

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

<https://product.tdk.com/en/power/iAH>
www.emea.lambda.tdk.com/iAH



Industrial



Test



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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)
iAH12040A007V-006-R	3.5 - 17	0.7 - 5.0	40	150	Neg	96%
iAH12040A007V-007-R	3.5 - 17	0.7 - 5.0	40	150	Pos	96%

Related Products

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

Specifications		
Model		iAH
Input		
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
Output		
Output Voltage Initial Setpoint	%	± 2
Output Voltage Tolerance	%	± 3
Line Regulation (typ)	mV	4
Load Regulation (typ)	mV	7
Output Current (max)	A	40 ⁽¹⁾
		30 ⁽¹⁾
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
Environmental		
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
Other		
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

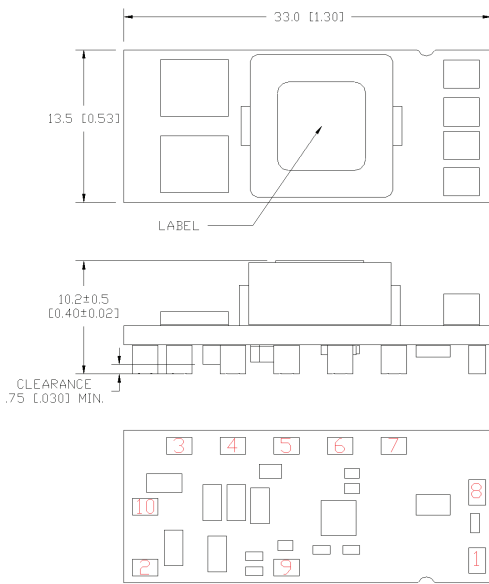
Notes:

(1) Observe maximum power limit.

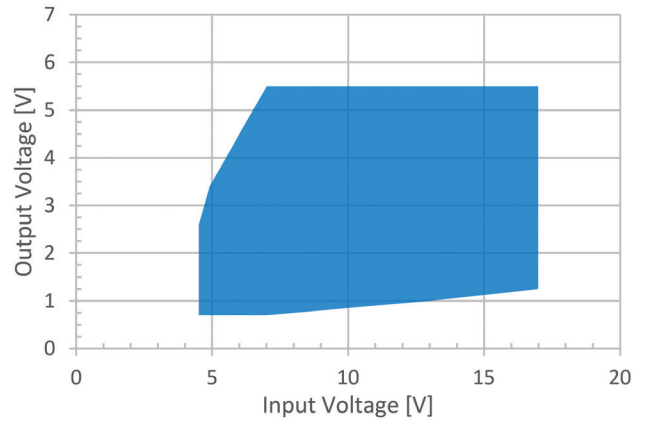
(2) See the website for detailed product [specifications](#).

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

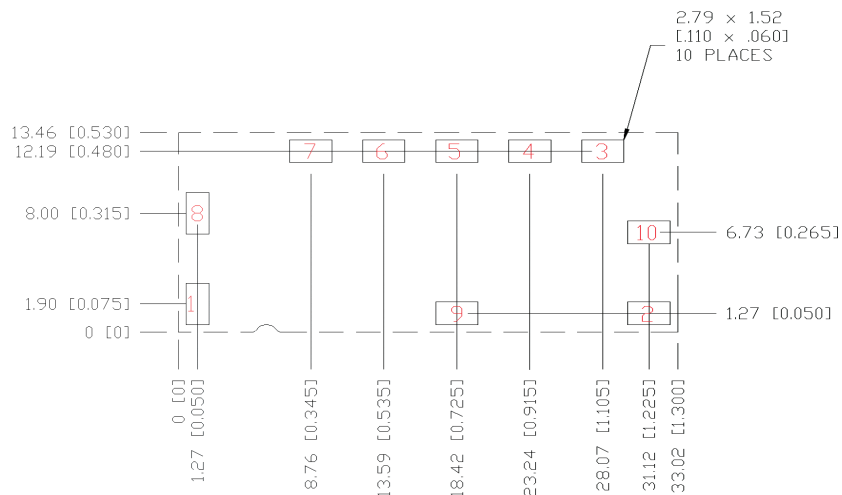


PIN Assignment

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





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