IA series

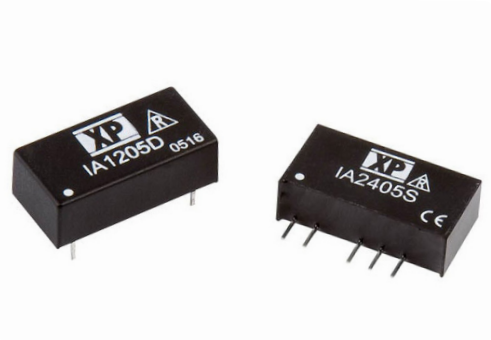
XP Power

1W

DC-DC converters

The IA series of compact SIP7 and DIP14 format DC-DC converters offer a cost effective, versatile and convenient solution to many applications within electronic circuits.

With 1kV isolation, these dual output converters can be used for example in process control, instrumentation and logic circuits.



Features

- Unregulated dual outputs
- ±10% input range
- Dual outputs ±3.3 to ±24VDC
- SIP7 or DIP14 packages
- Industry standard pinout
- 1.0kVDC isolation
- -40°C to +85°C operating temperature
- 3 year warranty

Applications

Robotics
Instrumentation
Technology
Industrial
Process control

Dimensions

See mechanical details

More resources

Click the link or scan the code

→ xppower.com

Models & ratings

Model number[1]	Input voltage	Output voltage	Output current[2]	Efficiency
IA0305S	3.3VDC	±5.0V	±100mA	66%
IA0503S	5VDC	±3.3 V	±151mA	65%
IA0505S		±5.0 V	±100mA	74%
IA0509S		±9.0 V	±55mA	78%
IA0512S		±12.0 V	±42mA	78%
IA0515S		±15.0 V	±33mA	80%
IA0524S		±24.0 V	±21mA	80%

Continued on page 2

Notes:

1. Replace 'S' in model number with 'D' for DIP package.
2. Outputs power-trade.

Models & ratings

Model number[1]	Input voltage	Output voltage	Output current[2]	Efficiency
IA1203S	12VDC	3.3VDC	±151mA	66%
IA1205S		5.0VDC	±100mA	75%
IA1209S		9.0VDC	±55mA	76%
IA1212S		12.0VDC	±42mA	78%
IA1215S		15.0VDC	±33mA	80%
IA1224S		24.0VDC	±21mA	76%
IA2403S	24VDC	3.3VDC	±151mA	68%
IA2405S		5.0VDC	±100mA	74%
IA2409S		9.0VDC	±55mA	76%
IA2412S		12.0VDC	±42mA	78%
IA2415S		15.0VDC	±33mA	78%
IA2424S		24.0VDC	±21mA	78%

Notes:

1. Replace 'S' in model number with 'D' for DIP package.
2. Outputs power-trade.

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Input voltage range	2.97		3.63	VDC	3.3V nominal
	4.50		5.50		5V nominal
	10.80		13.20		12V nominal
	21.60		26.40		24V nominal

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Output voltage	See models & ratings table				
Set accuracy			±3.0	%	At full load
Minimum load					No load wil not damage unit but may not meet all specifications
Line regulation			1.2	%	For 1% Vin charge
Load regulation			±10	%	20 to 100% (3.3 Vout ±20%)
Ripple & noise			75	mV pk-pk	20MHz bandwidth. Measured using 0.47µF ceramic capacitor.
Maximum capacitive load			100	µF	
Temperature coefficient			0.02	%/°C	

General

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Efficiency				%	See models and ratings table
Isolation: input to output	1000			VDC	
Isolation resistance	10^9			Ω	
Isolation capacitance		60		pF	
Switching frequency		80		kHz	Variable
Mean time between failure		1.1		Mhrs	MIL-HDBK-217F, +25°C GB
Weight		2.3 (0.00507)		g (lb)	SIP
		2.6 (0.00573)			DIP
Water wash	0.00573				
Pin material	Alloy 42, solder coated nickel iron				
Case material	Non-conductive black plastic UL94V-0				
Potting material	Epoxy UL94V-0 rated				
Solder profile	Wavesolder 260°C max. 1.5mm from case 10s max				

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & conditions
Operating temperature	-40		+85	°C	
Storage temperature	-40		+125	°C	
Case temperature			+100	°C	
Cooling	Convection cooled				

Safety approvals

Certification	Standard	Notes & conditions
UL	UL60950-1 & CAN/CSA C22.2 No. 60950-1 UL62368-1 & CAN/CSA C22.2 No. 62368-1	
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

Emissions - EMC

Phenomenon	Standard	Test level	Notes & conditions
Conducted	EN55032	Class A	Class B / External Components

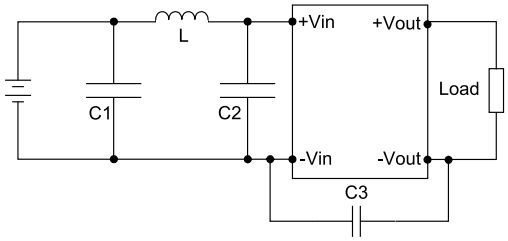
Immunity - EMC

Phenomenon	Standard	Test level	Criteria	Notes & conditions
ESD Immunity	EN61000-4-2	±6/±8kV	A	Contact/air discharge
Radiated immunity	EN61000-4-3	10 Vrms	A	
EFT/Burst	EN61000-4-4	2kV	A	With external components, see application notes
Surge	EN61000-4-5	±1kV	A	With external components, see application notes
Conducted immunity	EN61000-4-6	10Vrms	A	

Application notes

EMI filter

Input filter components (C1, L, C2, C3) are used to help meet conducted emissions requirement for the module. These components should be mounted as close as possible to the module; and all leads should be minimized to decrease radiated noise.



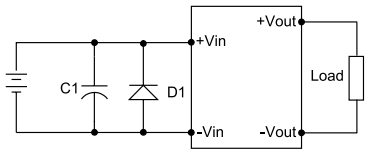
Model	C1	L	C2	C3
IA03XXX	1210, 2.2µF/100V	18µH		
IA05XXX				
IA15XXX				
IA24XXX			1210, 2.2µF/100V	1206, 470pF/2kV

Ripple & Noise Reduction - Add optional electrolytic 10µF output capacitor

EFT/surge filter

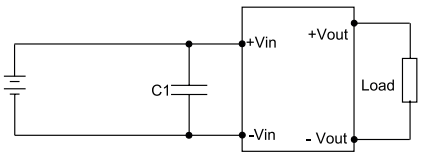
Input filter components (C1, D1) are used to help meet IEC61000-4-4 and IEC61000-4-5.

SIP



C1 = 2200µF, 100V

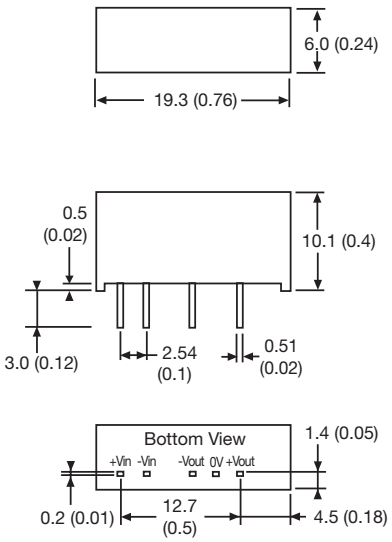
DIP



Input	D1
3.3V	SMAJ5A
5.0V	SMAJ6.5A
12.0V	SMAJ14A
15.0V	SMAJ18A
24.0V	SMAJ26A

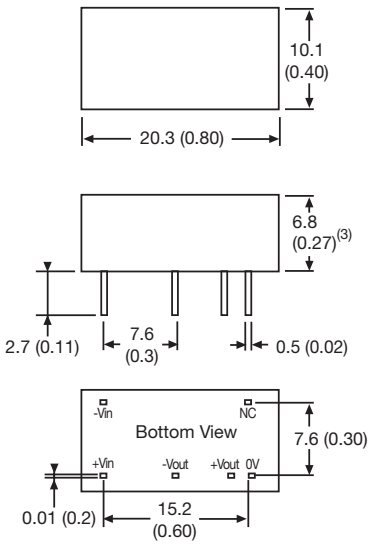
Mechanical details

SIP package



Pin	Connection
1	+Vin
2	-Vin
3	No pin
4	-Vout
5	Common
6	+Vout
7	No pin

DIP package



Pin	Connection
1	-Vin
7	NC
8	Common
9	+Vout
10	No pin
11	-Vout
14	+Vin

Notes:

1. All dimensions in mm (inches).
2. Weight: SIP 2.3g (0.00507 b), DIP 2.6g (0.00573lb)
3. Recommended hole size for pins is 0.8 (0.03) diameter.