	±5	±300	±30		77	
WE1209P-3W			±9	±167	±17		77	
WE1212P-3W			±12	±125	±13		79	
WE1215P-3W			±15	±100	±10		80	
WE1224P-3W			±24	±63	±7		80	
PWE2405P-3W	24	18-36 (9-36)	±5	±300	±30		77	
PWE2409P-3W			±9	±167	±17		78	
PWE2412P-3W			±12	±125	±13		82	
PWE2415P-3W			±15	±100	±10		85	
PWE2424P-3W			±24	±63	±7		85	
PWE4805P-3W	48	36-75 (18-75)	±5	±300	±30		77	
PWE4809P-3W			±9	±167	±17		78	
PWE4812P-3W			±12	±125	±13		82	
PWE4815P-3W			±15	±100	±10		85	
PWE4824P-3W			±24	±63	±7		85	
Pin	2,3	22,23	14	9,16	11			
Function	GND	Vin	+Vo	0V	-Vo			

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

WD_P-3W & MA_D-3W Series

3w, wide input, isolated & regulated twin/dual output dc-dc converter



Product Program														
Model	Input		Output				Eff (%)	Certificate	Mechanical Dimensions First Angle Projection					
	Voltage(Vdc)		Voltage(Vdc)	Current(mA)		Ripple (mVp-p)								
	Nominal	Range	Nominal	Max	Min									
WD0505P-3W	5	4.5-9.0	5/5	300/300	30/30		75	<p>Weight: 17g</p>						
WD0509P-3W			9/9	167/167	17/17		77							
WD0512P-3W			12/12	125/125	13/13		78							
WD0515P-3W			15/15	100/100	10/10		78							
WD1205P-3W	12	9-18	5/5	300/300	30/30		77							
WD1209P-3W			9/9	167/167	17/17		77							
WD1212P-3W			12/12	125/125	13/13		79							
WD1215P-3W			15/15	100/100	10/10		80							
WD2405P-3W	24	18-36	5/5	300/300	30/30		77							
WD2409P-3W			9/9	167/167	17/17		78							
WD2412P-3W			12/12	125/125	13/13		82							
WD2415P-3W			15/15	100/100	10/10		85							
WD4805P-3W	48	36-75	5/5	300/300	30/30		77							
WD4809P-3W			9/9	167/167	17/17		78							
WD4812P-3W			12/12	125/125	13/13		82							
WD4815P-3W			15/15	100/100	10/10		85							
<p>Isolation: 1500Vdc, black plastic case Note: all size units mm, diameter of all terminal 0.8mm, distance between all adjacent terminal 2.54mm</p>								Pin	2,3	22,23	9	11	14	16
								Function	GND	Vin	-Vo2	+Vo2	+Vo1	-Vo1

MA0505D-3W	5	4.5-9.0	±5	±300	±30		75	<p>Weight: 16g</p>					
MA0509D-3W			±9	±167	±17		77						
MA0512D-3W			±12	±125	±13		78						
MA0515D-3W			±15	±100	±10		78						
MA0524D-3W	12	9-18	±24	±63	±7		78						
MA1205D-3W			±5	±300	±30		77						
MA1209D-3W			±9	±167	±17		77						
MA1212D-3W			±12	±125	±13		79						
MA1215D-3W	±15	±100	±10		80								
MA1224D-3W	±24	±63	±7		80								
MA2405D-3W	24	18-36	±5	±300	±30		77						
MA2409D-3W			±9	±167	±17		78						
MA2412D-3W			±12	±125	±13		82						
MA2415D-3W			±15	±100	±10		85						
MA2424D-3W	±24	±63	±7		85								
MA4805D-3W	48	36-75	±5	±300	±30		77						
MA4809D-3W			±9	±167	±17		78						
MA4812D-3W			±12	±125	±13		82						
MA4815D-3W			±15	±100	±10		85						
MA4824D-3W	±24	±63	±7		85								
<p>Isolation: 1500Vdc, black plastic case Note: all size units mm, diameter of all terminal 0.5mm, distance between all adjacent terminal 2.54mm</p>								Pin	12,13	1,24	11,14	3,10 15,23	2,23
								Function	GND	Vin	+Vo	0V	-Vo

WB_P-3W & WF_P-3W Series

3w, wide input, isolated & regulated single output dc-dc converter



Product Program

Model	Input		Output				Eff (%)	Certificate	Mechanical Dimensions First Angle Projection											
	Voltage(Vdc)		Voltage(Vdc)	Current(mA)		Ripple (mVp-p)														
	Nominal	Range	Nominal	Max	Min															
WB0505P-3W	5	4.5-9.0	5	600	60		75	<p>Weight: 16g</p>												
WB0509P-3W			9	333	34		77													
WB0512P-3W			12	250	25		78													
WB0515P-3W			15	200	20		78													
WB0524P-3W			24	125	13		78													
WB1205P-3W	12	9-18	5	600	60		77													
WB1209P-3W			9	333	34		77													
WB1212P-3W			12	250	25		79													
WB1215P-3W			15	200	20		80													
WB1224P-3W			24	125	13		80													
PWB2405P-3W	24	18-36 (9-36)	5	600	60		77													
PWB2409P-3W			9	333	34		78													
PWB2412P-3W			12	250	25		82													
PWB2415P-3W			15	200	20		85													
PWB2424P-3W			24	125	13		85													
PWB4805P-3W	48	36-75 (18-75)	5	600	60		77													
PWB4809P-3W			9	333	34		78													
PWB4812P-3W			12	250	25		82													
PWB4815P-3W			15	200	20		85													
PWB4824P-3W			24	125	13		85													
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Pin	2,3	22,23	14	16	9,11															
Function	GND	Vin	+Vo	-Vo	NC															

WF0505P-3W	5	4.5-9.0	5	600	60		75	<p>Weight: 16g</p>												
WF0509P-3W			9	333	34		77													
WF0512P-3W			12	250	25		78													
WF0515P-3W			15	200	20		78													
WF0524P-3W			24	125	13		78													
WF1205P-3W	12	9-18	5	600	60		77													
WF1209P-3W			9	333	34		77													
WF1212P-3W			12	250	25		79													
WF1215P-3W			15	200	20		80													
WF1224P-3W			24	125	13		80													
PWF2405P-3W	24	18-36 (9-36)	5	600	60		77													
PWF2409P-3W			9	333	34		78													
PWF2412P-3W			12	250	25		82													
PWF2415P-3W			15	200	20		85													
PWF2424P-3W			24	125	13		85													
PWF4805P-3W	48	36-75 (18-75)	5	600	60		77													
PWF4809P-3W			9	333	34		78													
PWF4812P-3W			12	250	25		82													
PWF4815P-3W			15	200	20		85													
PWF4824P-3W			24	125	13		85													
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Pin	2,3	22,23	14	16	9,11															
Function	GND	Vin	+Vo	-Vo	NC															

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

File Release Notes

DBN-403 Technical Data Sheet Version



No.	Version	Data	Description
1	V0	2011/11/01	First release
2			
3			
4			
5			

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.
For information regarding Delus Corporation and its products please see www.delus.cn