

Features

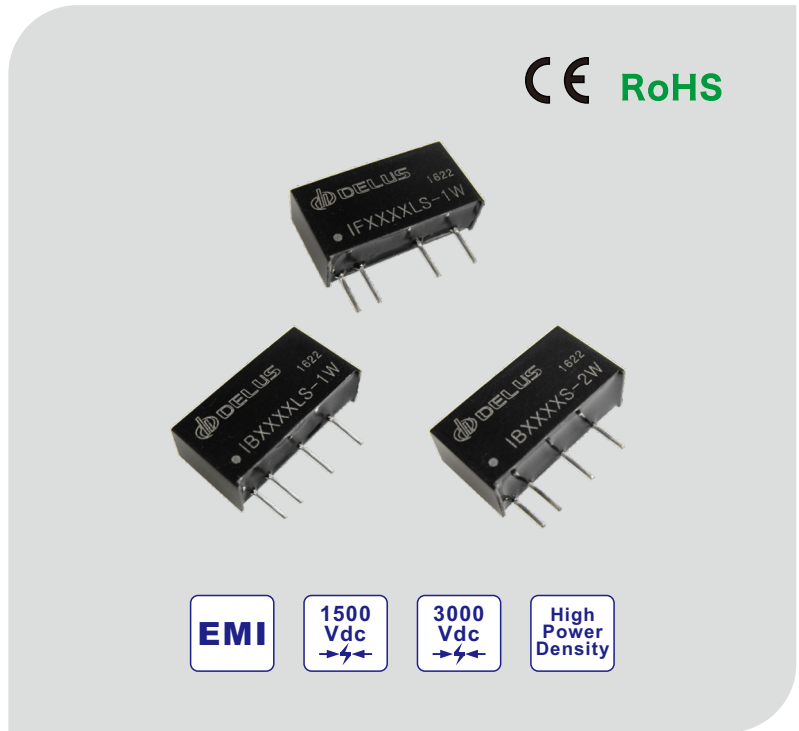
- ◆ Operating temperature: -40 to +85°C
- ◆ Efficiency up to 84%
- ◆ 3.3/5/9/12/15Vdc multiple voltage output
- ◆ Multiple package options
- ◆ International standard pin-out
- ◆ 100% burn-in
- ◆ No external component required
- ◆ UL94V-0 package
- ◆ RoHS/CE compliance
- ◆ With 3 year warranty

General Description

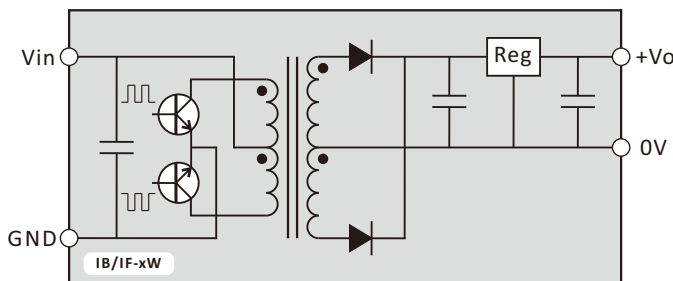
IB-1W/2W series dc/dc converters are specially designed for the application of the power supply which is isolated from the input source in the distributed power supply system on the circuit board. Small size, high power density, can save valuable board space.

The chip ceramic capacitors and SMT are used in all series. These converters have characteristics of long life, excellent performance, stability and reliability.

Applied to the input power supply voltage is relatively stable, input and output requirements for isolation, voltage stability requirements are relatively high, the ripple noise sensitive applications.

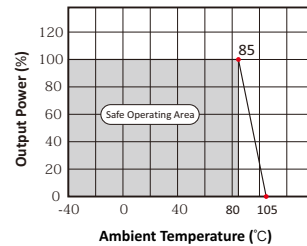


Functional Diagram

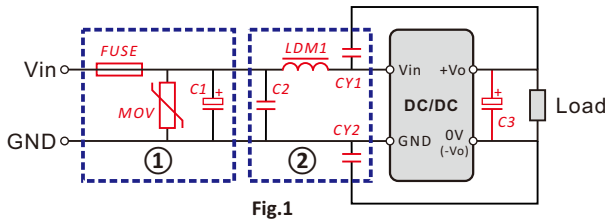


Typical Characteristic Curve

Temperature Derating Curve



EMC Solution-Recommended Circuit



Note: Part ① is the recommended external circuit for EMS test and Part ② for EMI filtering. Choose according to requirements.

Parameter Description			
Vin	3.3V/5V/9V	12V/15V/24V	48V
C2	4.7uF/50V		2.2uF/100V
LDM1	6.8uH		
CY1	-		
CY2	1nF/2kV or 4.5kV		
C3	Choose according fig.3		
If there is no recommended parameters, no external component is required.			

IB/IF-1W~2W Series

1w/2w, fixed input, isolated & regulated single output dc-dc converter



Input Specifications					
Item	Test Conditions	Min	Typ	Max	Units
Input Surge Voltage (1 sec max)	3.3V input	-0.7		5	Vdc
	5V input	-0.7		7	
	9V input	-0.7		15	
	12V input	-0.7		15	
	15V input	-0.7		20	
	24V input	-0.7		30	
	48V input	-0.7		60	
Input Filter		"C" filter			
Reverse Polarity Input Current		no support			
Hot Plug		no support			

Output Specifications					
Item	Test Conditions	Min	Typ	Max	Units
Output Power	1W model	0.1		1	W
	2W model	0.2		2	
Output Voltage Accuracy	Nominal, 100% load			±3	%
Line Regulation	For vin change of ±5%			±0.5	
Load Regulation	Nominal, 10%-100% load		±1	±2	mVp-p
Ripple	DC-20MHz bandwidth		20	30	
Noise			50	100	
Temperature Drift	Nominal, 100% load			±0.03	%/°C
Short Circuit Protection				1	s

Isolation Specifications					
Item	Test Conditions	Min	Typ	Max	Units
Isolation Voltage	IB	1500			Vdc
	IF	3000			
Insulation Resistance	Test at 500Vdc	1000			MΩ
Isolation Capacitance	IN-OUT, 100kHz @ 0.1Vdc		20		pF

Common Specification					
Item	Test Conditions	Min	Typ	Max	Units
Switching Frequency	100% load, input low to high		100		kHz
Operating Temperature		-40		+85	°C
Case Temp Rise	Ta=25°C		45		
Lead Temperature	1.5mm from case for 10 seconds			+300	
Storage Temperature		-50		+130	
Storage Humidity				95	%
MTBF	Using MIL-HDBK 217 @ 25°C	1000			k hours
Case Material		Black Plastic (UL94V-0)			

EMC Specification			
EMI	CE	EN55022:2010	Class B (See Fig.1)
	RE	EN55022:2010	Class B (See Fig.1)
EMS	ESD	EN55024:2010/EN61000-4-2	perf. Criterion B
	RS	EN55024:2010/EN61000-4-3	perf. Criterion A

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!**

When the actual output power is very small, if in the selection phase, it is recommended to select a lower power level model, else please connect a resistor with proper resistance at the output end in parallel to increase the load.

2. Typical Application Circuit

General applications, the circuit according to Fig.2 Typical recommended. The value of each component will be selected according to the following recommended list.

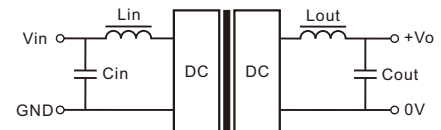


Fig.2

Capacitor and Inductor values Recommended

Cin	Cout	Lin, Lout
10~100uF	3.3V	4.7uF
	5V	4.7uF
	9V	2.2uF
	12V	2.2uF
	15V	1uF
	24V	-
		not required, recommended values 4.7-22uH

If using a filter inductor, it should be noted "LC" filtering network natural frequency should be staggered with the DC/DC operating frequency to avoid mutual interference.

3. Output overload protection

In general, the series product has no function of output overload protection. The simplest method is for connecting a self-recovery fuse in series or a external circuit breaker.

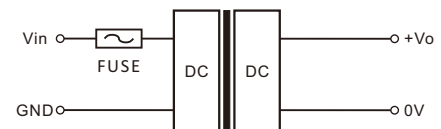


Fig.3

4. Input over-voltage protection circuit

The simplest device for Input over-voltage protection is connecting a linear regulator with over heat protection at the input (Fig.4).

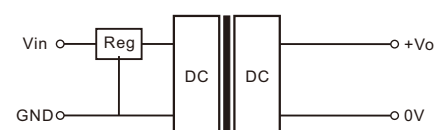


Fig.4

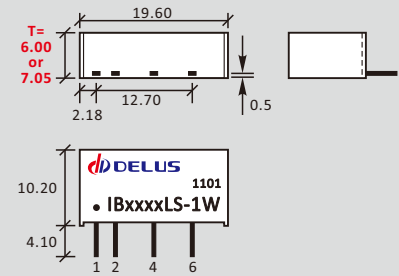
IB_LS-1W Series

1w, fixed input, 1500Vdc isolated & regulated single output dc-dc converter



Product Program							
Certificate	Model	Eff (%)	Input		Output		Max Capacitive Load (uF)
			Voltage(Vdc)		Vdc	mA	
			Nominal	Range	Nominal	Max	
CE/RoHS	IB0303LS-1W	72	3.3	3.14-3.47	3.3	300	220
	IB0305LS-1W	74			5	200	
CE/RoHS	IB0505LS-1W	76	5	4.75-5.25	5	200	220
	IB0509LS-1W	77			9	100	
	IB0512LS-1W	79			12	83	
	IB0515LS-1W	80			15	67	
CE/RoHS	IB0905LS-1W	77	9	8.55-9.45	5	200	220
	IB0909LS-1W	79			9	100	
CE/RoHS	IB1203LS-1W	77	12	11.4-12.6	3.3	300	220
	IB1205LS-1W	77			5	200	
	IB1209LS-1W	79			9	100	
	IB1212LS-1W	81			12	83	
	IB1215LS-1W	78			15	67	
CE/RoHS	IB1505LS-1W	77	15	14.2-15.7	5	200	220
	IB1509LS-1W	76			9	100	
	IB1512LS-1W	72			12	83	
	IB1515LS-1W	76			15	67	
CE/RoHS	IB2403LS-1W	72	24	22.8-25.2	3.3	300	220
	IB2405LS-1W	73			5	200	
	IB2409LS-1W	71			9	100	
	IB2412LS-1W	83			12	83	
	IB2415LS-1W	73			15	67	
CE/RoHS	IB4805LS-1W	71	48	45.6-50.4	5	200	220
	IB4812LS-1W	73			12	83	
	IB4815LS-1W	75			15	67	

Dimensions First Angle Proj



Pin	IB_LS-1W
1	Vin
2	GND
4	0V
6	+Vo

Note:

All size units mm,
 Diameter of all terminal 0.5mm;
 Distance between all adjacent terminal 2.54mm;
 if input or output voltage >= 24V,
 T=7.05mm
Isolation: 1500Vdc
Weight: 2.3g

IB_S-2W Series

2w, fixed input, 1500Vdc isolated & regulated single output dc-dc converter



Product Program							
Certificate	Model	Eff (%)	Input		Output		Max Capacitive Load (uF)
			Voltage(Vdc)		Vdc	mA	
			Nominal	Range	Nominal	Max	
CE/RoHS	IB0505S-2W	79	5	4.75-5.25	5	400	220
	IB0512S-2W	79			12	167	
CE/RoHS	IB1205S-2W	80	12	11.4-12.6	5	400	220
	IB1212S-2W	83			12	167	
CE/RoHS	IB2405S-2W	81	24	22.8-25.2	5	400	220
	IB2412S-2W	79			12	167	
CE/RoHS	IB4805S-2W	71	48	45.6-50.4	5	400	220
	IB4812S-2W	75			12	167	

Dimensions First Angle Proj

Pin	IB_S-2W
1	Vin
2	GND
4	0V
6	+Vo

Note:
 All size units mm,
 Diameter of all terminal 0.5mm;
 Distance between all adjacent terminal 2.54mm;
Isolation: 1500Vdc
Weight: 2.4g

IF_S-1W Series

1w, fixed input, 3000Vdc isolated & regulated single output dc-dc converter



Product Program							
Certificate	Model	Eff (%)	Input		Output		Max Capacitive Load (uF)
			Voltage(Vdc)		Vdc	mA	
			Nominal	Range	Nominal	Max	
CE/RoHS	IF0505LS-W25	62	5	4.75-5.25	5	50	220
	IF0505LS-W5	68			5	100	
	IF0505LS-1W	76			5	200	
	IF0509LS-W25	67			9	28	
	IF0509LS-1W	77			9	100	
	IF0512LS-1W	79			12	83	
	IF0515LS-1W	80			15	67	
CE/RoHS	IF1205LS-W25	67	12	11.4-12.6	5	50	220
	IF1205LS-1W	77			5	200	
	IF1209LS-1W	79			9	100	
	IF1212LS-1W	81			12	83	
	IF1215LS-1W	78			15	67	
CE/RoHS	IF2405LS-1W	73	24	22.8-25.2	5	200	220
	IF2409LS-1W	71			9	100	
	IF2412LS-1W	83			12	83	
	IF2415LS-1W	73			15	67	

Dimensions First Angle Proj

Pin	IF_LS-1W
1	Vin
2	GND
5	0V
7	+Vo

Note:
 All size units mm,
 Diameter of all terminal 0.5mm;
 Distance between all adjacent terminal 2.54mm;
 if input or output voltage >= 24V,
 T=7.05mm
Isolation: 3000Vdc
Weight: 2.3g

IF_S-2W Series

2w, fixed input, 3000Vdc isolated & regulated single output dc-dc converter



Product Program							
Certificate	Model	Eff (%)	Input		Output		
			Voltage(Vdc)		Vdc	mA	Max Capacitive Load (uF)
			Nominal	Range	Nominal	Max	
CE/RoHS	IF0505S-2W	79	5	4.75-5.25	5	400	220
	IF0512S-2W	79			12	167	
CE/RoHS	IF1205S-2W	80	12	11.4-12.6	5	400	220
	IF1212S-2W	83			12	167	
CE/RoHS	IF2405S-2W	81	24	22.8-25.2	5	400	220
	IF2412S-2W	79			12	167	
CE/RoHS	IF4805S-2W	71	48	45.6-50.4	5	400	220
	IF4812S-2W	75			12	167	

Dimensions First Angle Proj

Pin	IF_S-2W
1	ViN
2	GND
5	0V
7	+Vo

Note:
 All size units mm,
 Diameter of all terminal 0.5mm;
 Distance between all adjacent terminal 2.54mm;
Isolation: 3000Vdc
Weight: 2.4g

File Release Notes

DBN-201 Technical Data Sheet Version



No.	Version	Date	Description
1	V0	2011/11/01	First release
2	A/0	2016/07/01	Change document version definition
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.

All Delus Corporation's products are manufactured, assembled and tested utilizing ISO9001 quality systems.
For information regarding Delus Corporation and its products please see website: www.delus-power.com

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