The iQK series of isolated DC-DC converters provide a fully regulated 11.2V output. Rated at 1008W, the quarter brick sized module can deliver up to 90A output current. Its 48 to 56Vdc input range is suitable for use with regulated 48V front end supplies, primarily employed in computing, server and data communications applications. Featuring a high efficiency of up to 97%, it is ideal for use in distributed power architectures.

### Features
- 1008W in a Quarter Brick Footprint
- High Efficiency - Up to 97%
- Baseplate Cooled
- Constant Switching Frequency
- Optional Droop Current Share

### Benefits
- High Power Density, Less Board Area Needed
- Lower Dissipated Power
- Suitable for Cold plate or Heatsink Mounting
- Simplified EMI Filtering
- Easier to Connect in Parallel

### Model Selector

<table>
<thead>
<tr>
<th>Model</th>
<th>Input Voltage(1) (V)</th>
<th>Output Voltage (V)</th>
<th>Max Current (A)</th>
<th>Max Power (W)</th>
<th>Efficiency (%)</th>
<th>Droop Load Share</th>
<th>Integrated Baseplate</th>
</tr>
</thead>
<tbody>
<tr>
<td>iQK4N090A112V-1U9-R</td>
<td>48 - 56</td>
<td>11.2</td>
<td>90</td>
<td>1008</td>
<td>96%</td>
<td>Yes</td>
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</tr>
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</table>

**Preferred Model**

**Notes**

(1) Operation down to 45V input is possible. Output voltage will decrease as the load current increases.
**Specification**

<table>
<thead>
<tr>
<th>Model</th>
<th>iQK</th>
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</table>

**Input**

- **Input Voltage Range (Vdc)**: 48 - 56 (Operation down to 45V with increased output regulation)
- **Input Transient (max) (Vdc)**: 80 (100 ms)
- **Input Current (max) (A)**: 22.5
- **Turn-on Voltage (typ) (Vdc)**: 46.3
- **Turn-off Voltage (typ) (Vdc)**: 43.6
- **Hysteresis (Vdc)**: 2.7
- **Efficiency (750 W) (%)**: 97
- **Efficiency (1008 W) (%)**: 96.5
- **Safety Agency Certifications**: IEC/UL/CSA/EN62368-1, 60950-1, CE Mark

**Output**

- **Output Voltage Initial Setpoint (%)**: ± 1 (Nominal input voltage, no load)
- **Output Voltage Tolerance (%)**: ± 2 (Across rated input and temperature range)
- **Output Voltage Adjustment Range**: None
- **Switching Frequency (kHz)**: 132
- **Line Regulation (Io = 50%) (mV)**: 30
- **Load Regulation (mV/A)**: 30
- **Load Share Accuracy (1U9-R) (%)**: ± 10
- **External Load Capacitance (µF)**: 1600 - 8000 (ESR > 2 mΩ)
- **Ripple & Noise (typ) (mVpp)**: 170
- **Overcurrent Protection Threshold (typ) (A)**: 92 - 99 (Non-Latching)
- **Overtemperature Protection**: Yes
- **Over Voltage Protection (V)**: 12.9 - 14.0 (Latching)
- **Remote Sense**: None
- **Remote On/Off**: Negative Logic
- **Power Good**: Open-Drain, Active Low

**Environmental**

- **Operating Baseplate Temperature (Tc) (°C)**: -40 to 119
- **Storage Temperature (°C)**: -55 to 125
- **Humidity (non condensing) (%RH)**: 5 - 95 (Operating & Storage)
- **Cooling**: Convection, conduction (baseplate) or forced air
- **Isolation Voltage (max) (Vdc)**: 707 (Input to Output)
- **Isolation Capacitance (pF)**: 700
- **Isolation Resistance (MΩ)**: > 15

**Other**

- **Weight (max) (g)**: 90
- **Size (LxWxH) (mm)**: 57.91 x 36.83 x 14.48
- **Size (LxWxH) (Inches)**: 2.28 x 1.45 x 0.57
- **MTBF - Telcordia SR-332 (Hours)**: > 2,700,000 (Nominal Input, 100% Load, 40 °C ambient)
- **Warranty (yrs)**: 3

Notes:

- See website for detailed specifications.
Outline Drawing

Recommended Hole Pattern (Top View)
Pinout

<table>
<thead>
<tr>
<th>PIN</th>
<th>Function</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vin (+)</td>
<td>6</td>
<td>N/A</td>
</tr>
<tr>
<td>2</td>
<td>On/Off</td>
<td>7</td>
<td>Power Good</td>
</tr>
<tr>
<td>3</td>
<td>Vin (-)</td>
<td>8</td>
<td>N/A</td>
</tr>
<tr>
<td>4</td>
<td>Vout (-)</td>
<td>9</td>
<td>Vout (+)</td>
</tr>
<tr>
<td>5</td>
<td>Vout (-)</td>
<td>10</td>
<td>Vout (+)</td>
</tr>
</tbody>
</table>

Pin base material is copper with gold plating. The maximum module weight is 90g.

Efficiency Curve

Typical Efficiency vs. Vin and Iout (no Droop).

Power Dissipation

Power Dissipation vs. Vin and Iout (no Droop).

Thermal Derating

Output current vs. ambient temperature curves @ nominal input voltage, airflow direction from pin 3 to pin 1.