

## IAS SERIES - 12 WATT



### DESCRIPTION

IAS DC/DC converters provide up to 12 watts of output power in an industry-standard package and footprint. With a maximum case temperature of 100°C, the IAS is well suited for the most demanding applications. The IAS features 1500 VDC isolation, short circuit, and overtemperature protection, as well as six-sided shielding. The IAS is available with optional enable and voltage trim pins. Please see the IAD series for dual output applications.

### TECHNICAL SPECIFICATIONS

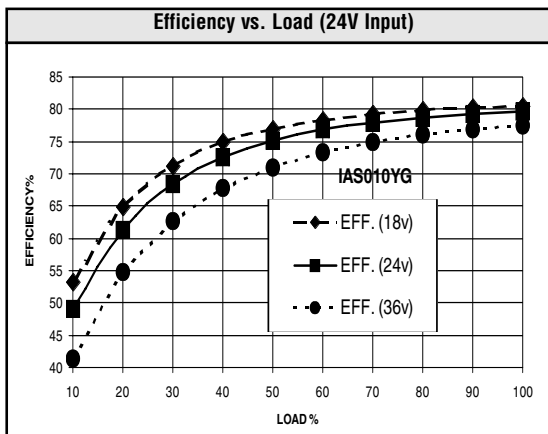
Input	
Voltage Range	
24 VDC Nominal	18 - 36 VDC
48 VDC Nominal	34 - 75 VDC
Reflected Ripple	25 mA
Input Reverse Input Current	Shunt Diode

Output	
Setpoint Accuracy	±1%
Line Regulation $V_{in}$ Min. - $V_{in}$ Max., $I_{out}$ Rated	±0.2% $V_{out}$
Load Regulation $I_{out}$ Min. - $I_{out}$ Max., $V_{in}$ Nom.	±0.5% $V_{out}$
Minimum Output Current	10 % $I_{out}$ Rated
Dynamic Regulation, Loadstep	25% $I_{out}$
Pk Deviation	4% $V_{out}$
Settling Time	500 mS
Voltage Trim Range	±10%
Short Circuit / Overcurrent Protection	Shutdown / Hiccup
Current Limit Threshold Range, % of $I_{out}$ Rated	110 - 140%

### FEATURES

- Industry Standard Package
- Industry Standard Footprint
- Up to 12W Output
- 100°C Case Operation
- Optional Trim and Enable
- Wide Range Input
- 1500V Isolation
- Short Circuit Protection

General	
Turn-On Time	10 mS
Remote Shutdown	Positive Logic
Switching Frequency	375 kHz
Isolation	
Input - Output	1500 VDC
Input - Case (24 $V_{in}$ )	1050 VDC
Output - Case (48 $V_{in}$ )	500 VDC
Temperature Coefficient	±0.03%/°C
Case Temperature	
Operating Range	-40 To +100°C
Storage Range	-55 To +115°C
Humidity Max., Non-Condensing	95%
Vibration, 3 Axes, 5 Min Each	5 g, 10 - 55 Hz
MTBF† (Bellcore Tr-nwt-000332)	2.1 X 10 <sup>6</sup> hrs
Safety	UL, cUL, VDE
Weight (Approx.)	1.0 oz



### Notes

† MTBF predictions may vary slightly from model to model.

Specifications typically at 25°C, normal line, and full load, unless otherwise stated.

Soldering Conditions: I/O pins, 260°C, ten seconds; fully compatible with commercial wave-soldering equipment.

Safety: Agency approvals may vary from model to model. Please consult factory for specific model information.

Units are water-washable and fully compatible with commercial spray or immersion post wave-solder washing equipment.

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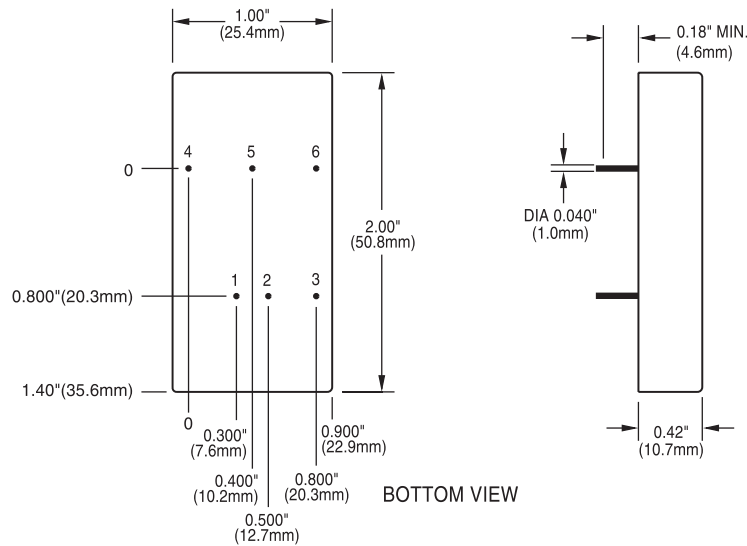
MODELS - (See the last page of Section for options.)

MODEL	INPUT VOLTAGE (VOLTS)	INPUT VOLTAGE RANGE (VOLTS)	MAXIMUM INPUT CURRENT (AMPS)*	OUTPUT VOLTAGE (VOLTS)	RATED OUTPUT CURRENT (AMPS)	RIPPLE & NOISE pk-pk (mV)	TYPICAL EFFICIENCY**
IAS012YG	24	18-36	0.81	12	1.0	120	85%
IAS012YH	24	18-36	0.81	12	1.0	120	85%
IAS012YJ	24	18-36	0.79	15	0.8	150	86%
IAS006ZE	48	34-75	0.26	3.3	2.0	75	75%
IAS010ZG	48	34-75	0.36	5	2.0	75	81%
IAS012ZH	48	34-75	0.43	12	1.0	120	85%
IAS012ZJ	48	34-75	0.43	15	0.8	150	86%

NOTES: \* Maximum input current at minimum input voltage, maximum rated output power.

\*\* At nominal  $V_{in}$ , rated output.

## MECHANICAL DRAWING



Thermal Impedance	
Natural Convection	15.4 °C/W
100 LFM	12.2 °C/W
200 LFM	9.3 °C/W
300 LFM	7.4 °C/W
400 LFM	6.4 °C/W

Note:  
Thermal impedance data is dependent on many environmental factors. The exact thermal performance should be validated for specific application.

Pin	Function
1	+V <sub>in</sub>
2	-V <sub>in</sub>
3	No Pin (Shutdown)
4	+V <sub>out</sub>
5	No Pin (Trim)
6	-V <sub>out</sub>

Tolerances	
Inches:	(Millimeters)
.XX ± 0.020	.X ± 0.5
.XXX ± 0.010	.XX ± 0.25
Pin:	
± 0.002	± 0.05
Case:	
+ 0.04, - 0.00	+ 1.0, - 0.00

(Dimensions as listed unless otherwise specified.)

## OPTIONS

When ordering equipment options, use the following suffix information. Select the option(s) that you prefer and add them to the model number. Example ordering options are located below the options table.

OPTION	SUFFIX	APPLICABLE SERIES	REMARKS
Negative Logic	N	HAS, HBD, HBS, HES, HLS, LES, QBS, QES, QLS, TES, TQD	TTL "Low" Turns Module ON TTL "High" Turns Module OFF
Lucent-Compatible Trim	T	HAS, HBD, HBS, HES, HLS, QBS, QES, QLS	
Terminal Strip	TS	XWS, XWD, XWT	
Trim	1	IAS, LES	
Enable	2	IAD, IAS, LES, SMS	
Trim and Enable	3	IAS, LES	
Current Share	4	SMS	
Headerless	Y	Encapsulated EWS, IWS, OWS	
<b>PIN LENGTH AND HEATSINK OPTIONS</b>			Standard Pin Length is 0.180" (4.6mm)
0.110" (2.8mm) Pin Length	8	All Units (Except SMS)	
0.150" (3.8mm) Pin Length	9	All Units (Except SMS)	
0.24" (6.1mm) Horizontal Heatsink	1H	All Units (Except DIP, HLS, HLD, QLS, SIP, SM, TLD, and TKD Packages)	Includes Thermal Pad
0.24" (6.1mm) Vertical Heatsink	1V	All Units (Except DIP, HLS, HLD, QLS, SIP, SM, TLD, and TKD Packages)	Includes Thermal Pad
0.45" (11.4mm) Horizontal Heatsink	2H	All Units (Except DIP, HLS, HLD, QLS, SIP, SM, TLD, and TKD Packages)	Includes Thermal Pad
0.45" (11.4mm) Vertical Heatsink	2V	All Units (Except DIP, HLS, HLD, QLS, SIP, SM, TLD, and TKD Packages)	Includes Thermal Pad
0.95" (24.1mm) Horizontal Heatsink	3H	All Units (Except DIP, HLS, HLD, QLS, SIP, SM, TLD, and TKD Packages)	Includes Thermal Pad
0.95" (24.1mm) Vertical Heatsink	3V	All Units (Except DIP, HLS, HLD, QLS, SIP, SM, TLD, and TKD Packages)	Includes Thermal Pad

Example Options:

HBS050ZG-ANT3V = HBS050ZG-A with negative logic, Lucent-compatible trim, and 0.95" vertical heatsink.

LES015YJ-3N = LES015YJ with optional trim and enable, negative logic.

QBS066ZG-AT8 = QBS066ZG-A with Lucent compatible trim and 0.110" pin length.

**NUCLEAR AND MEDICAL APPLICATIONS** Power-One products are not authorized for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems without the express written consent of the President of Power-One, Inc.

**TECHNICAL REVISIONS** The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.

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