

300W, 36 to 75V Input Isolated DC-DC Eighth Brick

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



Industrial



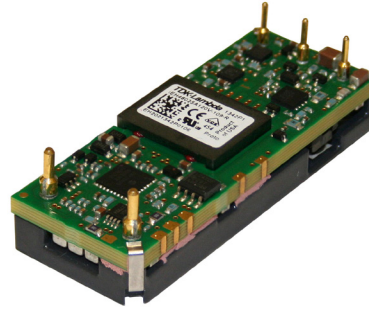
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The iEH series of isolated DC-DC converters deliver up to 300W in a compact and high performance eighth brick footprint. Available in 10.8V or 12V outputs with efficiencies up to 94.6%, these fully regulated Intermediate Bus Converters (IBC) feature very high, true useable power in high ambient temperatures. This makes them ideal for driving Non-Isolated Point-Of-Load (POL) converters in Distributed Power Architectures (DPA), commonly deployed in data communications, computing and storage applications. The iEH is available in an open frame format or with an integral base-plate for conduction cooling.

Features

- High Operating Efficiency up to 94.6%
- Open Frame or Baseplate Construction
- 10.8V or 12V Intermediate Bus Voltage
- Constant Switching Frequency
- Monotonic Start-Up Into a Pre-Bias Output

Benefits

- Reduces Heat Losses/Dissipation in System
- Mounting Flexibility for Low Profile or Conduction Cooling
- Optimized Distributed Power Architecture (DPA) for Driving Point-Of-Loads (POL)
- Predictable EMI
- Reliable and Stable Output in Multi-Load Conditions

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	On/Off Polarity	Pin Length (inch)	Baseplate (-1xx-R Suffix)	Droop Load Share
iEH48028A108V-103-R *	36 - 75	10.8	28	300	Neg	0.145	Yes	No
iEH48028A108V-109-R	36 - 75	10.8	28	300	Neg	0.190	Yes	No
iEH48025A120V-003-R *	36 - 75	12	25	300	Neg	0.145	No	No
iEH48025A120V-103-R *	36 - 75	12	25	300	Neg	0.145	Yes	No
iEH48025A120V-107-R *	36 - 75	12	25	300	Neg	0.190	Yes	No
iEH48025A120V-109-R	36 - 75	12	25	300	Neg	0.190	Yes	No

* Non Latching OVP (Over Voltage Protection)

Preferred option

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	iEA	78W, 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		iEH48028A108V-xxx-R	iEH48025A120V-xxx-R
Input			
Input Voltage Range	Vdc	36 - 75	36 - 75 (1)
Input Transient (100 ms)	Vdc		100
Input Current (max)	A	9	8.5
Turn-On Input Voltage (typ)	Vdc		34.5
Turn-Off Input Voltage (typ)	Vdc		32.5
Efficiency (typical)	%	94.0	94.6
Safety Certifications and Markings	-	IEC/UL/CSA/EN 62368-1, 60950-1, CE Mark and UKCA Mark	
Output			
Output Voltage Initial Setpoint	Vdc	10.65 - 10.85	11.89 - 12.11
Output Voltage Tolerance	Vdc	10.48 - 11.02	11.76 - 12.24
Line Regulation (typ)	mV	25	30
Load Regulation (typ)	mV	60	30
External Load Capacitance	uF	488 - 3300	
Ripple & Noise (typ)	mVpp	85	60
Switching Frequency (fixed)	kHz	140	150
Overcurrent Protection Threshold (Hiccup)	A	36	29.5
Over Voltage Protection (Latching)	Vdc	13.1	14.8
Over Temperature Protection	-	Auto recovery	
Environmental			
Operating Temperature (Tc)	°C	-40 to 124	-40 to 130
Storage Temperature	°C	-55 to 125	
Humidity (non condensing)	%RH	10 - 95	
Cooling	-	Conduction, convection or forced air (See product specifications for derating)	
Isolation Voltage (Input to Output)	Vdc	2250	
Isolation Voltage (Input to Baseplate)	Vdc	1500	
Isolation Resistance	MΩ	≥ 15	
Shock	-	50g; 6ms half-sine; three axes; MIL-STD-202G Method 213B	
Vibration	-	5 to 50 Hz (0.5g); 50 to 500 Hz (1.5g); three axes; GR-63-CORE, Issue 3	
Other			
Weight (max)	g	50	
Size (LxWxH)	inch	2.3 x 0.9 x 0.522	
	mm	58.42 x 22.86 x 13.26	
MTBF - Telcordia SR-332 (100% Load, 40°C)	MHrs	> 3	
Warranty	yrs	3	

Notes

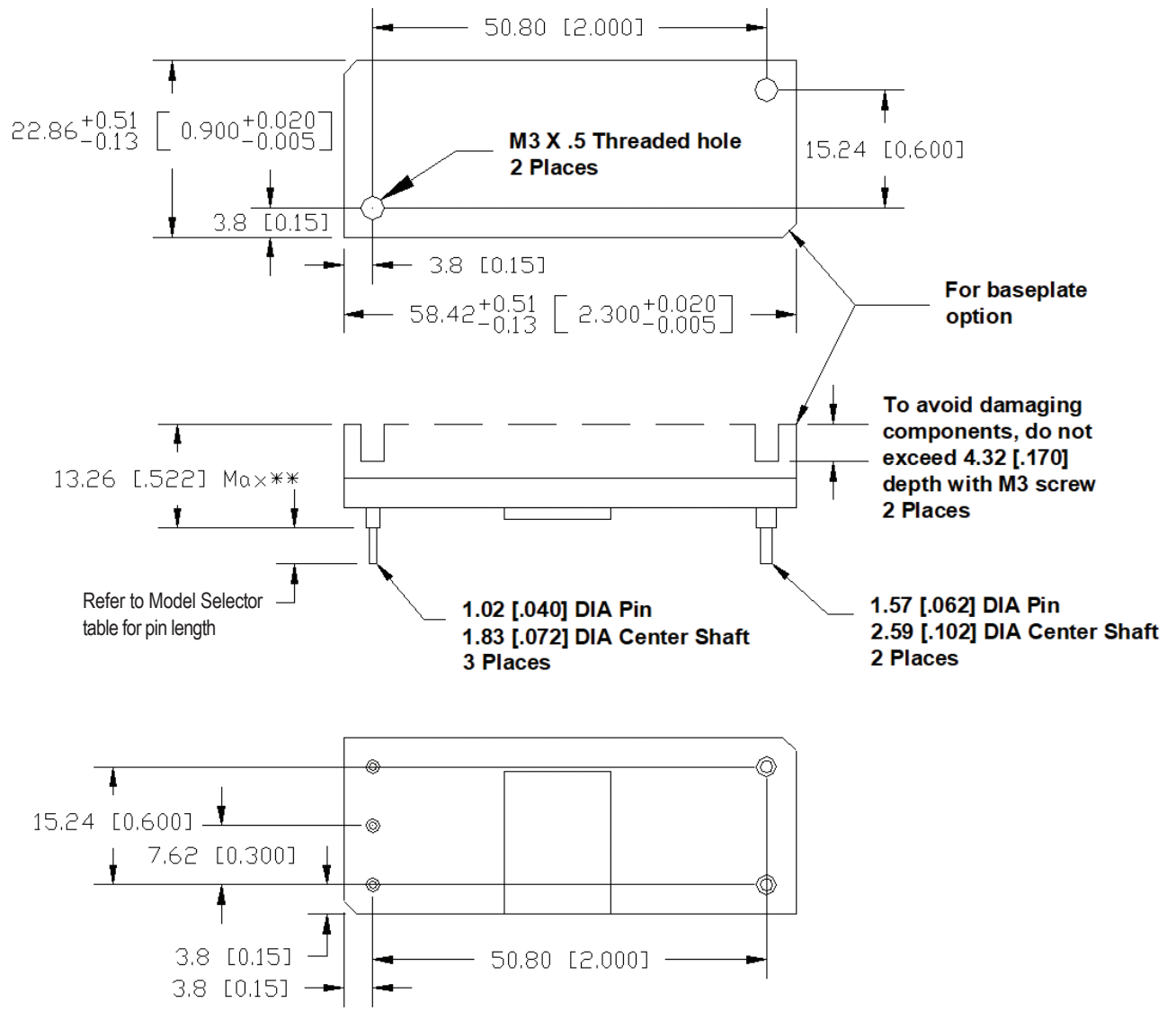
(1) When operating below 40V input, the module will operate but the load regulation may be out of specification.

(2) See website for detailed product specifications ([10.8V @ 28A](#), [12V @ 25A](#))

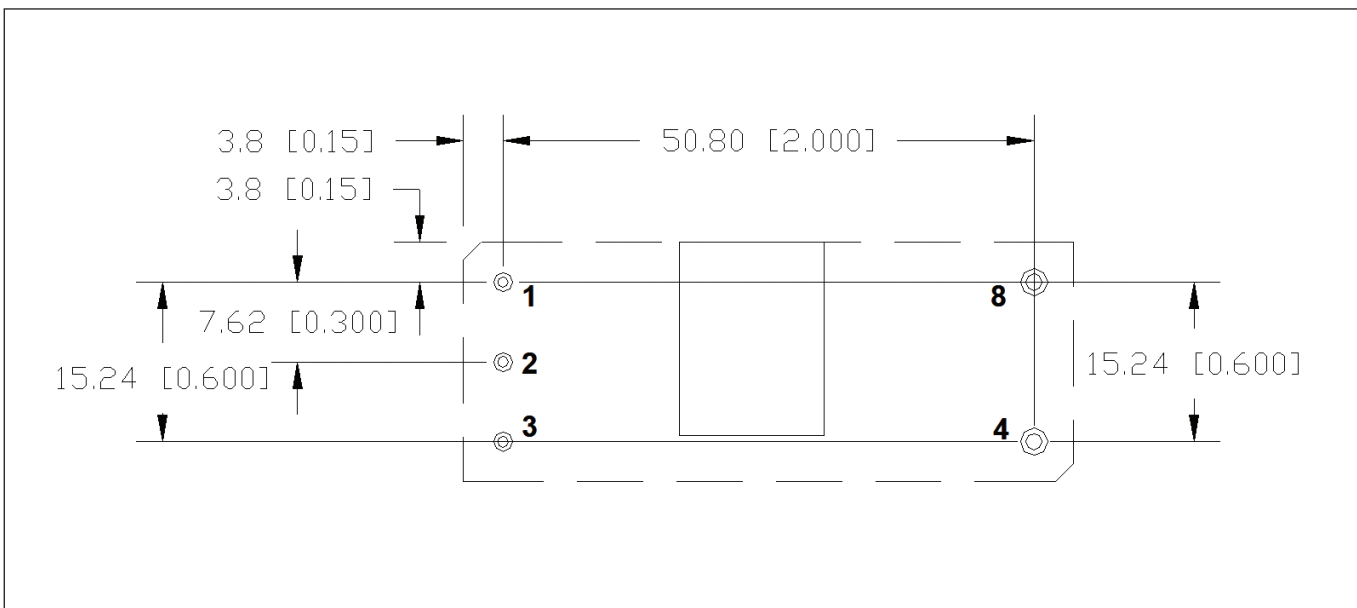
Mechanical Specification

Dimensions are in mm [in].

Unless otherwise specified tolerances are: $x.x \pm 0.5$ [0.02], $x.xx$ and $x.xxx \pm 0.25$ [0.010]



Recommended PCB Hole Pattern



PIN Assignment

Pin	Function	Pin	Function
1	Vin(+)	5	None
2	On/Off	6	None
3	Vin(-)	7	None
4	Vo(-)	8	Vo(+)

Pin base material is copper with gold plating.



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