

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

<https://product.tdk.com/en/power/iEH>  
[www.emea.lambda.tdk.com/iEH](http://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 |
|---------------------------------------|-------------------|--------------------|---------------------|-------------------|-----------------|-------------------|---------------------------|------------------|
| <a href="#">iEH48028A108V-103-R</a> * | 36 - 75           | 10.8               | 28                  | 300               | Neg             | 0.145             | Yes                       | No               |
| <a href="#">iEH48028A108V-109-R</a>   | 36 - 75           | 10.8               | 28                  | 300               | Neg             | 0.190             | Yes                       | No               |
| <a href="#">iEH48025A120V-003-R</a> * | 36 - 75           | 12                 | 25                  | 300               | Neg             | 0.145             | No                        | No               |
| <a href="#">iEH48025A120V-103-R</a> * | 36 - 75           | 12                 | 25                  | 300               | Neg             | 0.145             | Yes                       | No               |
| <a href="#">iEH48025A120V-107-R</a> * | 36 - 75           | 12                 | 25                  | 300               | Neg             | 0.190             | Yes                       | No               |
| <a href="#">iEH48025A120V-109-R</a>   | 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     | <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="#">iEA</a>            | 78W, 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                            |      | iEH48028A108V-xxx-R  | iEH48025A120V-xxx-R |
|---|------|--|---------------------|
| <b>Input</b>                              |      |  |                     |
| 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                          |                     |
| <b>Output</b>                             |      |  |                     |
| 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  |                     |
| <b>Environmental</b>                      |      |  |                     |
| 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        |                     |
| <b>Other</b>                              |      |  |                     |
| 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

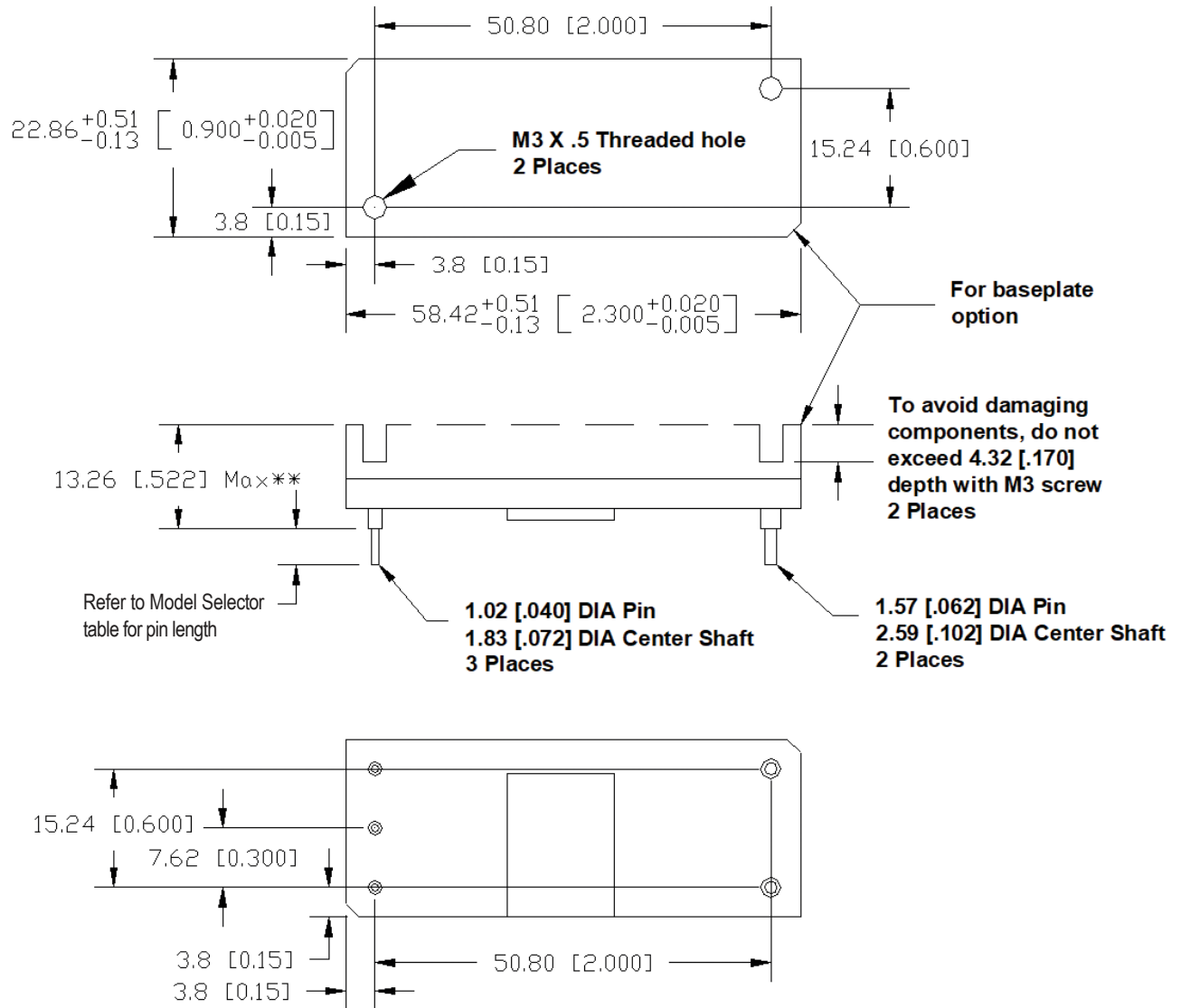
(1) When operating below 40V input, the module will operate but the load regulation may be out of specification.

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

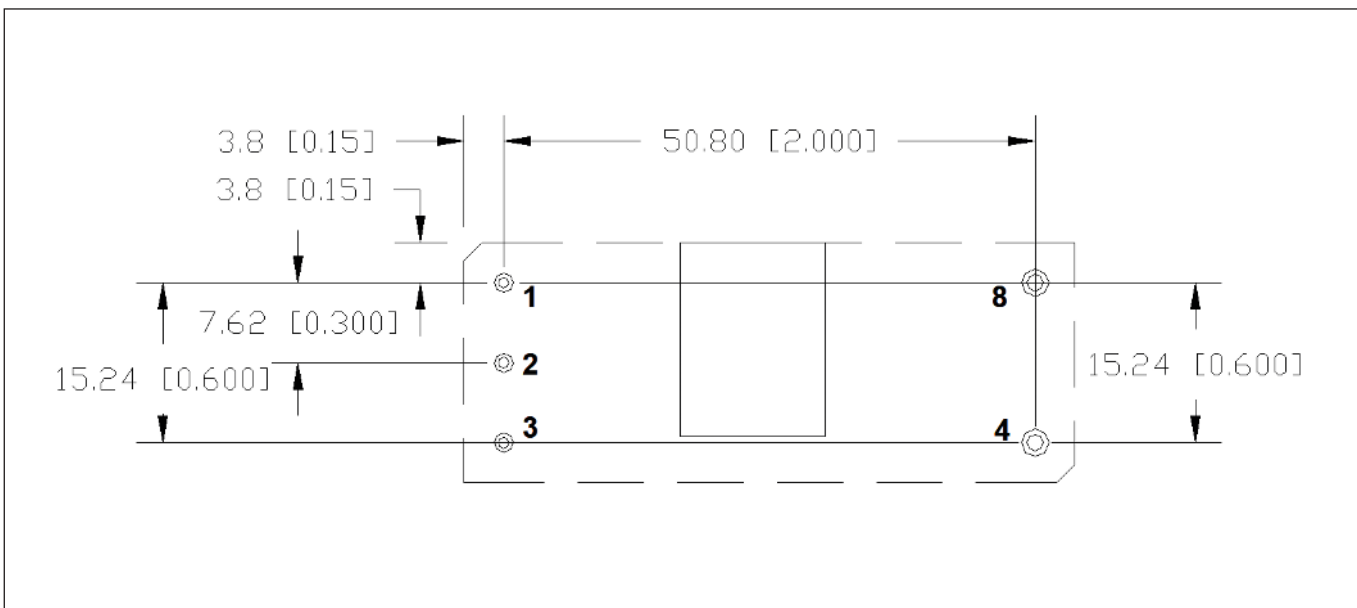
**Mechanical Specification**

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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