

## IA\_KP-2W Series

FIXED INPUT ISOLATED & REGULATED  
2W OUTPUT DUAL OUTPUT  
24PIN DIP PACKAGE

**RoHS**  
multi-country patent protection

### FEATURES

- High Efficiency up to 71%
- Dual Output
- Small Footprint
- DIP Package Style
- Industry Standard Pinout
- UL94-V0 Package
- No Heat Sink Required
- 1KVDC Isolation
- Power Density 0.33W/cm<sup>3</sup>
- Temperature Range: -40°C~+85°C
- No External Component Required
- RoHS Compliance

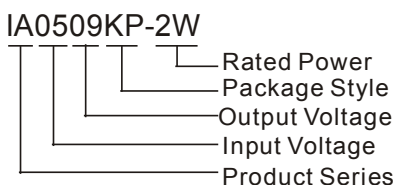
### APPLICATIONS

The IA\_KP-2W Series are specially designed for applications where a group of polar power supplies are isolated from the input power supply in a distributed power supply system on a circuit board.

These products apply to:

- 1) Where the voltage of the input power supply is fixed (voltage variation  $\leq \pm 5\%$ );
- 2) Where isolation is necessary between input and output (isolation voltage = 1000VDC);
- 3) Where the regulation of the output voltage and the output ripple noise are not demanded;

### MODEL SELECTION



PRODUCT PROGRAM							
Part Number	Input		Output			Efficiency (% Typ)	Package Style
	Voltage (VDC)		Voltage (VDC)	Current (mA)			
	Nominal	Range		Max	Min		
IA0509KP-2W	5	4.75~5.25	±9	±100	±10	61	DIP
IA0512KP-2W	5	4.75~5.25	±12	±83	±9	65	DIP
IA0515KP-2W	5	4.75~5.25	±15	±67	±7	69	DIP
IA1209KP-2W	12	11.4~12.4	±9	±110	±11	63	DIP
IA1212KP-2W	12	11.4~12.4	±12	±83	±9	66	DIP
IA1215KP-2W	12	11.4~12.4	±15	±67	±7	70	DIP
IA2409KP-2W	24	22.8~25.2	±9	±110	±11	65	DIP
IA2412KP-2W	24	22.8~25.2	±12	±83	±9	67	DIP
IA2415KP-2W	24	22.8~25.2	±15	±67	±7	71	DIP

COMMON SPECIFICATIONS	
Short circuit protection	1 second
Temperature rise at full load	25°C MAX, 15°C TYP
Cooling	Free air convection
Operating temperature range	-40°C~+85°C
Storage temperature range	-55°C ~+125°C
Lead temperature	300°C (1.5mm from case for 10 seconds)
Storage humidity range	≤ 95%
Case material	Plastic (UL94-V0)
MTBF	>3,500,000 hours

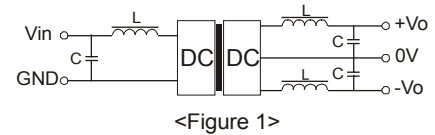
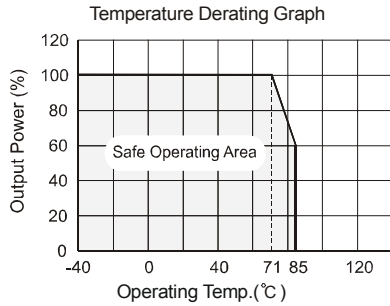
ISOLATION SPECIFICATIONS					
Item	Test conditions	Min	Typ	Max	Units
Isolation voltage	Tested for 1 minute	1000			VDC
Isolation resistance	Test at 500VDC	1000			MΩ

OUTPUT SPECIFICATIONS					
Item	Test conditions	MIN	TYP	MAX	Units
Output power		0.2		2	W
Line regulation	For Vin change of ±5%			0.25	%
Load regulation	10% to 100% full load			1	%
Output voltage accuracy	100% full load			±3	%
Temperature drift	100% full load			0.03	%/°C
Output ripple	20MHz Bandwidth		20	30	mVp-p
Output noise			75	150	
Switching frequency	Full load, nominal input		75		KHz

Note:

1. All specifications measured at TA=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
2. See below recommended circuits for more details.

## TYPICAL CHARACTERISTICS

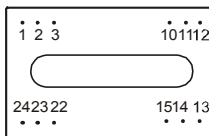


### Overload Protection

Under normal operating conditions, the output circuit of these products has no protection against over-current and short-circuits. The simplest method is to connect a self-recovery fuse in series at the input end or add a circuit breaker to the circuit.

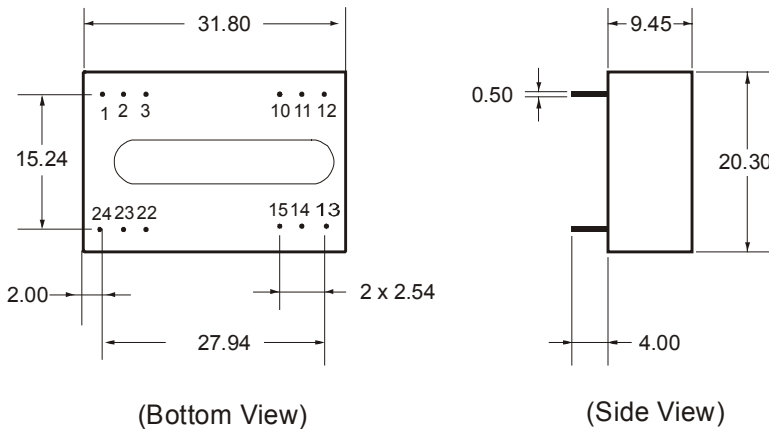
## PIN CONNECTIONS

Bottom View



Pin	Function
1,24	V <sub>in</sub>
12,13	GND
2,23	-V <sub>o</sub>
10,15,3,22	0V
11,14	+V <sub>o</sub>

## OUTLINE DIMENSIONS & RECOMMENDED FOOTPRINT DETAILS



Note: All Pins on a 2.54mm pitch; all pin diameters are 0.50mm; all dimensions in mm.

## APPLICATION NOTE

### Filtering

In some circuits which are sensitive to noise and ripple, a filtering capacitor may be added to the DC/DC output end and input end to reduce the noise and ripple. However, the capacitance of the output filter capacitor must proper. If the capacitance is too big, a startup problem might arise. For every channel of output, providing the safe and reliable operation is ensured, the greatest capacitance of its filter capacitor refer to the **External Capacitor Table**. To get an extremely low ripple, an "LC" filtering network may be connected to the input and output ends of the DC/DC converter, which may produce a more significant filtering effect. It should also be noted that the inductance and the frequency of the "LC" filtering network should be staggered with the DC/DC frequency to avoid mutual interference (see figure 1).

### Requirement on output load

To ensure this module can operate efficiently and reliably, a minimum load is specified for this kind of DC/DC converter in addition to a maximum load (namely full load). During operation, make sure the specified range of input voltage is not exceeded, 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, or use our company's products with a lower rated output power (IA\_KP -1W series).

External Capacitor Table

V <sub>in</sub>	External capacitor	V <sub>out</sub>	External capacitor
5VDC	4.7uF	5VDC	4.7uF
12VDC	2.2uF	9VDC	2.2uF
24VDC	1uF	12VDC	1uF
--	--	15VDC	0.47uF



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