

Features

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

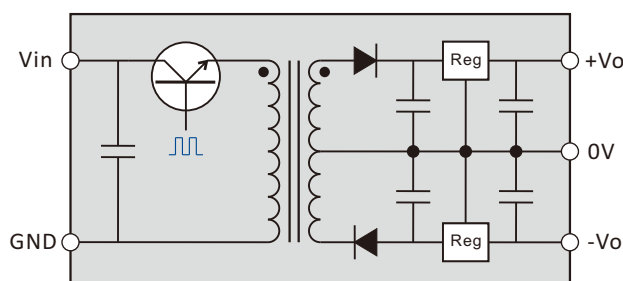
Typical Applications

- ◆ 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

IA/IE-1W series built-in high efficiency LDO linear regulator, excellent ripple index, is A/E-1W series upgraded version, more suitable indicator of the ripple requirements of high precision applications, for example to the op amp power supply. IA and IE series also offers a variety of standard voltage combinations, isolation voltage 1.5/3.0kVdc two grades.

Functional Diagram



Selection Guide

IA0505S-1W				
Product Series	Input Voltage	Output Voltage	Package Style	Rated Power
IA: isolated 1.5kVdc dual IE: isolated 3.0kVdc dual	05 = 5Vdc 12 = 12Vdc 24 = 24Vdc 48 = 48Vdc	05 = ±5Vdc 09 = ±9Vdc 12 = ±12Vdc 15 = ±15Vdc	S: single in-line	1W = 1Watt

IA-1W & IE-1W Series

1w, fixed input, isolated & regulated dual output dc-dc converter



Output Specifications

Item	Test Conditions	Min	Typ	Max	Units
Output Power	Ta=-40-+71°C	0.1		1	W
Line Regulation	For vin change of ±5%			±0.25	%
Load Regulation	Nominal, 10%-100% load			±1	
Output Voltage Accuracy	Nominal, 100% load			±3	
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	Continuous, Automatic Recovery				

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			

Common Specification

Item	Test Conditions	Min	Typ	Max	Units
Operating Temperature	Ta>71°C Derating	-45		+85	°C
Maximum Case Temp.				60	
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 Maximum	05V input models	-0.7~7Vdc
	12V input models	-0.7~15Vdc
	24V input models	-0.7~28Vdc
	48V input models	-0.7~54Vdc

Application Note

1. Input polarity protection

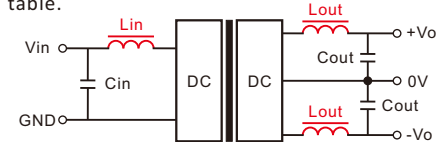
The series product no positive & negative reverse polarity protection, solution is the input series in a diode.

2. Requirement On Output Load

To ensure this module 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.

3. 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 10-100uF 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			
	±5V	±9V	±12V	±15V
10~100uF	4.7uF	2.2uF	1uF	0.47uF
				0.47uF

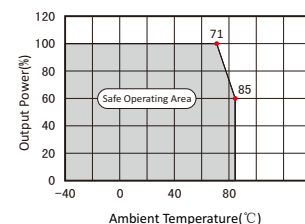
It's not recommended to connect any external capacitor in the application field with less than 0.5 watt output.

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.

4. On derating

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

Temperature Derating Curve



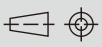
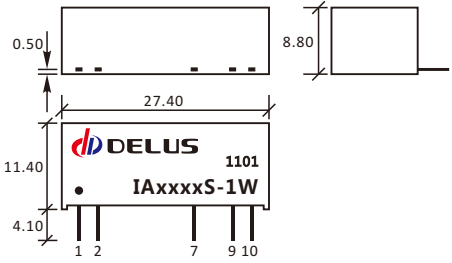
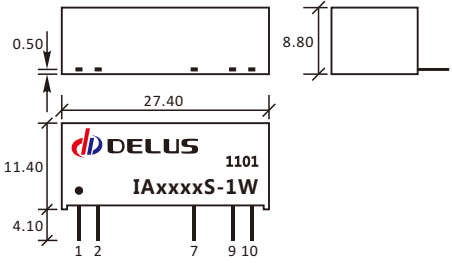
5. This product cannot be used in parallel, can not hot-swappable.

IA_S-1W & IE_S-1W Series

1w, fixed input, isolated & regulated dual output dc-dc converter



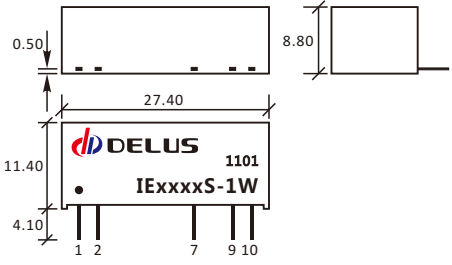
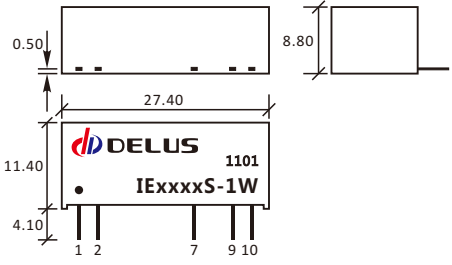
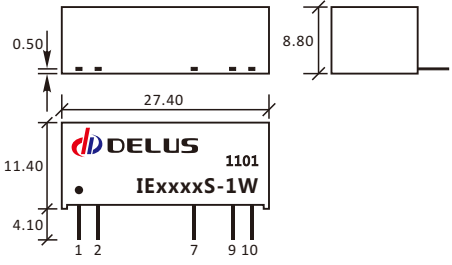
Product Program

Model	Input		Output				Eff (%)	Certificate	Mechanical Dimensions First Angle Projection						
	Voltage(Vdc)		Voltage(Vdc)	Current(mA)		Ripple (mVp-p)									
	Nominal	Range	Nominal	Max	Min										
IA0505S-1W	5	4.75~5.25	±5	±100	±10		61								
IA0509S-1W			±9	±56	±6		62								
IA0512S-1W			±12	±42	±5		63								
IA0515S-1W			±15	±33	±4		65								
IA1205S-1W	12	11.4~12.6	±5	±100	±10		61								
IA1209S-1W			±9	±56	±6		62								
IA1212S-1W			±12	±42	±5		63								
IA1215S-1W			±15	±33	±4		65								
IA2405S-1W	24	22.8~25.2	±5	±100	±10		61		Pin	1	2	7	9	10	
IA2409S-1W			±9	±56	±6		62		Function	Vin	GND	+Vo	-Vo	0V	
IA2412S-1W			±12	±42	±5		63								
IA2415S-1W			±15	±33	±4		65								

Isolation: 1500Vdc

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

Pin	1	2	7	9	10
Function	Vin	GND	+Vo	-Vo	0V

IE0505S-1W	5	4.75~5.25	±5	±100	±10		61							
IE0509S-1W			±9	±56	±6		62							
IE0512S-1W			±12	±42	±5		63							
IE0515S-1W			±15	±33	±4		65							
IE1205S-1W	12	11.4~12.6	±5	±100	±10		61							
IE1209S-1W			±9	±56	±6		62							
IE1212S-1W			±12	±42	±5		63							
IE1215S-1W			±15	±33	±4		65							
IE2405S-1W	24	22.8~25.2	±5	±100	±10		61							
IE2409S-1W			±9	±56	±6		62							
IE2412S-1W			±12	±42	±5		63							
IE2415S-1W			±15	±33	±4		65							

Isolation: 3000Vdc

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

Pin	1	2	7	9	10
Function	Vin	GND	+Vo	-Vo	0V

File Release Notes

DBN-203 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