

Features

- ◆ Operating temperature: -40 to +85°C
- ◆ 1.5/3.0kVdc isolation
- ◆ 100% burn-in
- ◆ No external component required
- ◆ UL94V-0 package
- ◆ RoHS compliance

Typical Applications

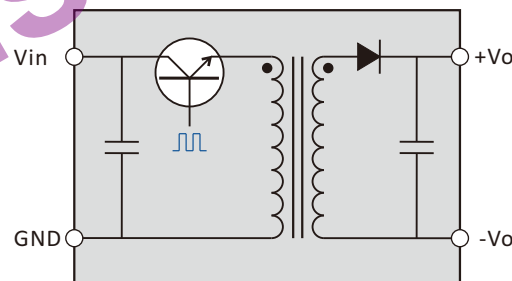
- ◆ Intelligent control, power monitoring equipment, security facilities, radio and television appliances power isolation & transform
- ◆ RS485/232, CAN bus interface, power supply isolation and other digital communication circuit
- ◆ Power ground circulation & interference suppression

General Description

B/F-W25/W5 is unregulated single output series, in use can be simply understood as a common frequency transformer (see functional diagram), the only difference is that it can achieve the DC to DC voltage conversion. The family offers a variety of standard voltage combinations, isolation voltage 1.5/3.0kVdc two grades.



Functional Diagram



Selection Guide

B 05 05 S - W25

Product Series	Input Voltage	Output Voltage	Package Style	Rated Power
B: isolated 1.5kVdc single F: isolated 3.0kVdc single	05 = 5Vdc 12 = 12Vdc 24 = 24Vdc 48 = 48Vdc	03 = 3.3Vdc 05 = 5Vdc 09 = 9Vdc 12 = 12Vdc 15 = 15Vdc 24 = 24Vdc	S,LS,MS,M: single in-line D,LD,N: dual in-line	W25 = 0.25Watt W5 = 0.5Watt

B-W25/W5 & F-W25/W5 Series

0.25~0.5w, fixed input, isolated & unregulated single output dc-dc converter



Input Specifications

Item	Min	Typ	Max	Units
Input Surge Voltage (1 sec max)	5V input	-0.7	7	Vdc
	12V input	-0.7	15	
	24V input	-0.7	28	
Reverse Polarity Input Current			0.4	A
Internal Power Dissipation			0.45	W
Input Filter	"C" filter			

Output Specifications

Item	Test Conditions	Min	Typ	Max	Units	
Output Power	W25 model	0.03		0.25	W	
	W5 model	0.05		0.5		
Line Regulation	For vin change of ±1%			±1.2	%/%	
Load Regulation	Nominal 10%-100% load	3.3V output		12	20	%
		5V output		10.5	15	
		9V output		8.3	15	
		12V output		6.8	15	
		15V output		6.3	15	
		24V output		5	15	
Output Voltage Accuracy	See Tolerance Envelope Graph					
Temperature Drift	Nominal, 100% load			0.03	%/°C	
Ripple & Noise	DC-20MHz bandwidth		10	50	mVp-p	
Switching Frequency	Nominal, 100% load	80	100	130	KHz	
Short Circuit Protection				1	S	

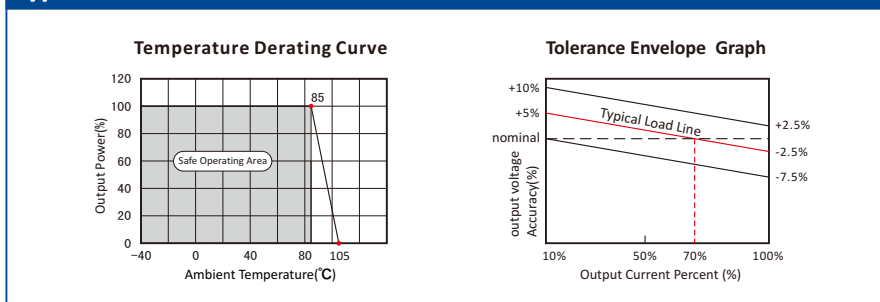
Isolation Specifications

Item	Test Conditions	Min	Typ	Max	Units
Isolation Resistance	Test at 500Vdc	1000			MΩ
Isolation Voltage	Tested for 1S and 1mA max	B	1500		Vdc
		F	3000		

Common Specification

Item	Test Conditions	Min	Typ	Max	Units
Operating Temperature		-45		+85	°C
Maximum Case Temp.			40		
Storage Temperature		-50		+130	
Lead Temperature	1.5mm from case for 10 seconds			+300	
Storage Humidity				95	%
Case Material	Black Plastic (UL94V-0)				

Typical Characteristic Curve



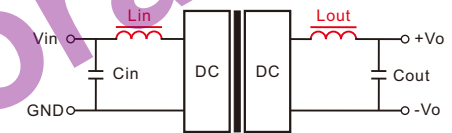
Application Note

1. Requirement On Output Load

To ensure this DC/DC can operate efficiently and reliably, during operation, the minimum output load is not less than 10% of the full load, and that **this product should never be operated under no load!** If the actual output power is very small, please connect a resistor with proper resistance at the output end in parallel to increase the load.

2. Output filter

The DC/DC without any external filter components in the case that can be stable and reliable work. If you want to further reduce ripple and improve the EMC, please connect a external filter circuit at the inputs and outputs (see figure). General, recommended values 4.7-10uF with input capacitor, and recommended values with output capacitor see the following table.



"Lin, Lout" not required, recommended values 4.7-22uH

Table 1

Cin	Cout	
4.7~10uF	3.3V	10uF
	5V	10uF
	9V	4.7uF
	12V	2.2uF
	15V	1uF
24V	1uF	

It's not recommended to connect any external capacitor in the application field with less than 0.5 watt output.

If the maximum external output capacitor still does not meet your requirements of ripple may be required connect the filter inductor (see figure), Lout values recommended 4.7-100uH. It should be noted "LC" filtering network natural frequency should be staggered with the DC/DC operating frequency to avoid mutual interference.

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

B_LS-W25 & F_LS-W25 Series

0.25w, fixed input, isolated & unregulated 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									
B0503LS-W25	5	4.5~5.5	3.3	75	8		65	 Weight: 2.1g						
B0505LS-W25			5	50	5		65							
B0509LS-W25			9	28	3		68							
B0512LS-W25			12	20	2		68							
B0515LS-W25			15	17	2		68							
B0524LS-W25			24	10	1		70							
B1203LS-W25	12	10.8~13.2	3.3	75	8		65		 Weight: 2.1g					
B1205LS-W25			5	50	5		65							
B1209LS-W25			9	28	3		68							
B1212LS-W25			12	20	2		68							
B1215LS-W25			15	17	2		68							
B1224LS-W25			24	10	1		70							
B2403LS-W25	24	21.6~26.4	3.3	75	8		65	 Weight: 2.1g						
B2405LS-W25			5	50	5		65							
B2409LS-W25			9	28	3		68							
B2412LS-W25			12	20	2		68							
B2415LS-W25			15	17	2		68							
B2424LS-W25			24	10	1		70							
F0503LS-W25	5	4.5~5.5	3.3	75	8		65		 Weight: 2.1g					
F0505LS-W25			5	50	5		65							
F0509LS-W25			9	28	3		68							
F0512LS-W25			12	20	2		68							
F0515LS-W25			15	17	2		68							
F0524LS-W25			24	10	1		70							
F1203LS-W25	12	10.8~13.2	3.3	75	8		65	 Weight: 2.1g						
F1205LS-W25			5	50	5		65							
F1209LS-W25			9	28	3		68							
F1212LS-W25			12	20	2		68							
F1215LS-W25			15	17	2		68							
F1224LS-W25			24	10	1		70							
F2403LS-W25	24	21.6~26.4	3.3	75	8		65		 Weight: 2.1g					
F2405LS-W25			5	50	5		65							
F2409LS-W25			9	28	3		68							
F2412LS-W25			12	20	2		68							
F2415LS-W25			15	17	2		68							
F2424LS-W25			24	10	1		70							

Pin	1	2	4	6	
Function	Vin	GND	-Vo	+Vo	

Pin	1	2	5	7	
Function	Vin	GND	-Vo	+Vo	

B_S-W25 & F_M-W25 Series

0.25w, fixed input, isolated & unregulated 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													
B0503S-W25	5	4.5~5.5	3.3	75	8		65	<p>Weight: 1.6g</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> <p>input or output voltage $\geq 24V$, $T=7.55mm$</p> <table border="1"> <tr> <td>Pin</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>Function</td> <td>GND</td> <td>Vin</td> <td>-Vo</td> <td>+Vo</td> </tr> </table>	Pin	1	2	3	4	Function	GND	Vin	-Vo	+Vo
Pin			1	2	3	4												
Function			GND	Vin	-Vo	+Vo												
B0505S-W25			5	50	5				65									
B0509S-W25			9	28	3				68									
B0512S-W25			12	20	2				68									
B0515S-W25	15	17	2			68												
B0524S-W25	24	10	1			70												
B1203S-W25	12	10.8~13.2	3.3	75	8		65											
B1205S-W25			5	50	5				65									
B1209S-W25			9	28	3				68									
B1212S-W25			12	20	2				68									
B1215S-W25			15	17	2				68									
B1224S-W25			24	10	1				70									
B2403S-W25	24	21.6~26.4	3.3	75	8		65											
B2405S-W25			5	50	5				65									
B2409S-W25			9	28	3				68									
B2412S-W25			12	20	2				68									
B2415S-W25			15	17	2			68										
B2424S-W25			24	10	1			70										

F0503M-W25	5	4.5~5.5	3.3	75	8		65	<p>Weight: 1.6g</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> <p>input or output voltage $\geq 24V$, $T=7.55mm$</p> <table border="1"> <tr> <td>Pin</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>Function</td> <td>GND</td> <td>Vin</td> <td>-Vo</td> <td>+Vo</td> </tr> </table>	Pin	1	2	3	4	Function	GND	Vin	-Vo	+Vo
Pin			1	2	3	4												
Function			GND	Vin	-Vo	+Vo												
F0505M-W25			5	50	5				65									
F0509M-W25			9	28	3				68									
F0512M-W25			12	20	2				68									
F0515M-W25	15	17	2			68												
F0524M-W25	24	10	1			70												
F1203M-W25	12	10.8~13.2	3.3	75	8		65											
F1205M-W25			5	50	5				65									
F1209M-W25			9	28	3				68									
F1212M-W25			12	20	2				68									
F1215M-W25			15	17	2				68									
F1224M-W25			24	10	1				70									
F2403M-W25	24	21.6~26.4	3.3	75	8		65											
F2405M-W25			5	50	5				65									
F2409M-W25			9	28	3				68									
F2412M-W25			12	20	2				68									
F2415M-W25			15	17	2			68										
F2424M-W25			24	10	1			70										

B_LS-W5 & F_LS-W5 Series

0.5w, fixed input, isolated & unregulated 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				
B0503LS-W5	5	4.5~5.5	3.3	150	15		65	<p>Weight: 2.1g</p>	
B0505LS-W5			5	100	10		67		
B0509LS-W5			9	56	6		68		
B0512LS-W5			12	42	5		68		
B0515LS-W5			15	33	3		68		
B0524LS-W5			24	21	2		70		
B1203LS-W5	12	10.8~13.2	3.3	150	15		65		
B1205LS-W5			5	100	10		67		
B1209LS-W5			9	56	6		68		
B1212LS-W5			12	42	5		68		
B1215LS-W5			15	33	3		68		
B1224LS-W5			24	21	2		70		
B2403LS-W5	24	21.6~26.4	3.3	150	15		65		
B2405LS-W5			5	100	10		67		
B2409LS-W5			9	56	6		68		
B2412LS-W5			12	42	5		68		
B2415LS-W5			15	33	3		68		
B2424LS-W5			24	21	2		70		

Isolation: 1500Vdc

Note: all size units mm, diameter of all terminal 0.5mm, distance between all adjacent terminal 2.54mm

input or output voltage >= 24V, T=7.05mm

Pin	1	2	4	6
Function	Vin	GND	-Vo	+Vo

F0503LS-W5	5	4.5~5.5	3.3	150	15		65	<p>Weight: 2.1g</p>
F0505LS-W5			5	100	10		67	
F0509LS-W5			9	56	6		68	
F0512LS-W5			12	42	5		68	
F0515LS-W5			15	33	3		68	
F0524LS-W5			24	21	2		70	
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F1205LS-W5			5	100	10		67	
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F1212LS-W5			12	42	5		68	
F1215LS-W5			15	33	3		68	
F1224LS-W5			24	21	2		70	
F2403LS-W5	24	21.6~26.4	3.3	150	15		65	
F2405LS-W5			5	100	10		67	
F2409LS-W5			9	56	6		68	
F2412LS-W5			12	42	5		68	
F2415LS-W5			15	33	3		68	
F2424LS-W5			24	21	2		70	

Isolation: 3000Vdc

Note: all size units mm, diameter of all terminal 0.5mm, distance between all adjacent terminal 2.54mm

input or output voltage >= 24V, T=7.05mm

Pin	1	2	5	7
Function	Vin	GND	-Vo	+Vo

File Release Notes

DBN-107 Technical Data Sheet Version



No.	Version	Data	Description
1	V0	2012/02/06	First release
2			
3			
4			
5			

Delus Corporation

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