

## 150W, 40A Non-Isolated SMT Point-Of-Load

<https://product.tdk.com/en/power/iAH>  
[www.emea.lambda.tdk.com/iAH](http://www.emea.lambda.tdk.com/iAH)



Industrial



Test



COMM



Broadcast

The iAH series of non-isolated Point-Of-Load (POL) converters provide localized voltage conversion from either a 5V or 12V bus. With its wide input and wide output voltage adjustment range, this compact-sized DC-DC module can deliver up to 150W making it a versatile solution for various board mount power requirements.

### Features

- DOSA Compatible Footprint
- Surface Mountable and Reflow Solder Compatible
- Constant Switching Frequency
- No External Loop Tuning Components Needed
- Excellent Transient Response

### Benefits

- Established Industry Footprint / Multisource
- Ease of Manufacturing and Assembly
- Predictable EMI
- Simplifies Deployment and Saves Board Space
- Stable / Reliable Output During Dynamic Load

### Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	On/Off Polarity	Efficiency, Full Load (typ)
<a href="#">iAH12040A007V-006-R</a>	3.5 - 17	0.7 - 5.0	40	150	Pos	96%
<a href="#">iAH12040A007V-007-R</a>	3.5 - 17	0.7 - 5.0	40	150	Neg	96%

### Related Products

Type	Part Number	Description
Isolated DC-DC Converter	<a href="#">iQL</a>	300W, Input 36-75V or 18-36V, Isolated Quarter Brick
Isolated DC-DC Converter	<a href="#">iQG</a>	300W-504W, Input 36-75V, Isolated Quarter Brick
Isolated DC-DC Converter	<a href="#">iEH</a>	300W, Input 36-75V, Isolated Eighth Brick
Isolated DC-DC Converter	<a href="#">GQA</a>	120W Industrial, Input 9-36V, Isolated Quarter Brick
Non-Isolated DC-DC Converter	<a href="#">iBH</a>	80W/20A, 3.5-14Vin, 0.7 - 5.5Vout, DOSA Compatible
Non-Isolated DC-DC Converter	<a href="#">iCH</a>	85W/12A, 4.5-14Vin, 0.7 - 8.5Vout, DOSA Compatible
Input Filter	<a href="#">iDQ</a>	75V / 10A Filter
Evaluation Board	<a href="#">FQX-HQA-EVK-D0</a>	Evaluation board (no modules) accepting standard Eighth or Quarter brick and FQx or iDQ input filters

Specifications		
Model		iAH
<b>Input</b>		
Input Voltage Range	Vdc	3.5 - 17
Input Current (max)	A	35
Turn-On Input Voltage (typ)	Vdc	2.7
Turn-Off Input Voltage (typ)	Vdc	2.5
Efficiency (typical)	%	96%
Safety Certifications and Markings	-	IEC/UL/CSA/EN 62368-1, 60950-1, CE Mark and UKCA Mark
<b>Output</b>		
Output Voltage Initial Setpoint	%	± 2
Output Voltage Tolerance	%	± 3
Line Regulation (typ)	mV	4
Load Regulation (typ)	mV	7
Output Current (max)	A	40 <sup>(1)</sup>
		30 <sup>(1)</sup>
Output Power (max)	W	150
External Load Capacitance	uF	200 - 2000
Ripple & Noise (typ)	mVpp	20
Transient Response		500 mV, 100 µs (25% to 75% step Load; 10A/µs)
Switching Frequency (fixed)	kHz	600
Overcurrent Protection Threshold (Hiccup)	A	50
<b>Environmental</b>		
Operating Temperature (Tc)	°C	-40 to 115
Storage Temperature	°C	-55 to 125
Humidity (non condensing)	%RH	10 - 95
Cooling	-	Convection or forced air (See product specifications for derating)
Isolation Voltage (Input to Output)	Vdc	NA
Isolation Resistance	MΩ	NA
Shock	-	MIL-STD-202G, Method 213B, Test Condition I
Vibration		MIL-STD-202G, Method 201A
<b>Other</b>		
Weight (max)	g	12
Size (LxWxH)	inch	1.3 x 0.53 x 0.4
	mm	33.0 x 13.5 x 10.2
Moisture Sensitivity Level	-	MSL 2
MTBF - Telcordia SR-332 (100% Load, 40°C)	MHrs	> 12
Warranty	yrs	3

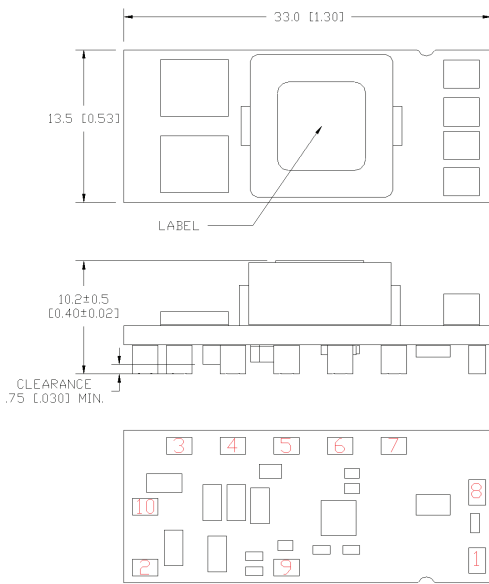
## Notes:

(1) Observe maximum power limit.

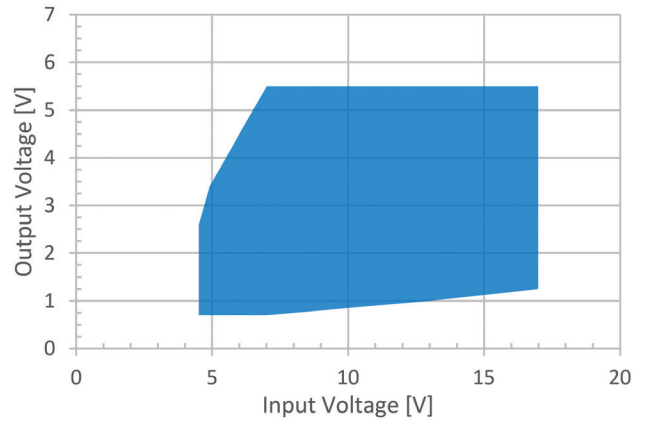
(2) See the website for detailed product [specifications](#).

## Mechanical Specification

Dimensions are in mm [in]. Unless otherwise specified, tolerances are:  
 $x.x \pm 0.5$  [0.02],  $x.xx \pm 0.25$  [[0.010]



## Output vs. Input Voltage Operating Range

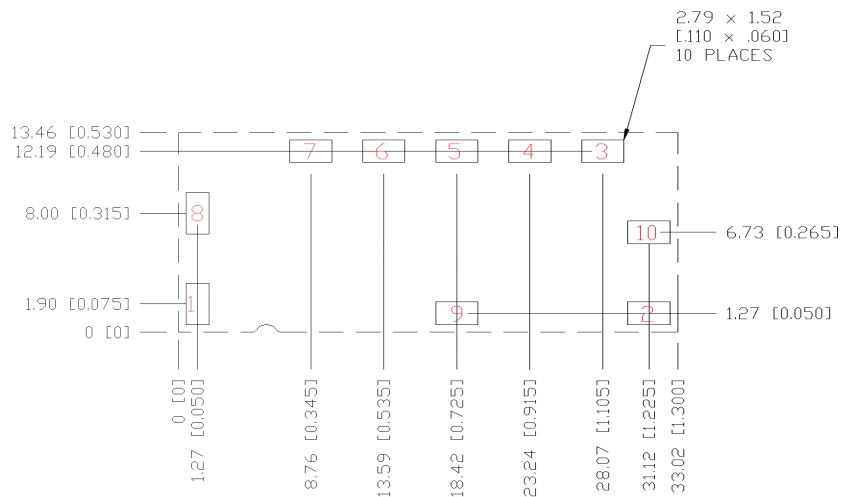


## PIN Assignment

Pin	Function	Pin	Function
1	ON / OFF	6	TRIM
2	VIN	7	SENSE (+)
3	SEQ * (option)	8	SENSE (-) (Reserved) *
4	GND	9	PWR GOOD
5	VOUT	10	SYNC (Reserved) *

\* Contact Technical Support. SMT pins are not populated

## Recommended PCB Hole Pattern





**TDK-Lambda France SAS**

Tel: +33 1 60 12 71 65  
 ttf.fr.powersolutions@tdk.com  
 www.emea.lambda.tdk.com/fr



**Italy Sales Office**

Tel: +39 02 61 29 38 63  
 ttf.it.powersolutions@tdk.com  
 www.emea.lambda.tdk.com/it



**Netherlands**

ttf.nl.powersolutions@tdk.com  
 www.emea.lambda.tdk.com/nl



**TDK-Lambda Germany GmbH**

Tel: +49 7841 666 0  
 tlg.powersolutions@tdk.com  
 www.emea.lambda.tdk.com/de



**Austria Sales Office**

Tel: +43 2256 655 84  
 tlg.at.powersolutions@tdk.com  
 www.emea.lambda.tdk.com/at



**Switzerland Sales Office**

Tel: +41 44 850 53 53  
 tlg.ch.powersolutions@tdk.com  
 www.emea.lambda.tdk.com/ch



**Nordic Sales Office**

Tel: +45 8853 8086  
 tlg.dk.powersolutions@tdk.com  
 www.emea.lambda.tdk.com/dk



**TDK-Lambda UK Ltd.**

Tel: +44 (0) 12 71 85 66 66  
 tlu.powersolutions@tdk.com  
 www.emea.lambda.tdk.com/uk



**TDK-Lambda Ltd.**

Tel: +9 723 902 4333  
 tti.powersolutions@tdk.com  
 www.emea.lambda.tdk.com/il-en



**TDK-Lambda Americas**

Tel: +1 800-LAMBDA-4 or 1-800-526-2324  
 tia.powersolutions@tdk.com  
 www.us.lambda.tdk.com



**TDK Electronics do Brasil Ltda**

Tel: +55 11 3289-9599  
 sales.br@tdk-electronics.tdk.com  
 www.tdk-electronics.tdk.com/en



**TDK-Lambda Corporation**

Tel: +81-3-6778-1113  
 www.jp.lambda.tdk.com



**TDK-Lambda (China) Electronics Co. Ltd.**

Tel: +86 21 6485-0777  
 tlc.powersolutions@tdk.com  
 www.lambda.tdk.com.cn



**TDK-Lambda Singapore Pte Ltd.**

Tel: +65 6251 7211  
 tis.marketing@tdk.com  
 www.sg.lambda.tdk.com



**TDK India Private Limited, Power Supply Division**

Tel: +91 80 4039-0660  
 mathew.philip@tdk.com  
 www.sg.lambda.tdk.com

