Emerson Electric Co., of which headquarter is located in St Louis, USA, was established in year 1890, it earned a sales revenue of 15 billion dollars in 2004, ranked No.3 amongst global electronic companies, and ranked No.2 in American electronic industry; it was listed within the top 50 “most appreciated companies in the world” according to "Fortune" magazine, 2003.

Emerson Network Power China, located in Hi-tech Park, Nanshan District, Shenzhen, is not only one of the significant subsidiaries of Emerson Electric Co., a world top 500 enterprise; but also its most enormous investment in China. The sales revenue of this subsidiary reached 3.2 billion RMB in 2004.

BMP&CP product line is one of the most crucial parts that compose Emerson Network Power China. The product line has over 10 years of R&D and marketing experience, is providing overall power supply solution for switch, broadband, data-telecom, NGN network, optical network and wireless telecom facilities. Products include all kinds of AC/DC power, embedded power system and DC/DC power modules. DC/DC power module has become one of the international recognized brands, the yielding and sales amount takes the leading place in the industry. Millions of products has successfully operated online accompanied with facilities by well-known enterprises such as Huawei, Huawei-3com, Lucent, UT-Starcom, Motorola. Currently the product line is actively expanding its business throughout the world via the aid of Emerson Corporate brand and its network.
Emerson Network Power has the power to solve your toughest telecommunications and electronic data processing applications needs with our standard DC-DC converter range.

We offer a complete range of standard DC-DC converters with over 500 products to choose from. These range between 10W to 700W output efficiencies reaching 92%, high-power densities, and extraordinary reliability. Typical demonstrated mean-time-between-failure greater than 1 million hours (some with more than 2 million) and a three-year warranty are standard.

With Emerson Network Power, you get a world leading manufacturer of standard DC-DC converters and a product line generally characterized by:

- Revolutionary magnetic components, synchronous rectification technology, advanced packaging, and surface-mount technology that deliver optimum reliability, size, and thermal performance
- Power levels ranging from 10W to 700W
- Low output ripple, low-noise operation
- Wide operating and storage temperature ranges
- Wide input-voltage range ratio, 2:1
- Over voltage protection, over current protection and over temperature protection
- Tighter tolerance output voltage set point
- Flexible dual and triple output versions
- SMT and Through-hole versions
Applications

- Wireless Networks
- Access and Optical Networks
- Date Networking
- Enterprise Networks
- Latest generation ICs (DSP, FPGA, ASIC) and Microprocessor powered applications

Today's Telecom and Datacom equipment demand high reliability, smaller size, high-density, low-profile power supply. To meet these challenges, Emerson Network Power provides the best choice for your total DC-DC power solution.

Your next generation power solution starts here

Our summary chart offers a quick and easy way to identify some of the new products in our 2005 product line-up. Many new and exciting designs have been added to Emerson Network Power already extensive range of standard DC-DC converters.

Single and flexible dual outputs ultra-high efficiency performance, cost-efficient open-frame designs, industry standard footprints, outstanding power density, surface mount versions low profile packages and excellent thermal performance are some of the key attributes that characterize our new product range. These new solutions have been designed with the end-user application in mind so whether you are looking for a RF Power Amplifier power supply or you are designing a new processor board we have the right product for the job. Check out the industry leading performance of these new products on the following pages.
## BMP product series

### Isolated single output

<table>
<thead>
<tr>
<th>PI</th>
<th>10-15W</th>
<th>20-30W</th>
<th>50-100W</th>
<th>100-150W</th>
<th>150-300W</th>
<th>Above 300W</th>
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</thead>
<tbody>
<tr>
<td>Size</td>
<td>1 x 2</td>
<td>1.6 x 2</td>
<td>1/4B</td>
<td>1/8B</td>
<td>1/4B 1/8B</td>
<td>HB,1/4B</td>
</tr>
<tr>
<td>Product</td>
<td>AV10 AG15 AG15B</td>
<td>AG25 AVH30 (HB)</td>
<td>AVQ50 (12A)</td>
<td>AVQ75 (15A)</td>
<td>AVQ100 (20A)</td>
<td></td>
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<tr>
<td>Series</td>
<td></td>
<td></td>
<td>AVQ75 (20-25A)</td>
<td>AVQ100 (30A)</td>
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</tr>
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<td>AVQ100 (20A)</td>
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<tr>
<td></td>
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<td>AVQ200 (35-40A)</td>
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<tr>
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<td>AVQ200 (40A)</td>
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<td>AV100 (25-30A)</td>
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<td>AVE300 (60A)</td>
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<tr>
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<td>AGQ300 (60A)</td>
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<tr>
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<td></td>
<td>AVF500</td>
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<td>AVF700</td>
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### Isolated double outputs

<table>
<thead>
<tr>
<th>PI</th>
<th>30W 6-7A</th>
<th>50W-75W 15A</th>
<th>75W 15A</th>
<th>100W 20-25A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>1/4B</td>
<td>1/4B</td>
<td>HB</td>
<td>HB</td>
</tr>
<tr>
<td>Product</td>
<td>AVQ30B-D 3.3/1.5V 3.3/1.2V</td>
<td>AVQ50-D 3.3@8A/1.5V@12A 3.3@8A/1.2V@13A 3.3@10A/1.8V@10A AVQ75-D 3.3@15A/1.5V@15A</td>
<td>AVH75-D 5/3.3V 3.3/2.5V AVE75-D 5/3.3V</td>
<td>I sum = 13A</td>
</tr>
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<td>Series</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>AVQ100 (30A)</td>
<td>AVQ200 (40A)</td>
<td>AVE300 (60A)</td>
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### Non-Isolated single output

<table>
<thead>
<tr>
<th>current</th>
<th>4-6A 4.6A</th>
<th>8A 8</th>
<th>12A</th>
<th>18A</th>
<th>18A</th>
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<tbody>
<tr>
<td>size</td>
<td>2.5in SIP</td>
<td>1.3in SMT</td>
<td>1.3in SMT</td>
<td>1.3in SMT</td>
<td>2in SIP</td>
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<tr>
<td>Input voltage</td>
<td>3.3/5V</td>
<td>3.3/5/12V</td>
<td>3.3/5/12V</td>
<td>5/12V</td>
<td>5/12V</td>
</tr>
<tr>
<td>Input voltage</td>
<td>1.2-5V</td>
<td>0.9-3.3V</td>
<td>0.9-3.3V</td>
<td>0.75-5.5V</td>
<td>0.75-5.5V</td>
</tr>
<tr>
<td>Product series</td>
<td>AVN20B</td>
<td>APC08</td>
<td>APC12</td>
<td>APC18</td>
<td>APA18</td>
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DC/DC Package Information

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<tr>
<th>2&quot;x1&quot;</th>
<th>2&quot;x1.6&quot;</th>
<th>1.45&quot;x2.28&quot;</th>
<th>2.4&quot;x2.28&quot;</th>
<th>3.1&quot;x2.6&quot;</th>
<th>4.6&quot;x2.4&quot;</th>
<th>2.5&quot;x0.55&quot;</th>
<th>1.3&quot;x0.53&quot;</th>
<th>1.3&quot;x0.63&quot;</th>
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</thead>
<tbody>
<tr>
<td>AV10</td>
<td>AG25</td>
<td>AVQ30B-D</td>
<td>AVQ50</td>
<td>AVQ100</td>
<td>AGQ100</td>
<td>AVQ200</td>
<td>AGQ200</td>
<td>AGQ300</td>
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<tr>
<td>AG15</td>
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<td>AVQ200</td>
<td>AVQ200</td>
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<tr>
<td>AG25</td>
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<td>AVQ30B-D</td>
<td>AVQ50</td>
<td>AVQ100</td>
<td>AGQ100</td>
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<td>AVH30</td>
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<td>AVH-D</td>
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<td>AVF500</td>
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<td>AVN20B</td>
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<td>APC08</td>
<td>APC12</td>
<td>APC12</td>
<td>APC12</td>
<td>APC12</td>
<td>APC12</td>
<td>APC12</td>
</tr>
</tbody>
</table>

DC/DC Product Series

- **Low Power Isolated**
  - AV10
  - AG15
  - AG15B
  - AG25
  - AVH30
  - AVQ30B-D

- **Medium & High Isolated**
  - AVQ50
  - AVQ100
  - AGQ100
  - AVQ200
  - AGQ200
  - AGQ300
  - AVH50-AVH150
  - AVE50-AVE150
  - AVE200
  - AVE250
  - AVE300
  - AVF500
  - AVF700

- **Dual outputs brick**
  - AVQ30B-D
  - AVQ50/65-D
  - AVH75-D
  - AVQ75-D

- **Non-Isolated**
  - AVN20B
  - APC
  - APA
  - ATH (POLA)

- **Ring Generator**
  - HG3
  - HG15
  - HG30
  - HG40
  - HG75

DC/AC Ring Generator Product Series

- HG3
- HG15
- HG30
- HG40
- HG75
### OUTPUT POWER
- Power digit based on 5V and higher output voltage. The lower output is limited by its current.

### SERIES
- Omit this digit for standard low power module.
  - F = Full Brick
  - H = Half Brick
  - Q = Quarter Brick
  - O = One Eighth Brick
  - E = High efficiency Half Brick
  - N = Non-isolated SIP module
  - M = Surface mounted module
  - S = Specific Customer module

### INPUT VOLTAGE
- 03 = 3 to 3.6V
- 3V3 = 3 to 4V
- 04 = 3 to 5.5V
- 05 = 4.5 to 5.5V
- 12 = 9 to 18V
- 24 = 18 to 36V
- 48 = 36 to 75V
- or 36 to 72V

### OUTPUTS
- S = Single output
- D = Dual outputs
- T = Triple outputs
- Q = Quad outputs

### SINGLE OUTPUT VOLTAGE
- 1V2 = 1.2V
- 1V5 = 1.5V
- 1V8 = 1.8V
- 2V1 = 2.1V
- 2V5 = 2.5V
- 3V3/03 = 3.3V
- 05 = 5V
- 70 = 70V
- 96 = 96V

### DUAL OUTPUTS (DIFFERENT VALUE)
- 12 = 1.2V
- 15 = 1.5V
- 18 = 1.8V
- 02/25 = 2.5V
- 03/33 = 3.3V

### DUAL OUTPUTS (EQUAL VALUE)
- 05 = ±5V
- 12 = ±12V
- 15 = ±15V

### TRIPLE OR DUAL OUTPUTS
- The first digit is represent middle voltage value.
- The second digit is represent low voltage value.
- The last digit is represent high voltage value.

---

*For the CNT function and Pin length feature, the current products are available in the detailed list*
# 48V Input Modules, Single Output

## 1.2V Single Output

<table>
<thead>
<tr>
<th>Power</th>
<th>Current</th>
<th>Efficiency</th>
<th>Package Type</th>
<th>Package Style</th>
<th>L<em>W</em>H (mm)</th>
<th>Features</th>
<th>Product Code</th>
<th>Family</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.4W</td>
<td>12A</td>
<td>82%</td>
<td>Quarter Brick</td>
<td>Open-frame</td>
<td>57.9<em>36.8</em>9.0</td>
<td>Negative logic/Pin length:4.8mm</td>
<td>AVQ50-48S1V2-4/NN</td>
<td>AVQ 39</td>
<td></td>
</tr>
<tr>
<td>14.4W</td>
<td>12A</td>
<td>82%</td>
<td>Quarter Brick</td>
<td>Open-frame</td>
<td>57.9<em>36.8</em>9.0</td>
<td>Positive logic/Pin length:4.8mm</td>
<td>AVQ50-48S1V2P-4/NN</td>
<td>AVQ 39</td>
<td></td>
</tr>
<tr>
<td>24W</td>
<td>20A</td>
<td>87%</td>
<td>Eighth Brick</td>
<td>Open-frame</td>
<td>57.9<em>22.9</em>8.9</td>
<td>Negative logic/Pin length:4.8mm</td>
<td>AV050-48S1V2-4</td>
<td>AVQ 53</td>
<td></td>
</tr>
<tr>
<td>24W</td>
<td>20A</td>
<td>87%</td>
<td>Eighth Brick</td>
<td>Open-frame</td>
<td>57.9<em>22.9</em>8.9</td>
<td>Positive logic/Pin length:4.8mm</td>
<td>AV050-48S1V2P-4</td>
<td>AVQ 53</td>
<td></td>
</tr>
<tr>
<td>30W</td>
<td>25A</td>
<td>87%</td>
<td>Eighth Brick</td>
<td>Open-frame</td>
<td>57.9<em>22.9</em>8.9</td>
<td>Negative logic/Pin length:4.8mm</td>
<td>AV075-48S1V2-4</td>
<td>AVQ 53</td>
<td></td>
</tr>
<tr>
<td>30W</td>
<td>25A</td>
<td>87%</td>
<td>Eighth Brick</td>
<td>Open-frame</td>
<td>57.9<em>22.9</em>8.9</td>
<td>Positive logic/Pin length:4.8mm</td>
<td>AV075-48S1V2P-4</td>
<td>AVQ 53</td>
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<tr>
<td>30W</td>
<td>30A</td>
<td>87%</td>
<td>Quarter Brick</td>
<td>Open-frame</td>
<td>57.9<em>36.8</em>10.2</td>
<td>Negative logic/Pin length:4.8mm</td>
<td>AGQ100-48S1V2-4</td>
<td>AGQ 49</td>
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<td>Quarter Brick</td>
<td>Open-frame</td>
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<td>30W</td>
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<td>Open-frame with baseplate</td>
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<td>Open-frame with baseplate</td>
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<td>Open-frame</td>
<td>57.9<em>36.8</em>9.7</td>
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<td>Open-frame</td>
<td>57.9<em>36.8</em>9.7</td>
<td>Positive logic/Pin length:5.8mm</td>
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<td>AVQ 47</td>
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<td>85%</td>
<td>Quarter Brick</td>
<td>Open-frame</td>
<td>57.9<em>36.8</em>9.7</td>
<td>Negative logic/Pin length:4.8mm</td>
<td>AVQ200-48S1V2-4</td>
<td>AVQ 47</td>
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</tr>
<tr>
<td>48W</td>
<td>40A</td>
<td>85%</td>
<td>Quarter Brick</td>
<td>Open-frame</td>
<td>57.9<em>36.8</em>9.7</td>
<td>Positive logic/Pin length:4.8mm</td>
<td>AVQ200-48S1V2P-4</td>
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</tr>
<tr>
<td>48W</td>
<td>40A</td>
<td>83%</td>
<td>Half Brick</td>
<td>Aluminum Substate</td>
<td>61.0<em>57.9</em>12.7</td>
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<td>AVE 67</td>
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<td>Aluminum Substate</td>
<td>61.0<em>57.9</em>12.7</td>
<td>Positive logic/Pin length:4.8mm</td>
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<td>AVE 67</td>
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<td>Open-frame</td>
<td>61.0<em>57.9</em>9.5</td>
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<td>AVE 73</td>
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<td>88%</td>
<td>Half Brick</td>
<td>Open-frame</td>
<td>61.0<em>57.9</em>9.5</td>
<td>Positive logic/Pin length:4.8mm</td>
<td>AVE300-48S1V2P-4</td>
<td>AVE 73</td>
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<tr>
<td>72W</td>
<td>60A</td>
<td>88%</td>
<td>Half Brick</td>
<td>Open-frame with baseplate</td>
<td>61.0<em>57.9</em>12.7</td>
<td>Negative logic/Pin length:4.8mm</td>
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<td>AVE 73</td>
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<tr>
<td>72W</td>
<td>60A</td>
<td>88%</td>
<td>Half Brick</td>
<td>Open-frame with baseplate</td>
<td>61.0<em>57.9</em>12.7</td>
<td>Positive logic/Pin length:4.8mm</td>
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## 1.5V Single Output

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<th>Current</th>
<th>Efficiency</th>
<th>Package Type</th>
<th>Package Style</th>
<th>L<em>W</em>H (mm)</th>
<th>Features</th>
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<th>Family</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>18W</td>
<td>12A</td>
<td>82%</td>
<td>Quarter Brick</td>
<td>Open-frame</td>
<td>57.9<em>36.8</em>9.0</td>
<td>Negative logic/Pin length:4.8mm</td>
<td>AVQ50-48S1V5-4</td>
<td>AVQ 39</td>
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<tr>
<td>18W</td>
<td>12A</td>
<td>82%</td>
<td>Quarter Brick</td>
<td>Open-frame</td>
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<td>Positive logic/Pin length:4.8mm</td>
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<td>18W</td>
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- New Products
### Express Selection

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#### 2.5V Single Output

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EXPRESS SELECTION

66W 20A 88% Half Brick Aluminum Substate 61.0*57.9*12.7 Negative logic/Pin length:5.8mm AVE100-48S03 AVE 65
66W 20A 91% Eighth Brick Open-frame 57.9*22.9*8.9 Negative logic/Pin length:4.8mm AVO75-48S3V-4 AVO 53
66W 20A 91% Eighth Brick Open-frame 57.9*22.9*8.9 Positive logic/Pin length:4.8mm AVO75-48S3V3P-4 AVO 53
82.5W 25A 89.5% Quarter Brick Open-frame 57.9*36.8*10.2 Negative logic/Pin length:4.8mm AGQ100-48S3V3-4 AGQ 49
82.5W 25A 89.5% Quarter Brick Open-frame 57.9*36.8*10.2 Positive logic/Pin length:4.8mm AGQ100-48S3V3P-4 AGQ 49
82.5W 25A 89.5% Quarter Brick Open-frame with baseplate 57.9*36.8*12.7 Negative logic/Pin length:4.8mm AGQ100-48S3V3PB-4 AGQ 49
82.5W 25A 89.5% Quarter Brick Open-frame with baseplate 57.9*36.8*12.7 Positive logic/Pin length:4.8mm AGQ100-48S3V3PB-4 AGQ 49
99W 30A 81% Half Brick Aluminum Substate 61.0*57.9*12.7 Negative logic/Pin length:5.8mm AVH150-48S03 AVH 59
99W 30A 81% Half Brick Aluminum Substate 61.0*57.9*12.7 Positive logic/Pin length:5.8mm AVH150-48S03P AVH 59
99W 30A 85% Half Brick Aluminum Substate 61.0*57.9*12.7 Negative logic/Pin length:5.8mm AVH150-48S03 AVH 59
99W 30A 85% Half Brick Aluminum Substate 61.0*57.9*12.7 Negative logic/Pin length:5.8mm/OCP mode: Hiccup AVH150-48S03/HW AVH 59
99W 30A 91% Eighth Brick Open-frame 57.9*22.9*8.9 Negative logic/Pin length:4.8mm AVO100-48S3V3-4 AVO 55
99W 30A 91% Eighth Brick Open-frame 57.9*22.9*8.9 Positive logic/Pin length:4.8mm AVO100-48S3V3P-4 AVO 55
99W 30A 91% Eighth Brick Open-frame 57.9*22.9*8.9 Positive logic/Pin length:4.8mm AVO100-48S3V3P-4 AVO 55
82.5W 25A 90% Quarter Brick Open-frame 57.9*36.8*9.7 Negative logic/Pin length:5.8mm AVQ200-48S3V3 AVQ 47
82.5W 25A 90% Quarter Brick Open-frame 57.9*36.8*9.7Negative logic/Pin length:5.8mm AVQ200-48S3V3B-4 AVQ 47
82.5W 25A 90% Quarter Brick Open-frame 57.9*36.8*9.7 Positive logic/Pin length:5.8mm AVQ200-48S3V3P-4 AVQ 47
99W 30A 91% Eighth Brick Open-frame 57.9*22.9*8.9 Negative logic/Pin length:4.8mm AVO100-48S3V3-4 AVO 55
99W 30A 91% Eighth Brick Open-frame 57.9*22.9*8.9 Positive logic/Pin length:4.8mm AVO100-48S3V3P-4 AVO 55
99W 30A 91% Eighth Brick Open-frame 57.9*22.9*8.9 Positive logic/Pin length:4.8mm AVO100-48S3V3P-4 AVO 55
115.5W 35A 90% Quarter Brick Open-frame 57.9*36.8*9.7 Negative logic/Pin length:4.8mm AVQ200-48S3V3 AVQ 47
115.5W 35A 90% Quarter Brick Open-frame 57.9*36.8*9.7 Positive logic/Pin length:4.8mm AVQ200-48S3V3P-4 AVQ 47
115.5W 35A 90% Quarter Brick Open-frame 57.9*36.8*9.7 Positive logic/Pin length:4.8mm AVQ200-48S3V3P-4 AVQ 47
115.5W 35A 90% Quarter Brick Open-frame 57.9*36.8*9.7 Positive logic/Pin length:4.8mm AVQ200-48S3V3P-4 AVQ 47
115.5W 35A 90% Quarter Brick Open-frame 57.9*36.8*9.7 Positive logic/Pin length:4.8mm AVQ200-48S3V3P-4 AVQ 47
115.5W 35A 90% Quarter Brick Open-frame 57.9*36.8*9.7 Positive logic/Pin length:4.8mm AVQ200-48S3V3P-4 AVQ 47
132W 40A 92% Half Brick Aluminum Substate 61.0*57.9*12.7 Negative logic/Pin length:4.8mm AVE200-48S3V3P-4 AVE 67
132W 40A 92% Half Brick Aluminum Substate 61.0*57.9*12.7 Positive logic/Pin length:4.8mm AVE200-48S3V3P-4 AVE 67
132W 40A 92% Half Brick Aluminum Substate 61.0*57.9*12.7 Positive logic/Pin length:4.8mm AVE200-48S3V3P-4 AVE 67
132W 40A 92% Half Brick Aluminum Substate 61.0*57.9*12.7 Positive logic/Pin length:4.8mm AVE200-48S3V3P-4 AVE 67
132W 40A 92% Quarter Brick Open-frame 57.9*36.8*9.8 Positive logic/Pin length:4.8mm AGQ200-48S3V3P-4 AGQ 41
132W 40A 92% Quarter Brick Open-frame 57.9*36.8*9.8 Positive logic/Pin length:4.8mm AGQ200-48S3V3P-4 AGQ 41
132W 40A 92% Quarter Brick Open-frame 57.9*36.8*9.8 Positive logic/Pin length:4.8mm AGQ200-48S3V3P-4 AGQ 41
132W 40A 92% Quarter Brick Open-frame 57.9*36.8*9.8 Positive logic/Pin length:4.8mm AGQ200-48S3V3P-4 AGQ 41
198W 60A 92% Half Brick Open-frame 61.0*57.9*12.7 Negative logic/Pin length:4.8mm AVE300-48S3V3 AVQ 33
198W 60A 92% Half Brick Open-frame 61.0*57.9*12.7 Negative logic/Pin length:4.8mm AVE300-48S3V3 AVQ 33
198W 60A 92% Half Brick Open-frame 61.0*57.9*12.7 Negative logic/Pin length:4.8mm AVE300-48S3V3 AVQ 33
198W 60A 92% Half Brick Open-frame 61.0*57.9*12.7 Negative logic/Pin length:4.8mm AVE300-48S3V3 AVQ 33
198W 60A 92% Half Brick Open-frame 61.0*57.9*12.7 Negative logic/Pin length:4.8mm AVE300-48S3V3 AVQ 33
198W 60A 92% Half Brick Open-frame 61.0*57.9*12.7 Negative logic/Pin length:4.8mm AVE300-48S3V3 AVQ 33
5V Single Output

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<th>Package Type</th>
<th>Package Style</th>
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### 5.2V Single Output

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### 8V Single Output

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<td>25W</td>
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<td>1.6&quot;**2&quot;</td>
<td>Open-frame</td>
<td>50.8<em>40.6</em>9.7</td>
<td>Negative logic/Trim:5.6mm</td>
<td>AG25-48S08-4</td>
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<td>25W</td>
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<td>85%</td>
<td>1.6&quot;**2&quot;</td>
<td>Open-frame</td>
<td>50.8<em>40.6</em>9.7</td>
<td>Positive logic/Trim length:4.8mm</td>
<td>AG25-48S08P-4</td>
<td>AG25</td>
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<tr>
<td>50.4W</td>
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<td>Open-frame with baseplate</td>
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<td>AVQ50-48S08B-4</td>
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<td>50.4W</td>
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<td>Quarter Brick</td>
<td>Open-frame with baseplate</td>
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### 12V Single Output

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<th>Product Code</th>
<th>Family</th>
<th>Page</th>
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<tr>
<td>50W</td>
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<td>92%</td>
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<td>Open-frame</td>
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<td>Open-frame</td>
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<td>Open-frame</td>
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<td>100W</td>
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<td>87%</td>
<td>Half Brick</td>
<td>Aluminum Substate</td>
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<td>100W</td>
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<td>90%</td>
<td>Quarter Brick</td>
<td>Open-frame</td>
<td>57.9<em>36.8</em>10.2</td>
<td>Negative logic/Trim length:4.8mm</td>
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<td>57.9<em>36.8</em>10.2</td>
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<td>90%</td>
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<td>Open-frame with baseplate</td>
<td>57.9<em>36.8</em>12.7</td>
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. New Products
### 15V Single Output

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<th>L<em>W</em>H(mm)</th>
<th>Features</th>
<th>Product Code</th>
<th>Family</th>
<th>Page</th>
</tr>
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<tr>
<td>10.2W</td>
<td>0.68A</td>
<td>85%</td>
<td>Encapsulate</td>
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<tr>
<td>25.1W</td>
<td>1.67A</td>
<td>87%</td>
<td>Open-frame</td>
<td>1.6&quot;*2&quot;</td>
<td>50.8<em>40.6</em>9.7</td>
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<td>31</td>
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<tr>
<td>50W</td>
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<td>Half Brick</td>
<td>Aluminum Substate</td>
<td>61.0<em>57.9</em>12.7</td>
<td>Negative logic/Pin length:5.8mm</td>
<td>AVH50-48S15</td>
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<td>Aluminum Substate</td>
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### 28V Single Output

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<th>Package Style</th>
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<th>Features</th>
<th>Product Code</th>
<th>Family</th>
<th>Page</th>
</tr>
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<td>1.79A</td>
<td>87%</td>
<td>Half Brick</td>
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<td>Aluminum Substate</td>
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<td>87%</td>
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<td>252W</td>
<td>9A</td>
<td>91%</td>
<td>Half Brick</td>
<td>Aluminum Substate</td>
<td>61.0<em>57.9</em>12.7</td>
<td>Positive logic/Pin length:4.8mm</td>
<td>AVE250-48S28P-4</td>
<td>AVE</td>
<td>69</td>
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<td>504W</td>
<td>18A</td>
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<td>Aluminum Substate</td>
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<td>AVF</td>
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<td>18A</td>
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<td>700W</td>
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### 68V Single Output

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<th>L<em>W</em>H(mm)</th>
<th>Features</th>
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<th>Family</th>
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<tr>
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### 96V Single Output

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<th>Family</th>
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<td>9.6W</td>
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<td>85%</td>
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## 48V Input Modules, Multiple Outputs

### 3.3V/1.2V Dual Outputs

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<th>Family</th>
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### 3.3V/1.5V Dual Outputs

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<td>Open-frame</td>
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### 3.3V/1.8V Dual Outputs

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<th>Family</th>
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<td>44.4W</td>
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<td>87%</td>
<td>Quarter Brick</td>
<td>Open-frame</td>
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### 3.3V/2.5V Dual Outputs

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<td>49.5W</td>
<td>15A/15A</td>
<td>80%</td>
<td>Half Brick</td>
<td>Aluminum Substate</td>
<td>61.0<em>57.9</em>12.7</td>
<td>Negative logic/Pin length:5.8mm</td>
<td>AVH75-48D0302P-6</td>
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<tr>
<td>49.5W</td>
<td>15A/15A</td>
<td>80%</td>
<td>Half Brick</td>
<td>Aluminum Substate</td>
<td>61.0<em>57.9</em>12.7</td>
<td>Negative logic/Pin length:2.8mm</td>
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<td>49.5W</td>
<td>15A/15A</td>
<td>80%</td>
<td>Half Brick</td>
<td>Aluminum Substate</td>
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<th>L<em>W</em>H (mm)</th>
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<th>Product Code</th>
<th>Family</th>
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</tr>
</thead>
<tbody>
<tr>
<td>75W</td>
<td>15A/15A</td>
<td>82%</td>
<td>Half Brick</td>
<td>Aluminum Substate</td>
<td>61.0<em>57.9</em>12.7</td>
<td>Negative logic/Pin length:5.8mm</td>
<td>AVH75-48D0503P-6</td>
<td>AVH</td>
<td>63</td>
</tr>
<tr>
<td>75W</td>
<td>15A/15A</td>
<td>82%</td>
<td>Half Brick</td>
<td>Aluminum Substate</td>
<td>61.0<em>57.9</em>12.7</td>
<td>Negative logic/Pin length:5.8mm</td>
<td>AVH75-48D0503P-6</td>
<td>AVH</td>
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</tr>
<tr>
<td>75W</td>
<td>15A/15A</td>
<td>82%</td>
<td>Half Brick</td>
<td>Aluminum Substate</td>
<td>61.0<em>57.9</em>12.7</td>
<td>Negative logic/Pin length:2.8mm</td>
<td>AVH75-48D0503P-6</td>
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<td>75W</td>
<td>15A/15A</td>
<td>82%</td>
<td>Half Brick</td>
<td>Aluminum Substate</td>
<td>61.0<em>57.9</em>12.7</td>
<td>Negative logic/Pin length:2.8mm</td>
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### 75W Dual Outputs

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<th>Family</th>
<th>Page</th>
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</thead>
<tbody>
<tr>
<td>75W</td>
<td>15A</td>
<td>82%</td>
<td>Half Brick</td>
<td>Aluminum Substate</td>
<td>61.0<em>57.9</em>12.7</td>
<td>Positive logic/ Pin length: 3.8mm</td>
<td>AVH75-48D05P-6</td>
<td>AVH</td>
<td>63</td>
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<td>75W</td>
<td>15A</td>
<td>82%</td>
<td>Half Brick</td>
<td>Aluminum Substate</td>
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### +5V/-5V Dual Outputs

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<th>Features</th>
<th>Product Code</th>
<th>Family</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>10W</td>
<td>± 1A</td>
<td>79%</td>
<td>1&quot;*2&quot;</td>
<td>Encapsulate</td>
<td>50.8<em>25.4</em>9.0</td>
<td>Pin length: 6.6mm</td>
<td>AV10-48D05</td>
<td>AV10</td>
<td>23</td>
</tr>
<tr>
<td>30W</td>
<td>± 3A</td>
<td>84%</td>
<td>1.6&quot;*2&quot;</td>
<td>Open-frame</td>
<td>50.8<em>40.6</em>9.7</td>
<td>Negative logic/ Pin length: 4.8mm</td>
<td>AG25-48D05-4</td>
<td>AG25</td>
<td>33</td>
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<tr>
<td>30W</td>
<td>± 3A</td>
<td>84%</td>
<td>1.6&quot;*2&quot;</td>
<td>Open-frame</td>
<td>50.8<em>40.6</em>9.7</td>
<td>Positive logic/ Pin length: 4.8mm</td>
<td>AG25-48D05P-4</td>
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### +12V/-12V Dual Outputs

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<th>Features</th>
<th>Product Code</th>
<th>Family</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1W</td>
<td>± 0.42A</td>
<td>85%</td>
<td>1&quot;*2&quot;</td>
<td>Encapsulate</td>
<td>50.8<em>25.4</em>9.0</td>
<td>Pin length: 6.6mm</td>
<td>AV10-48D12</td>
<td>AV10</td>
<td>23</td>
</tr>
<tr>
<td>15.1W</td>
<td>± 0.63A</td>
<td>86%</td>
<td>1&quot;*2&quot;</td>
<td>Encapsulate</td>
<td>50.8<em>25.4</em>10.2</td>
<td>Positive logic/ Long pin: 5.6mm</td>
<td>AG15-48D12PL</td>
<td>AG15</td>
<td>27</td>
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<tr>
<td>15.1W</td>
<td>± 0.63A</td>
<td>86%</td>
<td>1&quot;*2&quot;</td>
<td>Encapsulate</td>
<td>50.8<em>25.4</em>10.2</td>
<td>Negative logic/ Long pin: 5.6mm</td>
<td>AG15-48D12NL</td>
<td>AG15</td>
<td>27</td>
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<tr>
<td>30W</td>
<td>± 1.25A</td>
<td>87%</td>
<td>1.6&quot;*2&quot;</td>
<td>Open-frame</td>
<td>50.8<em>40.6</em>9.7</td>
<td>Negative logic/ Pin length: 4.8mm</td>
<td>AG25-48D12-4</td>
<td>AG25</td>
<td>23</td>
</tr>
<tr>
<td>30W</td>
<td>± 1.25A</td>
<td>87%</td>
<td>1.6&quot;*2&quot;</td>
<td>Open-frame</td>
<td>50.8<em>40.6</em>9.7</td>
<td>Positive logic/ Pin length: 4.8mm</td>
<td>AG25-48D12P-4</td>
<td>AG25</td>
<td>23</td>
</tr>
<tr>
<td>64.8W</td>
<td>± 2.7A</td>
<td>89%</td>
<td>Quarter Brick</td>
<td>Open-frame</td>
<td>57.9<em>36.8</em>10.2</td>
<td>Negative logic/ Pin length: 3.8mm</td>
<td>AVQ65-48D12-6</td>
<td>AVQ</td>
<td>41</td>
</tr>
<tr>
<td>64.8W</td>
<td>± 2.7A</td>
<td>89%</td>
<td>Quarter Brick</td>
<td>Open-frame</td>
<td>57.9<em>36.8</em>10.2</td>
<td>Positive logic/ Pin length: 3.8mm</td>
<td>AVQ65-48D12P-6</td>
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### +15V/-15V Dual Outputs

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<th>Features</th>
<th>Product Code</th>
<th>Family</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.9W</td>
<td>± 0.33A</td>
<td>83%</td>
<td>1&quot;*2&quot;</td>
<td>Encapsulate</td>
<td>50.8<em>25.4</em>9.0</td>
<td>Pin length: 6.6mm</td>
<td>AV10-48D15</td>
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New Products
# 24V Input Modules, Single Output

## 2.5V Single Output

<table>
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<th>Package Type</th>
<th>Package Style</th>
<th>L<em>W</em>H (mm)</th>
<th>Features</th>
<th>Product Code</th>
<th>Family</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>25W</td>
<td>10A</td>
<td>85%</td>
<td>Half Brick</td>
<td>Open-shelf Aluminum Substate</td>
<td>61.0<em>57.9</em>12.7</td>
<td>Negative logic/Pin length:5.8mm</td>
<td>AVE50-24S2V5</td>
<td>AVE</td>
<td>71</td>
</tr>
<tr>
<td>50W</td>
<td>20A</td>
<td>85%</td>
<td>Half Brick</td>
<td>Open-shelf Aluminum Substate</td>
<td>61.0<em>57.9</em>12.7</td>
<td>Negative logic/Pin length:5.8mm</td>
<td>AVE100-24S2V5</td>
<td>AVE</td>
<td>71</td>
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</table>

## 3.3V Single Output

<table>
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<th>Package Type</th>
<th>Package Style</th>
<th>L<em>W</em>H (mm)</th>
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<th>Product Code</th>
<th>Family</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.3W</td>
<td>2.5A</td>
<td>76%</td>
<td>1”*2”</td>
<td>Encapsulate</td>
<td>50.8<em>25.4</em>9.0</td>
<td>Pin length:6.6mm</td>
<td>AV10-24S03</td>
<td>AV10</td>
<td>21</td>
</tr>
<tr>
<td>14.9W</td>
<td>4.5A</td>
<td>84%</td>
<td>1”*2”</td>
<td>Encapsulate</td>
<td>50.8<em>25.4</em>10.2</td>
<td>Negative logic/Trim/Long pin:5.6mm</td>
<td>AG15-24S03NTL</td>
<td>AG15</td>
<td>25</td>
</tr>
<tr>
<td>19.8W</td>
<td>6A</td>
<td>83%</td>
<td>1.6”*2”</td>
<td>Open-frame</td>
<td>50.8<em>40.6</em>9.7</td>
<td>Positive logic/Trim/Long pin:5.6mm</td>
<td>AG15-24S03PTL</td>
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<td>25</td>
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<tr>
<td>19.8W</td>
<td>6A</td>
<td>83%</td>
<td>1.6”*2”</td>
<td>Open-frame</td>
<td>50.8<em>40.6</em>9.7</td>
<td>Positive logic/Trim/Short pin:2.8mm</td>
<td>AG15-24S03PTS</td>
<td>AG15</td>
<td>25</td>
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<tr>
<td>33W</td>
<td>10A</td>
<td>87%</td>
<td>Half Brick</td>
<td>Open-shelf Aluminum Substate</td>
<td>61.0<em>57.9</em>12.7</td>
<td>Negative logic/Pin length:5.8mm</td>
<td>AVE50-24S03</td>
<td>AVE</td>
<td>71</td>
</tr>
<tr>
<td>66W</td>
<td>20A</td>
<td>87%</td>
<td>Half Brick</td>
<td>Open-shelf Aluminum Substate</td>
<td>61.0<em>57.9</em>12.7</td>
<td>Negative logic/Pin length:5.8mm</td>
<td>AVE100-24S03</td>
<td>AVE</td>
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## 5V Single Output

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<th>Features</th>
<th>Product Code</th>
<th>Family</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>10W</td>
<td>2A</td>
<td>78%</td>
<td>1”*2”</td>
<td>Encapsulate</td>
<td>50.8<em>25.4</em>9.0</td>
<td>Pin length:6.6mm</td>
<td>AV10-24S05</td>
<td>AV10</td>
<td>21</td>
</tr>
<tr>
<td>25W</td>
<td>5A</td>
<td>85%</td>
<td>1.6”*2”</td>
<td>Open-frame</td>
<td>50.8<em>40.6</em>9.7</td>
<td>Negative logic/Pin length:4.8mm</td>
<td>AG25-24S05-4</td>
<td>AG25</td>
<td>31</td>
</tr>
<tr>
<td>25W</td>
<td>5A</td>
<td>85%</td>
<td>1.6”*2”</td>
<td>Open-frame</td>
<td>50.8<em>40.6</em>9.7</td>
<td>Positive logic/Pin length:4.8mm/Customized</td>
<td>AG25-24S05P-4/H0</td>
<td>AG25</td>
<td>31</td>
</tr>
<tr>
<td>50W</td>
<td>10A</td>
<td>88%</td>
<td>Half Brick</td>
<td>Open-shelf Aluminum Substate</td>
<td>61.0<em>57.9</em>12.7</td>
<td>Negative logic/Pin length:5.8mm</td>
<td>AVE50-24S05</td>
<td>AVE</td>
<td>71</td>
</tr>
<tr>
<td>100W</td>
<td>20A</td>
<td>88%</td>
<td>Half Brick</td>
<td>Open-shelf Aluminum Substate</td>
<td>61.0<em>57.9</em>12.7</td>
<td>Negative logic/Pin length:5.8mm</td>
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## 8V Single Output

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<th>Package Style</th>
<th>L<em>W</em>H (mm)</th>
<th>Features</th>
<th>Product Code</th>
<th>Family</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.6W</td>
<td>1.2A</td>
<td>82%</td>
<td>1”*2”</td>
<td>Encapsulate</td>
<td>50.8<em>25.4</em>9.0</td>
<td>Pin length:6.6mm</td>
<td>AV10-24S08</td>
<td>AV10</td>
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* New Products
### 12V Single Output

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<th>Package Style</th>
<th>L<em>W</em>H(mm)</th>
<th>Features</th>
<th>Product Code</th>
<th>Family Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1W</td>
<td>0.84A</td>
<td>82%</td>
<td>1&quot;*2&quot;</td>
<td>Encapsulate</td>
<td>50.8<em>25.4</em>9.0</td>
<td>Pin length:6.6mm</td>
<td>AV10-24S12</td>
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<th>Package Style</th>
<th>L<em>W</em>H(mm)</th>
<th>Features</th>
<th>Product Code</th>
<th>Family Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.2W</td>
<td>0.68A</td>
<td>82%</td>
<td>1&quot;*2&quot;</td>
<td>Encapsulate</td>
<td>50.8<em>25.4</em>9.0</td>
<td>Pin length:6.6mm</td>
<td>AV10-24S15</td>
<td>AV10 21</td>
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# 24V Input Modules, Multiple Outputs

### +5V/-5V Dual Outputs

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<th>Package Type</th>
<th>Package Style</th>
<th>L<em>W</em>H(mm)</th>
<th>Features</th>
<th>Product Code</th>
<th>Family Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>10W</td>
<td>±1A</td>
<td>79%</td>
<td>1&quot;*2&quot;</td>
<td>Encapsulate</td>
<td>50.8<em>25.4</em>9.0</td>
<td>Pin length:6.6mm</td>
<td>AV10-24D05</td>
<td>AV10 23</td>
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### +12V/-12V Dual Outputs

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<th>Current</th>
<th>Efficiency</th>
<th>Package Type</th>
<th>Package Style</th>
<th>L<em>W</em>H(mm)</th>
<th>Features</th>
<th>Product Code</th>
<th>Family Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1W</td>
<td>±0.42A</td>
<td>83%</td>
<td>1&quot;*2&quot;</td>
<td>Encapsulate</td>
<td>50.8<em>25.4</em>9.0</td>
<td>Pin length:6.6mm</td>
<td>AV10-24D12</td>
<td>AV10 23</td>
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### +15V/-15V Dual Outputs

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<th>Package Type</th>
<th>Package Style</th>
<th>L<em>W</em>H(mm)</th>
<th>Features</th>
<th>Product Code</th>
<th>Family Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.9W</td>
<td>±0.33A</td>
<td>83%</td>
<td>1&quot;*2&quot;</td>
<td>Encapsulate</td>
<td>50.8<em>25.4</em>9.0</td>
<td>Pin length:6.6mm</td>
<td>AV10-24D15</td>
<td>AV10 23</td>
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# Non-Isolated

## 3.3V Normal Input Voltage

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<th>Vout</th>
<th>Current</th>
<th>Efficiency</th>
<th>Package Type</th>
<th>Package Style</th>
<th>L<em>W</em>H(mm)</th>
<th>Features</th>
<th>Product Code</th>
<th>Family</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>20W</td>
<td>5V</td>
<td>4A</td>
<td>87%</td>
<td>2.5&quot;*0.55&quot;</td>
<td>SIP</td>
<td>63.5<em>8.38</em>14.0</td>
<td>Pin length: 5.8mm</td>
<td>AVN20B-3V3S05</td>
<td>AVN20B</td>
<td>91</td>
</tr>
<tr>
<td>20W</td>
<td>5V</td>
<td>4A</td>
<td>87%</td>
<td>2.5&quot;*0.55&quot;</td>
<td>SIP</td>
<td>63.5<em>8.38</em>14.0</td>
<td>Pin length: 3.8mm</td>
<td>AVN20B-3V3S05-06</td>
<td>AVN20B</td>
<td>91</td>
</tr>
<tr>
<td>20W</td>
<td>5V</td>
<td>4A</td>
<td>87%</td>
<td>2.5&quot;*0.55&quot;</td>
<td>SIP</td>
<td>63.5<em>8.38</em>14.0</td>
<td>Right angle pins/Pin length: 3.8mm</td>
<td>AVN20B-3V3S05-R-06</td>
<td>AVN20B</td>
<td>91</td>
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## 3.5-5.5V Normal Input Voltage

<table>
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<th>Efficiency</th>
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<th>Package Style</th>
<th>L<em>W</em>H(mm)</th>
<th>Features</th>
<th>Product Code</th>
<th>Family</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.2W</td>
<td>1.2V</td>
<td>6A</td>
<td>78%</td>
<td>2.5&quot;*0.55&quot;</td>
<td>SIP</td>
<td>63.5<em>8.38</em>14.0</td>
<td>Pin length: 5.8mm</td>
<td>AVN20B-04S1V2</td>
<td>AVN20B</td>
<td>89</td>
</tr>
<tr>
<td>7.2W</td>
<td>1.2V</td>
<td>6A</td>
<td>78%</td>
<td>2.5&quot;*0.55&quot;</td>
<td>SIP</td>
<td>63.5<em>8.38</em>14.0</td>
<td>Pin length: 3.8mm</td>
<td>AVN20B-04S1V2-06</td>
<td>AVN20B</td>
<td>89</td>
</tr>
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<td>1.2V</td>
<td>6A</td>
<td>78%</td>
<td>2.5&quot;*0.55&quot;</td>
<td>SIP</td>
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<td>Basic function/Pin length: 3.8mm</td>
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<td>1.2V</td>
<td>6A</td>
<td>78%</td>
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<td>SIP</td>
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<tr>
<td>9W</td>
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<td>6A</td>
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<tr>
<td>9W</td>
<td>1.5V</td>
<td>6A</td>
<td>81%</td>
<td>2.5&quot;*0.55&quot;</td>
<td>SIP</td>
<td>63.5<em>8.38</em>14.0</td>
<td>Right angle pins/Pin length: 3.8mm</td>
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<td>AVN20B</td>
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<td>2.5&quot;*0.55&quot;</td>
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<td>1.8V</td>
<td>6A</td>
<td>83%</td>
<td>2.5&quot;*0.55&quot;</td>
<td>SIP</td>
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<td>Basic function/Pin length: 3.8mm</td>
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<tr>
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<td>1.8V</td>
<td>6A</td>
<td>83%</td>
<td>2.5&quot;*0.55&quot;</td>
<td>SIP</td>
<td>63.5<em>8.38</em>14.0</td>
<td>Right angle pins/Pin length: 3.8mm</td>
<td>AVN20B-04S1V8-R-06</td>
<td>AVN20B</td>
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<td>12.6W</td>
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<td>86%</td>
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<td>6A</td>
<td>86%</td>
<td>2.5&quot;*0.55&quot;</td>
<td>SIP</td>
<td>63.5<em>8.38</em>14.0</td>
<td>Pin length: 3.8mm</td>
<td>AVN20B-04S2V1-06</td>
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<td>89</td>
</tr>
<tr>
<td>12.6W</td>
<td>2.1V</td>
<td>6A</td>
<td>86%</td>
<td>2.5&quot;*0.55&quot;</td>
<td>SIP</td>
<td>63.5<em>8.38</em>14.0</td>
<td>Basic function/Pin length: 3.8mm</td>
<td>AVN20B-04S2V1-E-06</td>
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<td>12.6W</td>
<td>2.1V</td>
<td>6A</td>
<td>86%</td>
<td>2.5&quot;*0.55&quot;</td>
<td>SIP</td>
<td>63.5<em>8.38</em>14.0</td>
<td>Right angle pins/Pin length: 3.8mm</td>
<td>AVN20B-04S2V1-R-06</td>
<td>AVN20B</td>
<td>89</td>
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## 5V Normal Input Voltage

<table>
<thead>
<tr>
<th>Power</th>
<th>Vout</th>
<th>Current</th>
<th>Efficiency</th>
<th>Package Type</th>
<th>Package Style</th>
<th>L<em>W</em>H(mm)</th>
<th>Features</th>
<th>Product Code</th>
<th>Family</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5W</td>
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<td>6A</td>
<td>88%</td>
<td>2.5&quot;*0.55&quot;</td>
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<td>63.5<em>8.38</em>14.0</td>
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<td>15W</td>
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<td>88%</td>
<td>2.5&quot;*0.55&quot;</td>
<td>SIP</td>
<td>63.5<em>8.38</em>14.0</td>
<td>Pin length: 3.8mm</td>
<td>AVN20B-05S2V5-06</td>
<td>AVN20B</td>
<td>89</td>
</tr>
<tr>
<td>15W</td>
<td>2.5V</td>
<td>6A</td>
<td>88%</td>
<td>2.5&quot;*0.55&quot;</td>
<td>SIP</td>
<td>63.5<em>8.38</em>14.0</td>
<td>Basic function/Pin length: 3.8mm</td>
<td>AVN20B-05S2V5-E-06</td>
<td>AVN20B</td>
<td>89</td>
</tr>
<tr>
<td>15W</td>
<td>2.5V</td>
<td>6A</td>
<td>88%</td>
<td>2.5&quot;*0.55&quot;</td>
<td>SIP</td>
<td>63.5<em>8.38</em>14.0</td>
<td>Right angle pins/Pin length: 3.8mm</td>
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<td>AVN20B</td>
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<td>89%</td>
<td>2.5&quot;*0.55&quot;</td>
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<td>89%</td>
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<td>AVN20B-05S3V3-06</td>
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### Others

#### Ring Generator

<table>
<thead>
<tr>
<th>Model number</th>
<th>Vin</th>
<th>Power</th>
<th>Out</th>
<th>Efficiency</th>
<th>Package Type</th>
<th>Package Style</th>
<th>L<em>W</em>H(mm)</th>
<th>Features</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>HG3-24RNG</td>
<td>24V</td>
<td>3W</td>
<td>75VAC/40mA, 25Hz</td>
<td>60%</td>
<td>1.96&quot;*2.56'</td>
<td>Screw fasten</td>
<td>65.0<em>50.0</em>8.5</td>
<td>Pin length:8.0mm</td>
<td>79</td>
</tr>
<tr>
<td>HG3-48RNG</td>
<td>48V</td>
<td>3W</td>
<td>75VAC/40mA, 25Hz</td>
<td>58%</td>
<td>1.96&quot;*2.56'</td>
<td>Screw fasten</td>
<td>65.0<em>50.0</em>8.5</td>
<td>Pin length:8.0mm</td>
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</tr>
<tr>
<td>HG30-48RNG</td>
<td>48V</td>
<td>30W</td>
<td>75VAC/400mA, 25Hz</td>
<td>85%</td>
<td>3.94&quot;*3.94'</td>
<td>Screw fasten</td>
<td>100.0<em>100.0</em>12.7</td>
<td>Pin length:6.0mm</td>
<td>83</td>
</tr>
<tr>
<td>HG30-48RNGN</td>
<td>48V</td>
<td>30W</td>
<td>75VAC/400mA, 25Hz</td>
<td>85%</td>
<td>3.94&quot;*3.94'</td>
<td>Screw fasten</td>
<td>100.0<em>100.0</em>12.7</td>
<td>Negative logic/Pin length:6.0mm</td>
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<tr>
<td>HG40-48RNG</td>
<td>48V</td>
<td>40W</td>
<td>75VAC/530mA, 25Hz</td>
<td>85%</td>
<td>3.94&quot;*3.94'</td>
<td>Screw fasten</td>
<td>100.0<em>100.0</em>12.7</td>
<td>Pin length:5.5mm</td>
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<td>HG40-48RNG/95</td>
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<td>40W</td>
<td>95VAC/420mA, 25Hz</td>
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<td>Screw fasten</td>
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<td>75W</td>
<td>75VAC/1A, 25Hz</td>
<td>85%</td>
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<td>Screw fasten</td>
<td>100.0<em>100.0</em>16.0</td>
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</tr>
<tr>
<td>HG75-48RNG/J</td>
<td>48V</td>
<td>75W</td>
<td>75VAC/1A, 25Hz</td>
<td>85%</td>
<td>3.94&quot;*3.94'</td>
<td>Screw fasten</td>
<td>100.0<em>100.0</em>16.0</td>
<td>Pin length:7.5mm</td>
<td>87</td>
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</tbody>
</table>

- New Products
AV10-S  Low Power Series
10 Watt Single Output

Features

• Small size and low profile:
  2.0” x 1.0” x 0.35”
  (50.8mm x 25.4mm x 9.0mm)
• Industry standard footprint
• High efficiency: 82%
• 2:1 wide input voltage of 18-36V, 36-72V
• Isolated output: 3.3V, 5V, 5.2V, 8V, 12V, 15V, 96V

Environmental

• Operating case temperature range:
  -25°C to 95°C
• Storage temperature:
  -40°C to 105°C
• MTBF: See Application Manual

Safety

UL  UL60950
CSA  CSA22.2-60950
TUV/CE  IEC/EN60950

Electrical Specifications

Input

Input Range  18 to 36 Vdc
            36 to 72 Vdc

Output

Voltage Setpoint Accuracy  ± 1%Vo max.
                         (± 2% Vo for 3.3V Output)
Line Regulation  ± 0.2%Vo max.
Load Regulation  ± 0.5%Vo max.
                         (± 1% Vo for 3.3V Output)
Ripple and Noise  100mVpp max.
                         (75mVpp max. for 3.3V Output)
Transient Response  5%Vo max.;
                         recovery <200µSec max.
                         (25% step load change from 50%Io)
                         di / dt ≤1A / 10µs
### Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>24V</td>
<td>3.3V</td>
<td>2.50A</td>
<td>76%</td>
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</tr>
<tr>
<td>24V</td>
<td>5V</td>
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<td>78%</td>
<td>AV10-24S05</td>
</tr>
<tr>
<td>24V</td>
<td>8V</td>
<td>1.20A</td>
<td>82%</td>
<td>AV10-24S08</td>
</tr>
<tr>
<td>24V</td>
<td>12V</td>
<td>0.84A</td>
<td>82%</td>
<td>AV10-24S12</td>
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<td>15V</td>
<td>0.68A</td>
<td>82%</td>
<td>AV10-24S15</td>
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<tr>
<td>48V</td>
<td>3.3V</td>
<td>2.50A</td>
<td>77%</td>
<td>AV10-48S03</td>
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<tr>
<td>48V</td>
<td>5V</td>
<td>2.00A</td>
<td>80%</td>
<td>AV10-48S05</td>
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<td>5.2V</td>
<td>2.00A</td>
<td>77%</td>
<td>AV10-48S05V2</td>
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<td>8V</td>
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<td>82%</td>
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<tr>
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<td>12V</td>
<td>0.84A</td>
<td>85%</td>
<td>AV10-48S12</td>
</tr>
<tr>
<td>48V</td>
<td>15V</td>
<td>0.68A</td>
<td>85%</td>
<td>AV10-48S15</td>
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<tr>
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<td>96V</td>
<td>0.1A</td>
<td>85%</td>
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</table>

### Dimensions

#### Top view

*Note: 1. “Top view” means the logo face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.*

### Pin Assignments

1. -Vin
2. +Vin
3. +Vout
4. -Vout

### Pin Length

6.6mm
AV10-D Low Power Series
10 Watt Dual Outputs

Features

- Small size and low profile: 2.0" x 1.0" x 0.35" (50.8mm x 25.4mm x 9.0mm)
- Industry standard footprint
- High efficiency: 82%
- 2:1 wide input voltage of 18-36V, 36-72V
- Isolated output: ±5V, ±12V, ±15V

Environmental

- Operating case temperature range: -25°C to 95°C
- Storage temperature: -40°C to 105°C
- MTBF: See Application Manual

Electrical Specifications

Input
- Input Range
  - 18 to 36 Vdc
  - 36 to 72 Vdc

Output
- Voltage Setpoint Accuracy
  - ±1%Vo max.
  - (±2%Vo for dual outputs)
- Line Regulation
  - ±0.2%Vo max.
- Load Regulation
  - ±0.5%Vo max.
- Ripple and Noise
  - 100mVpp max.
- Transient Response
  - 5%Vo max.; recovery <200µSec max.
  - (25% step load change from 50%Io)
  - di / dt: 1A / 10µs

Safety

- UL: UL60950
- CSA: CSA22.2-60950
- TUV/CE: IEC/EN60950
## Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>24V</td>
<td>± 5V</td>
<td>± 1A</td>
<td>79%</td>
<td>AV10-24D05</td>
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<tr>
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<td>± 12V</td>
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<td>83%</td>
<td>AV10-24D12</td>
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<td>± 15V</td>
<td>± 0.33A</td>
<td>83%</td>
<td>AV10-24D15</td>
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<tr>
<td>48V</td>
<td>± 5V</td>
<td>± 1A</td>
<td>79%</td>
<td>AV10-48D05</td>
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<tr>
<td>48V</td>
<td>± 12V</td>
<td>± 0.42A</td>
<td>85%</td>
<td>AV10-48D12</td>
</tr>
<tr>
<td>48V</td>
<td>± 15V</td>
<td>± 0.33A</td>
<td>83%</td>
<td>AV10-48D15</td>
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</tbody>
</table>

## Pin Assignments

1. -Vin
2. +Vin
3. +Vout
4. Com
5. -Vout

## Pin Length

6.6mm

Notes:
1. "Top view" means the logo face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
AG15-S High Efficiency Low Power Series
15 Watt Single Output

**Features**
- Small size and low profile:
  2.0” x 1.0” x 0.4”
  (50.8mm x 25.4mm x 10.16mm)
- High efficiency and power density: 87%
- 2:1 wide input voltage of 18-36V, 36-75V
- Isolated output: 2.5V, 3.3V, 5V, 12V,
- Input LVP, output OVP and OCP
- Remote control and trim function

**Environmental**
- Operating case temperature range:
  -40°C to 100°C
- Storage temperature:
  -55°C to 125°C
- MTBF: > 1.5 million hrs

**Safety**
- UL: UL60950
- CSA: CSA22.2-60950
- TUV/CE: IEC/EN60950

**Electrical Specifications**

**Input**
- Input Range
  - 18 to 36 Vdc
  - 36 to 75 Vdc

**Output**
- Voltage Setpoint Accuracy
  - ± 50mV for 2.5, 3.3, 5Vout
  - ± 120mV for 12Vout
- Voltage Adjust
  - 90% to 110% Vo
- Line Regulation
  - ± 0.2%Vo max.
- Load Regulation
  - ± 0.5%Vo max.
- Ripple and Noise
  - 100mVpp max.
  - (120mVpp for 12Vout)
- Transient Response
  - 5%Vo max.; recovery < 200μSec max.
  - (25% step load change from 50%Io)
  - di / dt : 1A / 10μs

**Control**
- Control Voltage
  - Positive logic
    - High=on: 3.5 to 10 Vdc
    - Low=off: -0.7 to 1.2 Vdc
  - Negative logic
    - Low=on: -0.7 to 1.2 Vdc
    - High=off: 3.5 to 10 Vdc
- Control Current: 2 mA max.
## Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
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<tbody>
<tr>
<td>24V</td>
<td>3.3V</td>
<td>4.5A</td>
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<td>AG15-24S03</td>
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<td>4.5A</td>
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</tr>
<tr>
<td>48V</td>
<td>5V</td>
<td>3A</td>
<td>87%</td>
<td>AG15-48S05</td>
</tr>
<tr>
<td>48V</td>
<td>12V</td>
<td>1.25A</td>
<td>87%</td>
<td>AG15-48S12</td>
</tr>
</tbody>
</table>

**Suffix with:**

/\T 10% trim
/N Control pin option with negative logic (low = on, open/high = off).
P Control pin option with positive logic (open/high = on, low = off).

The trim and control pins are not present if the trim and control options are not selected.

## Dimensions

**Top view**

---

**Pin Assignments**

1. CNT
2. -Vin
3. +Vin
4. +Vout
5. Trim
6. -Vout

---

**Pin Length**

Long pin = 5.6 mm /L
Short pin = 2.8 mm /S

---

Notes: 1. "Top view" means the logo face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
AG15-D High Efficiency Low Power Series
15 Watt Dual Outputs

Features

- Small size and low profile: 2.0" x 1.0" x 0.4" (50.8mm x 25.4mm x 10.16mm)
- High efficiency and power density: 86%
- 2:1 wide input voltage of 36-75V
- Isolated output: ±12V
- Input LVP, output OVP and OCP
- Remote control function

Environmental

- Operating case temperature range: -40°C to 100°C
- Storage temperature: -55°C to 125°C
- MTBF: > 2.2 million hrs

Safety

UL UL60950
CSA CSA22.2-60950
TUV/CE IEC/EN60950

Electrical Specifications

Input

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Range</td>
<td>36 to 75 Vdc</td>
</tr>
</tbody>
</table>

Output

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage Setpoint Accuracy</td>
<td>±1%Vo max.(+12V output)</td>
</tr>
<tr>
<td></td>
<td>±5%Vo max.(-12V output)</td>
</tr>
<tr>
<td>Line Regulation</td>
<td>±0.2%Vo max.(+12V output)</td>
</tr>
<tr>
<td></td>
<td>±2%Vo max.(-12V output)</td>
</tr>
<tr>
<td>Load Regulation</td>
<td>±0.5%Vo max.(+12V output)</td>
</tr>
<tr>
<td></td>
<td>±10%Vo max.(-12V output)</td>
</tr>
<tr>
<td>Ripple and Noise</td>
<td>120mVpp max.</td>
</tr>
<tr>
<td>Transient Response</td>
<td>5%Vo max. ; recovery &lt;200μSec max.</td>
</tr>
<tr>
<td>(25% step load change from 50%Io)</td>
<td>di / dt :1A / 10μs</td>
</tr>
</tbody>
</table>

Control

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Voltage</td>
<td>Positive logic</td>
</tr>
<tr>
<td></td>
<td>High=on</td>
</tr>
<tr>
<td></td>
<td>Low=off</td>
</tr>
<tr>
<td>Negative logic</td>
<td>Low=on</td>
</tr>
<tr>
<td></td>
<td>High=off</td>
</tr>
<tr>
<td>Control Current</td>
<td></td>
</tr>
</tbody>
</table>
### Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>48V</td>
<td>± 12V</td>
<td>± 0.63A</td>
<td>86%</td>
<td>AG15-48D12</td>
</tr>
</tbody>
</table>

**Suffix with:**
/N Control pin option with negative logic (low = on, open/high = off).
/P Control pin option with positive logic (open/high = on, low = off).

The control pins are not present if the control options are not selected.

### Dimensions

**Top view**

**Pin Assignments**

1. CNT
2. -Vin
3. +Vin
4. +Vout
5. Com
6. -Vout

**Pin Length**

- Long pin = 5.6 mm /L
- Short pin = 2.8 mm /S

Notes:
1. "Top view" means the logo face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
AG15B-S High Efficiency Low Power Series
15 Watt Single Output

Features
- Small size and low profile: 2.0" x 1.0" x 0.4" (50.8mm x 25.4mm x 10.16mm)
- High efficiency and power density: 85% (@5Vout)
- 2:1 wide input voltage of 36-75V
- Isolated output: 3.3V, 5V
- Input LVP, output OVP and OCP
- Remote control and trim function

Environmental
- Operating case temperature range: -40°C to 65°C
- Storage temperature: -55°C to 125°C
- MTBF: > 2.0 million hrs

Safety
- UL UL60950
- CSA CSA22.2-60950
- TUV/CE IEC/EN60950

Electrical Specifications

<table>
<thead>
<tr>
<th>Input</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Range</td>
<td>36 to 75 Vdc</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage Setpoint Accuracy</td>
<td>± 60mV for 3.3Vout</td>
</tr>
<tr>
<td>± 50mV for 5Vout</td>
<td></td>
</tr>
<tr>
<td>Voltage Adjust</td>
<td>90% to 110%Vout</td>
</tr>
<tr>
<td>Line Regulation</td>
<td>± 10mV max.</td>
</tr>
<tr>
<td>Load Regulation</td>
<td>± 25mV max.</td>
</tr>
<tr>
<td>Ripple and Noise</td>
<td>100mVpp max.</td>
</tr>
<tr>
<td>Transient Response</td>
<td>5%Vo max. ; recovery &lt;200uSec max.</td>
</tr>
<tr>
<td>(25%-50%-25%Io)</td>
<td></td>
</tr>
<tr>
<td>di / dt :1A / 10µs</td>
<td></td>
</tr>
</tbody>
</table>

Control
- Control Voltage
  - Positive logic
    - High=on 3.5 to 12 Vdc
    - Low=off -0.7 to 1.2 Vdc
  - Negative logic
    - Low=on -0.7 to 1.2 Vdc
    - High=off 3.5 to 12 Vdc
- Control Current 1.5 mA max.
**Ordering Information**

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>48V</td>
<td>3.3V</td>
<td>4.5A</td>
<td>84%</td>
<td>AG15B-48S03</td>
</tr>
<tr>
<td>48V</td>
<td>5V</td>
<td>3A</td>
<td>85%</td>
<td>AG15B-48S05</td>
</tr>
</tbody>
</table>

**Suffix with:**

/T 10% trim
/N Control pin option with negative logic (low = on, open/high = off).
/P Control pin option with positive logic (open/high = on, low = off).

The trim and control pins are not present if the trim and control options are not selected.

**Dimensions**

**Top view**

**Pin Assignments**

1. CNT
2. -Vin
3. +Vin
4. +Vout
5. Trim
6. -Vout

**Pin Length**

<table>
<thead>
<tr>
<th>Length</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.8mm</td>
<td>-4</td>
</tr>
<tr>
<td>3.8mm</td>
<td>-6</td>
</tr>
<tr>
<td>2.8mm</td>
<td>-8</td>
</tr>
<tr>
<td>5.8mm</td>
<td>-None</td>
</tr>
</tbody>
</table>

Notes: 1. "Top view" means the logo face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
AG25-S High Efficiency Low Power Series
25 Watt Single Output

Features
- Small size and low profile: 2" x 1.6" x 0.38" (50.8mm x 40.6mm x 9.66mm)
- Industry standard footprint and open frame
- High efficiency and power density: 87%
- 2:1 wide input voltage of 18-36V, 36-75V
- Isolated output: 3.3V, 5V, 8V, 12V, 15V
- Remote control and trim function
- Input under-voltage shutdown
- Output OVP and OCP protection

Environmental
- Board temperature range: -40°C to 100°C
- Operating Ambient temperature range: -40°C to 55°C
- Storage temperature: -55°C to 125°C
- MTBF: > 2.0 million hrs

Safety
- UL: UL60950
- CSA: CSA22.2-60950
- TUV/CE: IEC/EN60950

Electrical Specifications

Input
- Input Range
  - 18 to 36 Vdc
  - 36 to 75 Vdc

Output
- Voltage Setpoint Accuracy
  ± 1%Vo max.
- Voltage Adjust
  90% to 110% Vo
- Line Regulation
  ± 0.2%Vo max.
- Load Regulation
  ± 0.5%Vo max.
- Ripple and Noise
  - 75mVpp max. for 3.3 or 5Vout
  - 90mVpp max. for 8Vout
  - 150mVpp max. for 12 or 15Vout
- Transient Response
  3%Vo max.; recovery <200μSec max.
  (25% step load change from 50%Io)
  di / dt :1A / 10μs

Control
- Control Voltage
  - Positive logic
    - High=on: 3.5 to 12 Vdc
    - Low=off: -0.7 to 0.8 Vdc
  - Negative logic
    - Low=on: -0.7 to 0.8 Vdc
    - High=off: 3.5 to 12 Vdc
- Control Current
  2 mA max.
### Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>24V</td>
<td>3.3V</td>
<td>6A</td>
<td>83%</td>
<td>AG25-24S03</td>
</tr>
<tr>
<td>24V</td>
<td>5V</td>
<td>5A</td>
<td>85%</td>
<td>AG25-24S05</td>
</tr>
<tr>
<td>48V</td>
<td>3.3V</td>
<td>6A</td>
<td>85%</td>
<td>AG25-48S03</td>
</tr>
<tr>
<td>48V</td>
<td>5V</td>
<td>5A</td>
<td>87%</td>
<td>AG25-48S05</td>
</tr>
<tr>
<td>48V</td>
<td>8V</td>
<td>3.2A</td>
<td>85%</td>
<td>AG25-48S08</td>
</tr>
<tr>
<td>48V</td>
<td>12V</td>
<td>2.1A</td>
<td>87%</td>
<td>AG25-48S12</td>
</tr>
<tr>
<td>48V</td>
<td>15V</td>
<td>1.67A</td>
<td>87%</td>
<td>AG25-48S15</td>
</tr>
</tbody>
</table>

### Pin Assignments

1. CNT
2. -Vin
3. +Vin
4. Trim
5. -Vo
6. +Vo

### Pin Length

- 4.8mm: -4
- 3.8mm: -6
- 2.8mm: -8
- 5.8mm: None

---

Notes:
1. "Top view" means the logo face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
AG25-D High Efficiency Low Power Series
30 Watt Dual Outputs

Features
- Small size and low profile: 2" x 1.6" x 0.38" (50.8mm x 40.6mm x 9.66mm)
- Industry standard footprint and open frame
- High efficiency and power density: 87%
- 2:1 wide input voltage of 36-75V
- Isolated output: ±5V, ±12V, ±15V
- Remote control and trim function
- Input under-voltage shutdown
- Output OVP and OCP protection

Environmental
- Board temperature range: -40°C to 100°C
- Operating case temperature range: -40°C to 55°C
- Storage temperature: -55°C to 125°C
- MTBF: > 2.0 million hrs

Safety
UL UL60950
CSA CSA22.2-60950
TUV/CE IEC/EN60950

Electrical Specifications

Input
- Input Range: 36 to 75 Vdc

Output
- Voltage Setpoint Accuracy: ±1%Vo max.
- Voltage Adjust: 90% to 110% Vo
- Line Regulation: ±0.2%Vo max.
- Load Regulation: ±0.5%Vo max.
- Ripple and Noise: 150mVpp max.
- Transient Response: 3%Vo max.; recovery <200uSec max.
  (25% step load change from 50%Io)
  di / dt : 1A / 10μs

Control
- Control Voltage
  Positive logic
  High=on: 3.5 to 12 Vdc
  Low=off: -0.7 to 0.8 Vdc
  Negative logic
  Low=on: -0.7 to 0.8 Vdc
  High=off: 3.5 to 12 Vdc
- Control Current: 2 mA max.
### Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>48V</td>
<td>± 5V</td>
<td>3.0A</td>
<td>84%</td>
<td>AG25-48D05</td>
</tr>
<tr>
<td>48V</td>
<td>± 12V</td>
<td>1.25A</td>
<td>87%</td>
<td>AG25-48D12</td>
</tr>
<tr>
<td>48V</td>
<td>± 15V</td>
<td>1.0A</td>
<td>87%</td>
<td>AG25-48D15</td>
</tr>
</tbody>
</table>

### Dimensions

**Top view**

- Pin Assignments:
  1. CNT
  2. -Vin
  3. +Vin
  4. Trim
  5. -Vo
  6. COM
  7. +Vo

- Pin Length:
  - 4.8mm: -4
  - 3.8mm: -6
  - 2.8mm: -8
  - 5.8mm: None

Notes:
1. "Top view" means the logo face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
AVQ30B-D Quarter Brick Series
48V Input, Dual Outputs

Features

• Standard Quarter Brick:
  2.28" x 1.45" x 0.43"
  (36.8mm x 57.9mm x10.9mm)
• 2:1 input voltage: 36-75V
• Output power: 30W
• Isolated dual output: 3.3V/1.5V, 3.3V/1.2V
• High efficiency: 84%
• Remote Control, Trim Function
• Overcurrent Protection
• Overvoltage Protection
• Overtemperature Protection
• Basic Isolation

Environmental

• Operating temperature range:
  -40°C to 60°C
• Over Temperature Protection:
  101°C to 115°C
• Storage temperature:
  -55°C to 125°C
• MTBF: > 1.8 million hrs

Safety

UL UL60950
CSA CSA22.2-60950
TUV/CE IEC/EN60950

Electrical Specifications

Input

Input Range
36 to 75 Vdc

Output

Voltage Setpoint Accuracy
50mV max. for 3.3Vout
20mV max. for 1.5V,1.2Vout
Voltage Adjust
80% to 110% Vo
  only for second output(1.5V/1.2V)
Line Regulation
8mV max. for 3.3Vout
5mV max. for 1.5V,1.2Vout
Load Regulation
20mV max. for 3.3Vout
20mV max. for, 1.5V,1.2Vout
Ripple and Noise
50mVpp max.
Transient Response
5%Vo max.;
  recovery <200uSec max.
  (25% step load change from 50%Io)
  di/dt:1A/µs

Control

Control Voltage
Positive logic
  High=on 3.5 to 12 Vdc
  Low=off -0.7 to 1.8 Vdc
Negative logic
  Low=on -0.7 to 1.8 Vdc
  High=off 3.5 to 12 Vdc
Control Current
2 mA max.
### Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>48V</td>
<td>3.3V</td>
<td>6A</td>
<td>84%</td>
<td>AVQ30B-48D3312</td>
</tr>
<tr>
<td></td>
<td>1.2V</td>
<td>7A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>48V</td>
<td>3.3V</td>
<td>6A</td>
<td>84%</td>
<td>AVQ30B-48D3315</td>
</tr>
<tr>
<td></td>
<td>1.5V</td>
<td>7A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Dimensions

**Top view**

### Pin Assignments

1. +Vin
2. CNT
3. -Vin
4. +Vo2 (1.8/1.5/1.2V)
5. COM
6. Trim
7. +Vo1 (3.3V)

### Pin Length

- 4.8mm: -4
- 3.8mm: -6
- 2.8mm: -8
- 5.8mm: None

---

Notes:
1. "Top view" means the logo face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
AVQ50/75-D 1/4 Brick Series
50-75W Watt Dual Outputs

**Features**

- Standard quarter brick:
  2.3" x 1.45" x 0.5"
  (58.4mm x 36.8mm x 12.7mm)
- 2:1 Input voltage: 36-75V
- Isolated output: 3.3V/1.5V (1.8V/1.2V)
- High efficiency: 88%
- 1V2/1V5/1V8 output can be trimmed
- Remote control, trim function

**Electrical Specifications**

**Input**

- Input Range 36 to 75 Vdc

**Output**

- Voltage Setpoint Accuracy ± 1 %Vo max
- Voltage Adjust 80% to 110% Vo
- Line Regulation 0.5%Vo1 max.
  0.5%Vo2 max.
- Load Regulation 1.5%Vo1 max.
  1.5%Vo2 max.
- Ripple and Noise 50mVpp
- Transient Response 5%Vo max.;
  recovery <200uSec max.
  (25% step load change from 50%Io)
  di/dt:1A/µs

**Control**

- Control Voltage
  Positive logic
  High=on 3.5 to 12 Vdc
  Low=off 0 to 1.2 Vdc
  Negative logic
  Low=on 0 to 1.2 Vdc
  High=off 3.5 to 12 Vdc
- Control Current 2.0 mA max.

**Environmental**

- Operating case temperature range:
  -25°C to 100°C
- Storage temperature:
  -55°C to 120°C
- Over Temperature Protection:
  101°C to 125°C
- MTBF: > 2 million hrs

**Safety**

- UL UL60950
- CSA CSA22.2-60950
- TUV/CE IEC/EN60950
## Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>48V</td>
<td>3.3V</td>
<td>8A</td>
<td>87%</td>
<td>AVQ50-48D3312</td>
</tr>
<tr>
<td>1.2V</td>
<td>8A</td>
<td>13A</td>
<td>88%</td>
<td>AVQ50-48D3315</td>
</tr>
<tr>
<td>48V</td>
<td>3.3V</td>
<td>1.5V</td>
<td>88%</td>
<td>AVQ50-48D3318</td>
</tr>
<tr>
<td>1.8V</td>
<td>10A</td>
<td>10A</td>
<td>89%</td>
<td>AVQ75-48D3315</td>
</tr>
<tr>
<td>48V</td>
<td>3.3V</td>
<td>1.5V</td>
<td>89%</td>
<td>AVQ75-48D3315</td>
</tr>
</tbody>
</table>

**Notes:**
1. "Top view" means the base plate face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.

## Dimensions

### Top view

<table>
<thead>
<tr>
<th>Pin Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. +Vin</td>
</tr>
<tr>
<td>2. CNT</td>
</tr>
<tr>
<td>3. -Vin</td>
</tr>
<tr>
<td>4. +Vout2</td>
</tr>
<tr>
<td>5. COM</td>
</tr>
<tr>
<td>6. Trim</td>
</tr>
<tr>
<td>7. +Vout1</td>
</tr>
</tbody>
</table>
AVQ50-S Quarter Brick Series
48V Input, Single Output

Features

- Standard quarter brick (open frame/baseplate):
  1.45" x 2.28" x 0.35"/0.45"
  (36.8mm x 57.9mm x 9.0mm/11.5mm)
- 2:1 input voltage: 36-75V
- Output power: 14.4W-50W
- Isolated output: 1.2V, 1.5V, 1.8V, 3.3V, 8V
- Super high efficiency: 90% (@8Vout)
- Remote control, trim, sense function
- Basic isolation

Environmental

- Operating Ambient Temperature Range:
  -40°C to 55°C
- Over Temperature Protection:
  101°C to 120°C (Board)
- Storage Temperature:
  -55°C to 125°C
- MTBF: > 2 million hrs

Safety

UL: UL60950
CSA: CSA22.2-60950
TUV/CE: IEC/EN60950

Electrical Specifications

**Input**

- Input Range: 36 to 75 Vdc

**Output**

- Voltage Setpoint Accuracy:
  - ±100mV max. for 8Vout
  - ±50mV max. for 5V, 3.3Vout
  - ±30mV max. for 1.8Vout
  - ±20mV max. for 1.2Vout
- Voltage Adjust: 80% to 110% Vo
- Line Regulation: ±0.2%Vo
- Load Regulation:
  - ±20mv max. for 8Vo, 3.3Vout
  - ±10mv max. for 1.8V0, 1.5V0, 1.2V0
- Ripple and Noise:
  - 150mVpp max. for 5V, 8Vout
  - 120mVpp max. for 3.3Vout
  - 100mVpp max. for 1.8V, 1.5Vout
  - 80mVpp max. for 1.2Vout
- Transient Response:
  - 5%Vo max. ; recovery <200uSec max.
  - (25% step load change from 50%Io)
  - di/dt : 1A/10µs
  - 200mV max. ; recovery <200uSec max.
  - (25% step load change from 50%Io)
  - di/dt : 1A/µs, only for ≤ 3.3Vout.

Control

- Control Voltage
  - Positive logic
    - High=on: 3.5 to 12 Vdc
    - Low=off: -0.7 to 1.2 Vdc
  - Negative logic
    - Low=on: -0.7 to 1.2 Vdc
    - High=off: 3.5 to 12 Vdc
- Control Current: 1 mA max.
### Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>48V</td>
<td>1.2V</td>
<td>12A</td>
<td>80%</td>
<td>AVQ50-48S1V2</td>
</tr>
<tr>
<td>48V</td>
<td>1.5V</td>
<td>12A</td>
<td>82%</td>
<td>AVQ50-48S1V5</td>
</tr>
<tr>
<td>48V</td>
<td>1.8V</td>
<td>12A</td>
<td>84%</td>
<td>AVQ50-48S1V8</td>
</tr>
<tr>
<td>48V</td>
<td>3.3V</td>
<td>12A</td>
<td>88%</td>
<td>AVQ50-48S3V3</td>
</tr>
<tr>
<td>48V</td>
<td>8V</td>
<td>6.3A</td>
<td>90%</td>
<td>AVQ50-48S08</td>
</tr>
</tbody>
</table>

#### Suffix with:
- **-B**: with baseplate omitting is open frame
- **-N**: negative logic (low = on, open/high = off), omitting is negative logic
- **-P**: positive logic (low = on, open/high = off).

### Dimensions

#### Top view

- Pin Assignments
  1. +Vin
  2. CNT
  3. -Vin
  4. -Vout
  5. -Sense
  6. Trim
  7. +Sense
  8. +Vout

#### Pin Length

<table>
<thead>
<tr>
<th>Pin Length</th>
<th>Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.8mm</td>
<td>-4</td>
</tr>
<tr>
<td>3.8mm</td>
<td>-6</td>
</tr>
<tr>
<td>2.8mm</td>
<td>-8</td>
</tr>
<tr>
<td>5.8mm</td>
<td>None</td>
</tr>
</tbody>
</table>

Notes:
1. "Top view" means the logo face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
AVQ65-48D12 1/4 Brick
65W Dual Output

**Features**
- 65 watts of output power
- Standard half brick 2.28" x 1.45" x 0.4"
- Isolated Output
- Control Function
- Trim Function
- Overvoltage Protection
- Overcurrent Protection
- Basic Isolation

**Environmental**
- Operating case temperature range: 
  -25°C to 100°C
- Storage temperature: 
  -55°C to 125°C
- Over Temperature Protection: 
  101°C to 120°C
- MTBF: > 2 million hrs

**Electrical Specifications**

**Input**
- Input Range: 36 to 75 Vdc

**Output**
- Voltage Setpoint Accuracy: 12~12.2V
- Line Regulation: ± 0.2%Vo max.
- Load Regulation: ± 0.5%Vo max.
- Ripple and Noise: 150mVpp max.
- Transient Response: 300mV max.; recovery <300μSec max.

(25% step load change from 50%Io)
- $\text{di/dt: 0.1A/μs}$

**Control**
- Control Voltage
  - Positive logic: High=on 3.5 to 12 Vdc
  - Low=off -0.7 to 1.2 Vdc
  - Negative logic: Low=on -0.7 to 12 Vdc
  - High=off 3.5 to 12 Vdc
- Control Current: 2 mA max.

**Safety**
- UL: UL60950
- CSA: CSA22.2-60950
- TUV/CE: IEC/EN60950
### Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>48V</td>
<td>± 12V</td>
<td>2.7A</td>
<td>89%</td>
<td>AVQ65-48D12-6</td>
</tr>
</tbody>
</table>

### Dimensions

*Top view*

#### Pin Assignments
1. +Vin
2. CNT
3. -Vin
4. -Vout
5. COM
6. Trim
7. +Vout

#### Pin Length
- 4.8mm: -4
- 3.8mm: -6
- 2.8mm: -8
- 5.8mm: None

Notes:
1. "Top view" means the base plate face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
AVQ75-S Quarter Brick Series
48V Input, Single Output

Features

- Standard quarter brick (open frame/baseplate): 1.45" x 2.28" x 0.35"/0.45"
  (36.8mm x 57.9mm x 9.0mm/11.5mm)
- 2:1 input voltage: 36-75V
- Output power: 49.5W
- Isolated output: 3.3V
- Super high efficiency: 88.5%
- Remote control, trim, sense function
- Basic Isolation

Environmental

- Operating temperature range:
  -40°C to 70°C
- Over Temperature Protection:
  105°C to 125°C
- Storage temperature:
  -55°C to 125°C
- MTBF: > 2 million hrs

Safety

UL     UL60950
CSA    CSA22.2-60950
TUV/CE IEC/EN60950

Electrical Specifications

Input

<table>
<thead>
<tr>
<th>Input Range</th>
<th>36 to 75 Vdc</th>
</tr>
</thead>
</table>

Output

<table>
<thead>
<tr>
<th>Voltage Setpoint Accuracy</th>
<th>± 50mV max. for 3.3V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage Adjust</td>
<td>80% to 110% Vo</td>
</tr>
<tr>
<td>Line Regulation</td>
<td>5mV</td>
</tr>
<tr>
<td>Load Regulation</td>
<td>5mV</td>
</tr>
<tr>
<td>Ripple and Noise</td>
<td>100mVpp max. for 3.3Vout</td>
</tr>
<tr>
<td>Transient Response</td>
<td>90mV typ.;</td>
</tr>
<tr>
<td>(25% step load change from 50%Io)</td>
<td>&lt; 70Sec typ.</td>
</tr>
<tr>
<td>di/dt : 1A/10µs</td>
<td>150mV typ.;</td>
</tr>
</tbody>
</table>

Control

Control Voltage

Positive logic
- High=on 3.5 to 12 Vdc
- Low=off -0.7 to 0.8 Vdc

Negative logic
- Low=on -0.7 to 0.8 Vdc
- High=off 3.5 to 12 Vdc

Control Current 1 mA max.
Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>48V</td>
<td>3.3V</td>
<td>15A</td>
<td>88.5%</td>
<td>AVQ75-48S3V3</td>
</tr>
</tbody>
</table>

Suffix with:
- B: with baseplate omitting is open frame
- N: negative logic (low = on, open/high = off), omitting is negative logic
- P: positive logic (low = on, open/high = off).

Dimensions

Top view

Pin Assignments

1. +Vin
2. CNT
3. -Vin
4. -Vout
5. -Sense
6. Trim
7. +Sense
8. +Vout

Pin Length

<table>
<thead>
<tr>
<th>Pin Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.8mm</td>
</tr>
<tr>
<td>3.8mm</td>
</tr>
<tr>
<td>2.8mm</td>
</tr>
<tr>
<td>5.8mm</td>
</tr>
</tbody>
</table>

Notes:
1. "Top view" means the logo face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
AVQ100-S Quarter Brick Series
48V Input, Single Output

Features

- Standard quarter brick:
  1.45" x 2.28" x 0.50"
  (36.8mm x 57.9mm x 12.7mm)
- 2:1 input voltage: 36-75V
- Output power: 30W-100W
- Isolated output: 1.5V, 1.8V, 3.3V, 5V
- Super high efficiency: 90% (@5Vout)
- Remote control, trim, sense function

Environmental

- Wide case temperature range:
  -40°C to 100°C (Baseplate)
- Over Temperature Protection:
  100°C to 120°C
- Storage temperature:
  -55°C to 125°C
- MTBF: > 2 million hrs

Electrical Specifications

**Input**

- Input Range: 36 to 75 Vdc

**Output**

- Voltage Setpoint Accuracy: 2%Vo max.
- Voltage Adjust: 80% to 110% Vo
- Line Regulation: ±0.2%Vo max.
- Load Regulation: ±0.5%Vo max.
- Ripple and Noise: 200mVpp
  (150mVpp max for 1.8, 1.5Vout)
- Transient Response:
  - 2%Vo typ
  - 100µs typ
  (25% step load change from 50%Io)
- di/dt: 1A/10µs

**Control**

- Control Voltage
  - Positive logic
    - High=on: 3.5 to 15 Vdc
    - Low=off: -0.7 to 1.8 Vdc
  - Negative logic
    - Low=on: -0.7 to 1.8 Vdc
    - High=off: 3.5 to 15 Vdc
- Control Current: 2 mA max.

Safety

- UL UL60950
- CSA CSA22.2-60950
- TUV/CE IEC/EN60950
### Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>48V</td>
<td>1.5V</td>
<td>20A</td>
<td>85%</td>
<td>AVQ100-48S1V5</td>
</tr>
<tr>
<td>48V</td>
<td>1.8V</td>
<td>20A</td>
<td>85%</td>
<td>AVQ100-48S1V8</td>
</tr>
<tr>
<td>48V</td>
<td>3.3V</td>
<td>20A</td>
<td>89%</td>
<td>AVQ100-48S3V3</td>
</tr>
<tr>
<td>48V</td>
<td>5V</td>
<td>20A</td>
<td>90%</td>
<td>AVQ100-48S05</td>
</tr>
</tbody>
</table>

### Dimensions

#### Pin Assignments

1. +Vin
2. CNT
3. -Vin
4. -Vout
5. -Sense
6. Trim
7. +Sense
8. +Vout

#### Pin Length

<table>
<thead>
<tr>
<th>Pin Length</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4.8mm</td>
<td>-4</td>
</tr>
<tr>
<td>3.8mm</td>
<td>-6</td>
</tr>
<tr>
<td>2.8mm</td>
<td>-8</td>
</tr>
<tr>
<td>5.8mm</td>
<td>None</td>
</tr>
</tbody>
</table>

Notes:
1. "Top view" means the base plate face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
# AVQ200-S Quarter Brick Series
48V Input, Single Output

## Features
- Standard Quarter Brick: 2.28" x 1.45" x 0.38" mm³
- Ultra High Efficiency
- Delivers up to 40A output current
- Basic Isolation
- Remote Control
- Trim Function
- Overcurrent Protection
- Overvoltage Protection
- Overtemperature Protection

## Environmental
- Operating board temperature: -40°C to 100°C
- Over Temperature Protection: 110°C (TYP)
- Storage temperature: -55°C to 125°C
- MTBF: > 2 million hrs

## Electrical Specifications

<table>
<thead>
<tr>
<th><strong>Input</strong></th>
<th>36 to 75 Vdc</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Output</strong></td>
<td></td>
</tr>
<tr>
<td>Voltage Setpoint Accuracy</td>
<td>± 50mV max. for 3.3Vout</td>
</tr>
<tr>
<td></td>
<td>± 40mV max. for 2.5Vout</td>
</tr>
<tr>
<td></td>
<td>± 30mV max. for 1.8Vout</td>
</tr>
<tr>
<td></td>
<td>± 20mV max. for 1.5V, 1.2Vout</td>
</tr>
<tr>
<td>Voltage Adjust</td>
<td>80% to 110% Vo</td>
</tr>
<tr>
<td>Line Regulation</td>
<td>8mV max. for 3.3V, 2.5V Vout</td>
</tr>
<tr>
<td>Load Regulation</td>
<td>5mV max. for 3.3V, 1.5V, 1.2V Vout</td>
</tr>
<tr>
<td></td>
<td>15mV max. for 3.3V, 2.5V Vout</td>
</tr>
<tr>
<td>Ripple and Noise</td>
<td>120mVpp max. for 3.3Vout</td>
</tr>
<tr>
<td>(Peak-to-Peak)</td>
<td>100mVpp max. for 2.5V, 1.8V, 1.5Vout</td>
</tr>
<tr>
<td></td>
<td>80mVpp max. for 1.2Vout</td>
</tr>
<tr>
<td>Transient Response</td>
<td>5%Vo max. for 3.3V, 2.5V, 1.8V Vout</td>
</tr>
<tr>
<td></td>
<td>6%Vomax. for 1.5V, 1.2V Vout</td>
</tr>
<tr>
<td></td>
<td>recovery &lt;400uSec max.</td>
</tr>
<tr>
<td>Control Voltage</td>
<td>3.5 to 12 Vdc</td>
</tr>
<tr>
<td>Positive logic</td>
<td>-0.7 to 1.2 Vdc</td>
</tr>
<tr>
<td>Negative logic</td>
<td>-0.7 to 1.2 Vdc</td>
</tr>
<tr>
<td>Control Current</td>
<td>1 mA max.</td>
</tr>
</tbody>
</table>

## Safety
- UL: UL60950
- CSA: CSA22.2-60950
- TUV/CE: IEC/EN60950
Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>48V</td>
<td>1.2V</td>
<td>40A</td>
<td>85%</td>
<td>AVQ200-48S1V2</td>
</tr>
<tr>
<td>48V</td>
<td>1.5V</td>
<td>40A</td>
<td>86%</td>
<td>AVQ200-48S1V5</td>
</tr>
<tr>
<td>48V</td>
<td>1.8V</td>
<td>40A</td>
<td>87%</td>
<td>AVQ200-48S1V8</td>
</tr>
<tr>
<td>48V</td>
<td>2.5V</td>
<td>40A</td>
<td>88.5%</td>
<td>AVQ200-48S2V5</td>
</tr>
<tr>
<td>48V</td>
<td>3.3V</td>
<td>35A</td>
<td>90%</td>
<td>AVQ200-48S3V3</td>
</tr>
</tbody>
</table>

Pin Assignments

1. +Vin
2. CNT
3. -Vin
4. -Vout
5. -Sense
6. Trim
7. +Sense
8. +Vout

Pin Length

<table>
<thead>
<tr>
<th>Pin</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.8mm</td>
<td>-4</td>
</tr>
<tr>
<td>3.8mm</td>
<td>-6</td>
</tr>
<tr>
<td>2.8mm</td>
<td>-8</td>
</tr>
<tr>
<td>5.8mm</td>
<td>None</td>
</tr>
</tbody>
</table>

Notes:
1. “Top view” means the logo face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
# AGQ100-S Quarter Brick Series

## Features
- Standard quarter brick (open frame/baseplate): 1.45" x 2.28" x 0.4"/0.5" (36.8mm x 57.9mm x 10.2mm/12.7mm)
- 2:1 input voltage: 36-75V
- Output power: 14.4W-100W
- Isolated output: 2.5V, 3.3V, 5V, 12V
- Super high efficiency: 90%
- Remote control, trim, sense function
- Basic Isolation

## Electrical Specifications

### Input
- Input Range 36 to 75 Vdc

### Output
- Voltage Setpoint Accuracy ± 40mV max. for 2.5Vout
  ± 50mV max. for 5V, 3.3Vout
  ± 50mV max. for 5Vout
  ± 120mV max. for 12Vout
- Voltage Adjust 80% to 110% Vo
- Line Regulation 12V:12mV;5V-2.5V:5mV
- Load Regulation 12V:25mV;5V-2.5V:10mV
- Ripple and Noise 180mVpp max. for 12V
  120mVpp max. for 5V
  100mVpp max. for 3.3V,2.5V
- Transient Response 4%Vo max.;
  (25% step load change from 50%Io)
  $\frac{di}{dt} : 1A/\mu s$ recovery $<400uSec$ max. for 5V-2.5V
  $<700uSec$ max. for 12V
  200mV max. for 3.3V,2.5V
  $\frac{di}{dt} : 1A/\mu s$ recovery $<400uSec$ max. for 3.3V,2.5V

### Control
- Control Voltage
  Positive logic
    - High=on 3.5 to 12 Vdc
    - Low=off -0.7 to 0.8 Vdc
  Negative logic
    - Low=on -0.7 to 0.8 Vdc
    - High=off 3.5 to 12 Vdc
- Control Current 1 mA max.

## Environmental
- Operating temperature range: -40°C to 70°C
- Over Temperature Protection: 106°C to 125°C
- Storage temperature: -55°C to 125°C
- MTBF: > 2 million hrs

## Safety
- UL UL60950
- CSA CSA22.2-60950
- TUV/CE IEC/EN60950
Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>48V</td>
<td>2.5V</td>
<td>25A</td>
<td>88%</td>
<td>AGQ100-48S2V5</td>
</tr>
<tr>
<td>48V</td>
<td>3.3V</td>
<td>25A</td>
<td>89.5%</td>
<td>AGQ100-48S3V3</td>
</tr>
<tr>
<td>48V</td>
<td>5V</td>
<td>20A</td>
<td>90%</td>
<td>AGQ100-48S05</td>
</tr>
<tr>
<td>48V</td>
<td>12V</td>
<td>8.33A</td>
<td>90%</td>
<td>AGQ100-48S12</td>
</tr>
</tbody>
</table>

Suffix with:
- B: with baseplate omitting is open frame
- N: negative logic (low = on, open/high = off), omitting is negative logic
- P: positive logic (low = on, open/high = off).

Dimensions

Top view

Notes: M3 hole is only for 3.3V, 5V

Pin Assignments

1. +Vin
2. CNT
3. -Vin
4. -Vout
5. -Sense
6. Trim
7. +Sense
8. +Vout

Pin Length

- 4.8mm: -4
- 3.8mm: -6
- 2.8mm: -8
- 5.8mm: None

Notes: 1. "Top view" means the logo face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
AGQ200/300-S Quarter Brick Series
48V Input, Single Output

Features
- Standard Quarter Brick: 2.28" x 1.45" x 0.38" mm³
- Ultra High Efficiency
- Delivers up to 60A output current
- Basic Isolation
- Remote Control
- Trim Function
- Overcurrent Protection
- Overvoltage Protection
- Overtemperature Protection

Environmental
- Operating board temperature: -40°C to 100°C
- Over Temperature Protection: 110°C (TYP)
- Storage temperature: -55°C to 125°C
- MTBF: > 2 million hrs

Safety
- UL UL60950
- CSA CSA22.2-60950
- TUV/CE IEC/EN60950

Electrical Specifications

Input
- Input Range: 36 to 75 Vdc

Output
- Voltage Setpoint Accuracy: ±50mV max. for 3.3Vout
- ±20mV max. for 1.5Vout
- Voltage Adjust: 80% to 110% Vo
- Line Regulation: 10mV
- Load Regulation: 10mV
- Ripple and Noise (Peak-to-Peak): 120mVpp max. for 3.3Vout
- 100mVpp max. for 2.5V, 1.8V, 1.5Vout

Transient Response
- (25% step load change from 50% Io)
  - di/dt: 1A/10µs
    - 90mV max. for 1.5V
    - 120mV max. for 3.3V
    - recovery <300uSec max.
  - di/dt: 1A/µs
    - 180mV max. for 3.3V
    - 150mV max. for 1.5V
    - recovery <400uSec max.

Control
- Control Voltage
  - Positive logic
    - High=on: 3.5 to 12 Vdc
    - Low=off: -0.7 to 1.2 Vdc
  - Negative logic
    - Low=on: -0.7 to 1.2 Vdc
    - High=off: 3.5 to 12 Vdc
- Control Current: 1 mA max.
### Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>48V</td>
<td>1.5V</td>
<td>60A</td>
<td>88%</td>
<td>AGQ300-48S1V5</td>
</tr>
<tr>
<td>48V</td>
<td>3.3V</td>
<td>40A</td>
<td>91.5%</td>
<td>AGQ200-48S3V3</td>
</tr>
</tbody>
</table>

### Dimensions

**Top View**

### 3.3V Pin Assignments
1. +Vin
2. CNT
3. -Vin
4. -Vo
5. -Sense
6. Trim
7. + Sense
8. + Vo

### 1.5V Pin Assignments
1. +Vin
2. CNT
3. -Vin
4. +V0
5. -Vo
6. -Sense
7. Trim
8. + Sense
9. + V0
10. - V0

**Notes:**
1. "Top view" means the logo face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
# AVO50/75-S Eighth Brick Series

**48V Input, Single Output**

## Features
- Standard Eighth Brick: 2.28” x 0.9” x 0.36” mm³
- Ultra High Efficiency
- Delivers up to 25A output current
- Basic Isolation
- Remote Control
- Trim Function
- Overcurrent Protection
- Overvoltage Protection
- Overtemperature Protection

## Environmental
- Operating Ambient temperature: -40°C to 85°C
- Over Temperature Protection: 110°C (TYP)
- Storage temperature: -55°C to 125°C
- MTBF: > 2.5 million hrs

## Safety
- UL: UL60950
- CSA: CSA22.2-60950
- TUV/CE: IEC/EN60950

## Electrical Specifications

### Input
- **Input Range**: 36 to 75 Vdc

### Output
- **Voltage Setpoint Accuracy**
  - ±150mV max. for 12V
  - ±50mV max. for 3.3V, 5V
  - ±40mV max. for 2.5V
  - ±30mV max. for 1.8V
  - ±20mV max. for 1.5V, 1.2V
- **Voltage Adjust**
  - 12V: 10V
  - 5V: 10V
- **Line Regulation**
  - 12V: 20mV
  - 5V: 20mV
- **Load Regulation**
  - 12V: 30mV
  - 5V: 30mV
- **Ripple and Noise**
  - 3.3V: 100mVpp max.
  - 2.5V: 150mVpp max.
  - 1.8V, 1.5V, 1.2V: 180mVpp max.
- **Transient Response** (25% step load change from 50% Io)
  - di/dt: 1A/10μs
    - 12V: 400mV max.
    - 5V: 200mV max.
    - 3.3V: 150mV max.
    - 2.5V: 120mV max.
    - 1.8V, 1.5V, 1.2V: 90mV max.

### Control
- **Control Voltage**
  - Positive logic: High=on 3.5 to 12 Vdc
  - Low=off -0.7 to 1.2 Vdc
  - Negative logic: Low=on -0.7 to 1.2 Vdc
  - High=off 3.5 to 12 Vdc
- **Control Current**
  - 1 mA max.
### Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>48V</td>
<td>1.2V</td>
<td>20A</td>
<td>87%</td>
<td>AV050-48S1V2</td>
</tr>
<tr>
<td>48V</td>
<td>1.5V</td>
<td>20A</td>
<td>89%</td>
<td>AV050-48S1V5</td>
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<td>1.8V</td>
<td>20A</td>
<td>89.5%</td>
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<td>2.5V</td>
<td>20A</td>
<td>90.5%</td>
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<td>3.3V</td>
<td>15A</td>
<td>92%</td>
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<td>90%</td>
<td>AV050-48S05</td>
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<td>12V</td>
<td>20A</td>
<td>89%</td>
<td>AV050-48S1V2</td>
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<tr>
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<td>1.2V</td>
<td>25A</td>
<td>86%</td>
<td>AV075-48S1V2</td>
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<td>88%</td>
<td>AV075-48S1V5</td>
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<td>25A</td>
<td>89%</td>
<td>AV075-48S1V8</td>
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<td>90%</td>
<td>AV075-48S2V5</td>
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<td>3.3V</td>
<td>20A</td>
<td>91%</td>
<td>AV075-48S3V3</td>
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<td>5.0V</td>
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<td>12V</td>
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<td>91%</td>
<td>AV075-48S12</td>
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</table>

**Suffix with:**
- N: negative logic (low = on, open/high = off), omitting is negative logic
- P: positive logic (low = on, open/high = off).

### Pin Assignments

1. +Vin
2. CNT
3. -Vin
4. -Vout
5. -Sense
6. Trim
7. +Sense
8. +Vout

### Pin Length

<table>
<thead>
<tr>
<th>Pin Length</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.8mm</td>
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</tr>
<tr>
<td>3.8mm</td>
<td>-6</td>
</tr>
<tr>
<td>2.8mm</td>
<td>-8</td>
</tr>
<tr>
<td>5.8mm</td>
<td>None</td>
</tr>
</tbody>
</table>

---

Notes:
1. "Top view" means the logo face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
### Features
- Standard Eighth Brick: 2.28" x 0.9" x 0.35" mm³
- Ultra High Efficiency
- Delivers up to 30A output current
- Basic Isolation
- Remote Control
- Trim Function
- Overcurrent Protection
- Overvoltage Protection
- Overtemperature Protection

### Environmental
- Operating Ambient temperature: -40 °C to 85 °C
- Over Temperature Protection: 110 °C (TYP)
- Storage temperature: -55 °C to 125 °C
- MTBF: > 2.5 million hrs

### Electrical Specifications

#### Input
- **Input Range**: 36 to 75 Vdc

#### Output
- **Voltage Setpoint Accuracy**: ±50mV max. for 3.3Vout
- **Voltage Adjust**: 80% to 110% Vo
- **Line Regulation**: 3.3V:8mV
- **Load Regulation**: 3.3V:15mV
- **Ripple and Noise**: 100mVpp max. for 3.3Vout
  - **(Peak-to-Peak)**
  - **Transient Response**
    - (25% step load change from 50% Io)
      - \(\frac{di}{dt}: 1A/10\mu s\) max. 150mV max. for 3.3V
      - \(\frac{di}{dt}: 1A/\mu s\) max. 19mV max. for 3.3V
      - Recovery <400μSec max.

#### Control
- **Control Voltage**
  - Positive logic: High=on 3.5 to 12 Vdc
  - Low=off -0.7 to 1.2 Vdc
  - Negative logic: Low=on -0.7 to 1.2 Vdc
  - High=off 3.5 to 12 Vdc
- **Control Current**: 1 mA max.

### Safety
- UL: UL60950
- CSA: CSA22.2-60950
- TUV/CE: IEC/EN60950
**Ordering Information**

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>48V</td>
<td>3.3V</td>
<td>30A</td>
<td>91%</td>
<td>AV0100-48S3V3</td>
</tr>
</tbody>
</table>

Suffix with:
- N: negative logic (low = on, open/high = off), omitting is negative logic
- P: positive logic (low = on, open/high = off).

**Dimensions**

**Pin Assignments**
1. +Vin
2. CNT
3. -Vin
4. -Vout
5. -Sense
6. Trim
7. +Sense
8. +Vout

**Pin Length**
- 4.8mm: -4
- 3.8mm: -6
- 2.8mm: -8
- 5.8mm: None

Notes:
1. "Top view" means the logo face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
AVH30-S Half Brick Series
30 Watt Single Output

Features

- Half brick size package:
  2.4” x 2.28” x 0.50”
  (61.0mm x 57.9mm x 12.7mm)
- Industry standard footprint and pin-out
- High efficiency: 87% @5V output
- Wide input voltage: 36-75V
- Isolated output: 3.3V, 5V
- Remote control (positive or negative logic),
  remote sense
- Adjustable output voltage: 80%-110%Vo

Electrical Specifications

Input
- Input Range: 36 to 75 Vdc

Output
- Voltage Setpoint Accuracy: 50mV max.
- Voltage Adjust: 80% to 110% Vo
- Line Regulation: 0.2%Vo max.
- Load Regulation: 0.5%Vo max.
- Ripple and Noise: 150mVpp max.
- Transient Response: 5%Vo max.
  recovery <500uSec max.
  (25% step load change from 50%Io)
  di / dt :1A / 10µs

Control
- Control Voltage
  Logic High: 3.5 to 6 Vdc
  Logic Low: -0.7 to 1.2 Vdc
- Control Current: 1.0 mA max.

Environmental

- Operating case temperature range:
  -40°C to 100°C
- Storage temperature:
  -55°C to 125°C
- MTBF: > 1.75 million hrs

Safety

UL: UL60950
CSA: CSA22.2-60950
TUV/CE: IEC/EN60950
### Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
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<tr>
<td>48V</td>
<td>3.3V</td>
<td>6.5A</td>
<td>84%</td>
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<td>48V</td>
<td>5V</td>
<td>6A</td>
<td>87%</td>
<td>AVH30-48S05</td>
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</tbody>
</table>

### Dimensions

**Top view**

![Top view diagram]

### Pin Assignments

1. +Vin
2. CNT
3. Case
4. -Vin
5. -Vout
6. -Sense
7. Trim
8. +Sense
9. +Vout

### Pin Length

- 2.8mm: -8
- 5.1mm: None

Notes:
1. "Top view" means the logo face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
AVH-S Half Brick Series (3.3V/5V)
50-150 Watt Single Output

Features

- 50-150 watts of output power
- Standard half brick 2.4" x 2.28" x 0.5"
- Isolated Output
- Control Function
- Trim Function
- Overvoltage Protection
- Overcurrent Protection

Environmental

- Operating case temperature range: -40°C to 100°C
- Storage temperature: -55°C to 125°C
- Over Temperature Protection: 101°C to 115°C
- MTBF: > 2 million hrs

Safety

UL UL60950
CSA CSA22.2-60950
TUV/CE IEC/EN60950

Electrical Specifications

Input
Input Range 36 to 75 Vdc

Output
Voltage Setpoint Accuracy ± 1%Vo max.
Voltage Adjust 90% to 110% Vo
Line Regulation ± 0.2%Vo max.
Load Regulation ± 0.5%Vo max.
Ripple and Noise 150mVpp
Transient Response 5%Vo max.;
recovery <300uSec max.
(25% step load change from 50%Io)
di/dt:1A/10μs

Control
Control Voltage
Positive logic
High=on 3.5 to 15 Vdc
Low=off -0.7 to 1.2 Vdc
Negative logic
Low=on -0.7 to 1.2 Vdc
High=off 3.5 to 15 Vdc
Control Current 2 mA max.
### Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
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<td>3.3V</td>
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<td>10A</td>
<td>84%</td>
<td>AVH50-48S05</td>
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<tr>
<td>48V</td>
<td>3.3V</td>
<td>15A</td>
<td>81%</td>
<td>AVH75-48S03</td>
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<tr>
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<td>5V</td>
<td>15A</td>
<td>85%</td>
<td>AVH75-48S05</td>
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<td>3.3V</td>
<td>20A</td>
<td>81%</td>
<td>AVH100-48S03</td>
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<td>5V</td>
<td>20A</td>
<td>85%</td>
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<td>3.3V</td>
<td>30A</td>
<td>81%</td>
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<td>5V</td>
<td>30A</td>
<td>85%</td>
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</tbody>
</table>

### Dimensions

**Top view**

- 4.8mm: -4
- 3.8mm: -6
- 2.8mm: -8
- 5.8mm: None

**Notes:**
1. "Top view" means the base plate face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
### Features
- 50-150 watts of output power
- Standard half brick 2.4" x 2.28" x 0.5"
- Isolated Output
- Control Function
- Trim Function
- Overvoltage Protection
- Overcurrent Protection
- Basic Isolation

### Electrical Specifications

#### Input
- Input Range 36 to 75 Vdc

#### Output
- Voltage Setpoint Accuracy ± 1 %Vo max. for 12V,15V ± 1.5%Vo max. for 8V,28V
- Voltage Adjust 80% to 110% Vo
- Line Regulation ± 0.2%Vo max.
- Load Regulation ± 0.5%Vo max.
- Ripple and Noise 150mVpp max. (for 8Vout) 250mVpp max. (for 12,15Vout) 350mVpp max. (for 28Vout)
- Transient Response 3%Vo max.; recovery <500uSec max. (25% step load change from 50%Io)
- di/dt: 1A/10μs

#### Control
- (80% to 110% Vo for AVH100-48S08, AVH100-48S28)
- Control Voltage
  - Positive logic
    - High=on 3.5 to 15 Vdc
    - Low=off -0.7 to 1.2 Vdc
  - Negative logic
    - Low=on -0.7 to 1.2 Vdc
    - High=off 3.5 to 15 Vdc
- Control Current 2 mA max.

### Environmental
- Operating case temperature range: -40°C to 100°C
- Storage temperature: -55°C to 125°C
- Over Temperature Protection: 101°C to 115°C
- MTBF: > 2 million hrs

### Safety
- UL UL60950
- CSA CSA22.2-60950
- TUV/CE IEC/EN60950
## Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
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<td>87%</td>
<td>AVH150-48S15</td>
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</tbody>
</table>

### Pin Assignments

1. +Vin
2. CNT
3. Case
4. -Vin
5. -Vout
6. -Sense
7. Trim
8. +Sense
9. +Vout

### Pin Length

- 4.8mm: -4
- 3.8mm: -6
- 2.8mm: -8
- 5.8mm: None

---

Notes:
1. "Top view" means the base plate face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
AVH-D Half Brick Series
75 Watt Dual Outputs

**Features**

- Standard half brick:
  2.4” x 2.28” x 0.5’
  (61.0mm x 57.9mm x 12.7mm)
- 2:1 Input voltage: 36-75V
- Isolated output: 5V/3.3V, 3.3V/2.5V
- High efficiency: 82%
- Half output can be trimmed separately and flexible output power distribution
- Remote control, trim function

**Environmental**

- Operating case temperature range:
  -40°C to 100°C
- Storage temperature:
  -55°C to 125°C
- Over Temperature Protection:
  101°C to 125°C
- MTBF: > 1.5 million hrs

**Safety**

- UL: UL60950
- CSA: CSA22.2-60950
- TUV/CE: IEC/EN60950

**Electrical Specifications**

**Input**

- Input Range: 36 to 75 Vdc

**Output**

- Voltage Setpoint Accuracy: 50mV max
- Voltage Adjust: 90% to 110% Vo
- Line Regulation:
  - 0.5%Vo1 max.
  - 1.0%Vo2 max.
- Load Regulation:
  - 0.5%Vo1 max.
  - 1.0%Vo2 max.
- Ripple and Noise: 200mVpp
- Transient Response: 5%Vo max.; recovery <200μSec max.

  (25% step load change from 50%Io)
  di/dt: 1A/10μs

**Control**

- Control Voltage:
  - Positive logic:
    - High=on: 5 to 15 Vdc
    - Low=off: 0 to 1.2 Vdc
  - Negative logic:
    - Low=on: 0 to 1.2 Vdc
    - High=off: 5 to 15 Vdc
- Control Current: 2 mA max. 
### Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>48V</td>
<td>5V</td>
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<td>80%</td>
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</table>

0.5A minimum load requirement for 5Vout (AVH75-48D0503)
1.5A minimum load requirement for 3.3Vout (AVH75-48D0302)
I01 + I02 ≤ 15A

### Dimensions

**Top view**

#### Pin Assignments
1. +Vin
2. CNT
3. Case
4. -Vin
5. +Vout2
6. -Vout2
7. Trim2
8. +Vout1
9. -Vout1
10. Trim1

#### Pin Length
- 4.8mm: -4
- 3.8mm: -6
- 2.8mm: -8
- 5.8mm: None

Notes:
1. "Top view" means the base plate face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
AVE-S High Efficiency Half Brick Series
50-150 Watt Single Output

Features

- 50-150 watts of output power
- Standard half brick 2.4" x 2.28" x 0.5"
- Isolated Output
- Control Function
- Trim Function
- Overvoltage Protection
- Overcurrent Protection

Electrical Specifications

**Input**

Input Range 36 to 75 Vdc

**Output**

Voltage Setpoint Accuracy 50mV max.
(20mV max. for 1.5 Vout)

Voltage Adjust 90% to 110% Vo
(80% to 110% Vo for 1.5Vo)

Line Regulation ± 0.2%Vo max.

Load Regulation ± 0.5%Vo max.

Ripple and Noise 150mVpp max.
(100mVpp max. for 1.5Vout)

Transient Response 4%Vo max.;
80mV max for 1.5Vout
recovery <200uSec max.
(25% step load change from 50%Io
di/dt:1A/10μs)

**Control**

Control Voltage

Positive logic
High=on 3.5 to 15 Vdc
Low=off -0.7 to 1.2 Vdc

Negative logic
Low=on -0.7 to 1.2 Vdc
High=off 3.5 to 15 Vdc

Control Current 2 mA max.

Environmental

- Operating case temperature range:
  -40°C to 100°C
- Storage temperature:
  -55°C to 125°C
- Over Temperature Protection:
  101°C to 115°C
- MTBF: > 2 million hrs

Safety

UL UL60950
CSA CSA22.2-60950
TUV/CE IEC/EN60950
### Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
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<td>3.3V</td>
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<td>87%</td>
<td>AVE50-48S03</td>
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<td>48V</td>
<td>1.5V</td>
<td>30A</td>
<td>78%</td>
<td>AVE150-48S1V5</td>
</tr>
<tr>
<td>48V</td>
<td>1.8V</td>
<td>30A</td>
<td>85%</td>
<td>AVE150-48S1V8</td>
</tr>
<tr>
<td>48V</td>
<td>2.5V</td>
<td>30A</td>
<td>85%</td>
<td>AVE150-48S2V5</td>
</tr>
<tr>
<td>48V</td>
<td>3.3V</td>
<td>30A</td>
<td>85%</td>
<td>AVE150-48S05</td>
</tr>
<tr>
<td>48V</td>
<td>5V</td>
<td>30A</td>
<td>88%</td>
<td>AVE150-48S03</td>
</tr>
</tbody>
</table>

### Pin Assignments

1. +Vin
2. CNT
3. Case
4. -Vin
5. -Vout
6. -Sense
7. Trim
8. +Sense
9. +Vout

### Pin Length

- 4.8mm: -4
- 3.8mm: -6
- 2.8mm: -8
- 5.8mm: None

Notes:
1. "Top view" means the base plate face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
AVE-S High Efficiency Half Brick Series
200 Watt Single Output

Features

- 40A of output current
- Standard half brick 2.4" x 2.28" x 0.5"
- Isolated Output
- Control Function
- Trim Function
- Overvoltage Protection
- Overcurrent Protection
- Basic Isolation

Environmental

- Operating case temperature range:
  -40°C to 100°C
- Storage temperature:
  -55°C to 125°C
- Over Temperature Protection:
  101°C to 120°C
- MTBF: > 2 million hrs

Safety

UL UL60950
CSA CSA22.2-60950
TUV/CE IEC/EN60950

Electrical Specifications

Input

- Input Range 36 to 75 Vdc

Output

- Voltage Setpoint Accuracy 50mV max. for 3.3Vout
  30mV max. for 1.8Vout
  20mV max. for 1.5V, 1.2Vout
- Voltage Adjust 80% to 110% Vo
- Line Regulation ± 0.2%Vo max.
- Load Regulation ± 0.5%Vo max.
- Ripple and Noise 150mVpp max. for 3.3Vout
  100mVpp max. for 1.8V, 1.5Vout
  80mVpp max. for 1.2Vout
- Transient Response 5%Vo max.; recovery <300uSec max.
  (25% step load change from 50%Io di/dt: 1A/10µs)
  200mV max.; recovery <300uSec max.
  (25% step load change from 50%Io di/dt: 1A/µs)

Control

- Control Voltage
  Positive logic
  High=on 3.5 to 12 Vdc
  Low=off -0.7 to 1.2 Vdc
  Negative logic
  Low=on -0.7 to 1.2 Vdc
  High=off 3.5 to 12 Vdc
- Control Current 1 mA max.
### Input Voltage

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>48V</td>
<td>1.2V</td>
<td>40A</td>
<td>85%</td>
<td>AVE200-48S1V2</td>
</tr>
<tr>
<td>48V</td>
<td>3.3V</td>
<td>40A</td>
<td>89%</td>
<td>AVE200-48S3V3</td>
</tr>
</tbody>
</table>

### Pin Assignments

1. +Vin
2. CNT
3. Case
4. -Vin
5. -Vout
6. -Sense
7. Trim
8. +Sense
9. +Vout

### Pin Length

- 4.8mm: -4
- 3.8mm: -6
- 2.8mm: -8
- 5.8mm: None

### Notes

1. "Top view" means the base plate face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
AVE-S High Efficiency Half Brick Series
250 Watt Single Output

Features

- 250 watts of output power
- Standard half brick 2.4" x 2.28" x 0.5"
- Isolated Output
- Control Function
- Trim Function
- Overvoltage Protection
- Overcurrent Protection
- Basic Isolation

Environmental

- Operating case temperature range:
  -40°C to 100°C
- Storage temperature:
  -55°C to 125°C
- Over Temperature Protection:
  101°C to 120°C
- MTBF: > 2 million hrs

Safety

UL UL60950
CSA CSA22.2-60950
TUV/CE IEC/EN60950

Electrical Specifications

Input

Input Range 36 to 75 Vdc

Output

Voltage Setpoint Accuracy ± 1.5%Vo max.
Voltage Adjust 80% to 110% Vo
Line Regulation ± 0.2%Vo max.
Load Regulation ± 0.5%Vo max.
Ripple and Noise 240mVpp max.
Transient Response 3%Vo max.; recovery <500uSec max.
(25% step load change from 50%Io)
di/dt:1A/10µs

Control

Control Voltage
Positive logic
  High=on 3.5 to 12 Vdc
  Low=off -0.7 to 1.2 Vdc
Negative logic
  Low=on -0.7 to 1.2 Vdc
  High=off 3.5 to 12 Vdc
Control Current 1 mA max.
**Ordering Information**

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>48V</td>
<td>28V</td>
<td>9A</td>
<td>91%</td>
<td>AVE250-48S28</td>
</tr>
</tbody>
</table>

**Dimensions**

**Top view**

**Pin Assignments**

1. +Vin
2. CNT
3. Case
4. -Vin
5. -Vout
6. -Sense
7. Trim
8. +Sense
9. +Vout

**Pin Length**

- 4.8mm -4
- 3.8mm -6
- 2.8mm -8
- 5.8mm None

Notes:
1. "Top view" means the base plate face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
AVE-S High Efficiency Half Brick Series
24V Input, Single Output

Features

- 50-150 watts of output power
- Standard half brick 2.4" x 2.28" x 0.5" Footprint
- Isolated Output
- Control Function
- Trim Function
- Overvoltage Protection
- Overcurrent Protection

Environmental

- Operating case temperature range: -40°C to 100°C
- Storage temperature: -55°C to 125°C
- Over Temperature Protection: 101°C to 115°C
- MTBF: > 2 million hrs

Safety

UL: UL60950
CSA: CSA22.2-60950
TUV/CE: IEC/EN60950

Electrical Specifications

**Input**

- Input Range: 18 to 36 Vdc

**Output**

- Voltage Setpoint Accuracy: 50mV max.
- Voltage Adjust: 90% to 110% Vo
- Line Regulation: ± 0.2% Vo max.
- Load Regulation: ± 0.5% Vo max.
- Ripple and Noise: 150mVpp
- Transient Response: 5% Vo max.; recovery < 200uSec max. (25% step load change from 50% Io, di/dt: 1A/10µs)

**Control**

- Control Voltage
  - Positive logic: High=on 3.5 to 15 Vdc
  - Low=off -0.7 to 1.2 Vdc
  - Negative logic: Low=on -0.7 to 1.2 Vdc
  - High=off 3.5 to 15 Vdc
- Control Current: 2 mA max.
**Ordering Information**

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>24V</td>
<td>2.5V</td>
<td>10A</td>
<td>85%</td>
<td>AVE50-24S2V5</td>
</tr>
<tr>
<td>24V</td>
<td>3.3V</td>
<td>10A</td>
<td>87%</td>
<td>AVE50-24S03</td>
</tr>
<tr>
<td>24V</td>
<td>5V</td>
<td>10A</td>
<td>88%</td>
<td>AVE50-24S05</td>
</tr>
<tr>
<td>24V</td>
<td>2.5V</td>
<td>20A</td>
<td>85%</td>
<td>AVE100-24S2V5</td>
</tr>
<tr>
<td>24V</td>
<td>3.3V</td>
<td>20A</td>
<td>87%</td>
<td>AVE100-24S03</td>
</tr>
<tr>
<td>24V</td>
<td>5V</td>
<td>20A</td>
<td>88%</td>
<td>AVE100-24S05</td>
</tr>
</tbody>
</table>

---

**Dimensions**

**Top view**

**Pin Assignments**

1. +Vin
2. CNT
3. Case
4. -Vin
5. -Vout
6. -Sense
7. Trim
8. +Sense
9. +Vout

**Pin Length**

- 4.8mm: -4
- 3.8mm: -6
- 2.8mm: -8
- 5.8mm: None

---

Notes: 1. "Top view" means the base plate face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
AVE-S High Efficiency Half Brick Series
300 Watt Single Single Output

Features

- 60A of output current
- Standard half brick 2.4" x 2.28" x 0.5"
- Isolated Output
- Control Function
- Trim Function
- Overvoltage Protection
- Overcurrent Protection
- Basic Isolation
- Baseplate option

Environmental

- Operating case temperature range: -40°C to 100°C (with baseplate)
- Storage temperature: -55°C to 125°C
- Over Temperature Protection: 101°C to 115°C (with baseplate)
- MTBF: > 2 million hrs

Safety

UL: UL60950
CSA: CSA22.2-60950
TUV/CE: IEC/EN60950

Electrical Specifications

Input

- Input Range: 36 to 75 Vdc

Output

- Voltage Setpoint Accuracy:
  - 50mV max. for 3.3Vout
  - 30mV max. for 2.5V, 1.8Vout
  - 20mV max. for 1.5V, 1.2Vout
- Voltage Adjust: 80% to 110% Vo
- Line Regulation:
  - 10mV max. for 3.3Vout
  - 5mV max. for 2.5V, 1.8V, 1.5V, 1.2Vout
- Load Regulation:
  - 20mV max. for 3.3Vout
  - 10mV max. for 2.5V, 1.8V, 1.5V, 1.2Vout
- Ripple and Noise:
  - 150mVpp max. for 3.3Vout
  - 100mVpp max. for 1.8V, 1.5Vout
- Transient Response:
  - 150mV max. for 3.3, 2.5Vout
  - 100mV max. for 1.8, 1.5, 1.2Vout
  - recovery < 500uSec max. (25% step load change from 50%Io di/dt: 1A/10µs)

Control

- Control Voltage
  - Positive logic: High=on 3.5 to 12 Vdc, Low=off -0.7 to 1.2 Vdc
  - Negative logic: Low=on -0.7 to 1.2 Vdc, High=off 3.5 to 12 Vdc
- Control Current: 1 mA max.
### Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>48V</td>
<td>1.2V</td>
<td>60A</td>
<td>85%</td>
<td>AVE300-48S1V2B-4</td>
</tr>
<tr>
<td>48V</td>
<td>1.5V</td>
<td>60A</td>
<td>87%</td>
<td>AVE300-48S1V5B-4</td>
</tr>
<tr>
<td>48V</td>
<td>1.8V</td>
<td>60A</td>
<td>89%</td>
<td>AVE300-48S1V8B-4</td>
</tr>
<tr>
<td>48V</td>
<td>2.5V</td>
<td>60A</td>
<td>91%</td>
<td>AVE300-48S2V5B-4</td>
</tr>
<tr>
<td>48V</td>
<td>3.3V</td>
<td>60A</td>
<td>92%</td>
<td>AVE300-48S3V3B-4</td>
</tr>
</tbody>
</table>

### Dimensions

#### Top View

Notes: 1. “Top view” means the base plate face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.

### Pin Assignments

1. +Vin
2. CNT
3. NC
4. -Vin
5. -Vout
6. NC
7. -Sense
8. Trim
9. +Sense
10. NC
11. +Vout

### Pin Length

- 4.8mm: -4
- 3.8mm: -6
- 2.8mm: -8
- 5.8mm: None
AVF-S Full Brick Series
500 Watt Single Output

Features

- Standard full Brick:
  4.6" x 2.4" x 0.5"
  (116.8mm x 61.0mm x 12.7mm)
- 2:1 input voltage
- Isolated output
- High efficiency
- Remote Control, sense, current sharing, IOG/Tmp
- Overcurrent Protection
- Overvoltage Protection
- Overtemperature Protection

Environmental

- Operating case temperature range:
  -40°C to 100°C
- Storage temperature:
  -55°C to 125°C
- Over Temperature Protection:
  101°C to 120°C
- MTBF: 1.5 million hrs (typ)

Safety

UL     UL60950
CSA    CSA22.2-60950
TUV/CE IEC/EN60950

Electrical Specifications

Input

Input Range 36 to 75 Vdc

Output

- Voltage Setpoint Accuracy ± 0.5V
- Line Regulation 0.2%Vo max.
- Load Regulation 0.5%Vo max.
- Ripple and Noise 200mVpp max.
- Transient Response 3%Vo max. ; recovery <500uSec max.
  (25% step load change from 50%Io)
- di/dt:1A/10µs

Control

(CNT1)
- Positive logic
  - High=on 3.5 to 7 Vdc
  - Low=off -0.7 to 1 Vdc
- Negative logic
  - Low=on -0.7 to 1 Vdc
  - High=off 3.5 to 7 Vdc
- Control Current 1 mA max.

CNT2/CNT3 must open when CNT1 used
### Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>48V</td>
<td>28V</td>
<td>18A</td>
<td>89%</td>
<td>AVF500B-48S28</td>
</tr>
</tbody>
</table>

### Pin Assignments

1. +Vin  
2. NC  
3. NC  
4. -Vin  
5. CNT1  
6. -Vout  
7. -Vout  
8. -Vout  
9. -Vout  
10. +Vout  
11. +Vout  
12. +Vout  
13. +Vout  
14. Trim  
15. +Sense  
16. -Sense  
17. IOG  
18. AUX  
19. CNT2  
20. CNT3  
21. TMP  
22. VB  
23. CB

### Pin Length

- 4mm  
- 6mm  
- 8mm  
- 10mm  
- 12mm  
- 16mm  
- None

---

**Notes:**
1. "Top view" means the base plate face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
# AVF-S Full Brick Series
## 700 Watt Single Output

### Features
- Standard full Brick:
  - 4.6" x 2.4" x 0.5" (116.8mm x 61.0mm x 12.7mm)
- 2:1 input voltage
- Isolated output
- High efficiency
- Remote Control, sense, current sharing, IOG/Tmp
- Overcurrent Protection
- Overvoltage Protection
- Overtemperature Protection

### Environmental
- Operating case temperature range:
  - -40°C to 100°C
- Storage temperature:
  - -55°C to 125°C
- Over Temperature Protection:
  - 101°C to 120°C
- MTBF: 1.5 million hrs (typ)

### Safety
- UL: UL60950
- CSA: CSA22.2-60950
- TUV/CE: IEC/EN60950

### Electrical Specifications

#### Input
- Input Range: 36 to 75 Vdc

#### Output
- Voltage Setpoint Accuracy: ± 0.5V
- Line Regulation: 0.2%Vo max.
- Load Regulation: 0.5%Vo max.
- Ripple and Noise: 200mVpp max.
- Transient Response: 3%Vo max.; recovery <500μSec max.
  - (25% step load change from 50%Io)
  - $\frac{di}{dt}$: 1A/10μs

#### Control (CNT1)
- Positive logic
  - High=on: 3.5 to 7 Vdc
  - Low=off: -0.7 to 1 Vdc
- Negative logic
  - Low=on: -0.7 to 1 Vdc
  - High=off: 3.5 to 7 Vdc
- Control Current: 1 mA max.

CNT2/CNT3 must open when CNT1 used
### Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>48V</td>
<td>28V</td>
<td>25A</td>
<td>89%</td>
<td>AVF700B-48S28</td>
</tr>
</tbody>
</table>

### Pin Assignments

1. +Vin
2. +Vin
3. -Vin
4. -Vin
5. CNT1
6. -Vout
7. -Vout
8. -Vout
9. -Vout
10. +Vout
11. +Vout
12. +Vout
13. +Vout
14. Trim
15. +Sense
16. -Sense
17. IOG
18. AUX
19. CNT2
20. CNT3
21. TMP
22. VB
23. CB

### Pin Length

- 4.8mm: -4
- 3.8mm: -6
- 2.8mm: -8
- 5.8mm: None

---

Notes: 1. "Top view" means the base plate face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
HG3-RNG Ring Generator Series

**Features**

- Package: 2.56" x 2.0" x 0.33" (65.0mm x 50.0mm x 8.5mm)
- 3 watts of output power
- 2:1 input range: 18-36Vdc, 36-72Vdc
- Isolated sine wave output with 25Hz frequency
- Low THD
- Remote control function and trim function
- Overcurrent Protection

**Electrical Specifications**

**Input**
- Input Range: 18 to 36 Vdc
- 36 to 72 Vdc

**Output**
- Voltage Setpoint Accuracy: ± 5Vac max.
- Voltage Adjust: 65 to 85 Vac
- Line Regulation: 2%Vo max.
- Load Regulation: 2%Vo max.
- THD: 5% max.

**Control**
- Control Voltage
  - Positive logic
    - High=on: 18Vmin. for 24Vin
    - Low=off: 15Vmax. for 24Vin
  - Control Voltage: 36Vmin. for 48Vin
- Control Current: 1 mA max.

**Environmental**

- Operating case temperature range: -20°C to 55°C
- Storage temperature range: -40°C to 105°C
- MTBF: > 0.2 million hrs

**Safety**

UL UL60950

EMERSON. CONSIDER IT SOLVED.
## Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Frequency</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>24V</td>
<td>75V</td>
<td>40mA</td>
<td>25Hz</td>
<td>60%</td>
<td>HG3-24RNG</td>
</tr>
<tr>
<td>48V</td>
<td>75V</td>
<td>40mA</td>
<td>25Hz</td>
<td>58%</td>
<td>HG3-48RNG</td>
</tr>
</tbody>
</table>

## Dimensions

*Bottom view*

### Pin Assignments

1. +Vin
2. -Vin
3. CNT
4. Trim
5. Vout2
6. Vout1

### Pin Length

5.8mm

Notes:
1. "Bottom view" means the logo face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
HG15-RNG Ring Generator Series

**Features**

- Package: 3.1" x 2.6" x 0.6" (78.7mm x 66.0mm x 15.2mm)
- 15 watts of output power
- 2:1 input range: 18-36Vdc, 36-72Vdc
- Isolated sine wave output with 25Hz frequency
- Low THD
- Remote control function and trim function
- Overcurrent Protection

**Electrical Specifications**

**Input**
- Input Range
  - 18 to 36 Vdc
  - 36 to 72 Vdc

**Output**
- Voltage Setpoint Accuracy: ± 5Vac max.
- Voltage Adjust: 65 to 85 Vac
- Line Regulation: 2%Vo max.
- Load Regulation: 2%Vo max.
- THD: 5% max.

**Control**
- Control Voltage: Positive logic
  - High=on: 18min for 24Vin
  - Low=off: 36min for 48Vin
  - Low=off: 15V max. for 24Vin
  - Low=off: 30V max. for 48Vin
- Control Current: 1 mA max.

**Environmental**

- Operating case temperature range: -25°C to 70°C
- Storage temperature range: -40°C to 105°C
- MTBF: > 0.2 million hrs

**Safety**

UL UL60950
**Ordering Information**

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Frequency</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>24V</td>
<td>75Vac</td>
<td>200mA</td>
<td>25Hz</td>
<td>83%</td>
<td>HG15-24RNG</td>
</tr>
<tr>
<td>48V</td>
<td>75Vac</td>
<td>200mA</td>
<td>25Hz</td>
<td>84%</td>
<td>HG15-48RNG</td>
</tr>
</tbody>
</table>

**Dimensions**

*Top view*

**Pin Assignments**
1. CNT
2. +Vin
3. -Vin
4. Vout1
5. Vout
6. Trim
7. NC
8. Case

**Pin Length**
5.8mm

Notes:
1. "Top view" means the logo face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
HG30-RNG Ring Generator Series

Features

- Package: 3.94" x 3.94" x 0.50" (100.0mm x 100.0mm x 12.7mm)
- 30 watts of output power
- 2:1 input range: 18-36Vdc and 36-72Vdc
- Isolated sine wave output with 25Hz frequency
- Low THD
- Remote control function
- Overcurrent Protection

Electrical Specifications

Input

- Input Range
  - 18 to 36 Vdc
  - 36 to 72 Vdc

Output

- Voltage Setpoint Accuracy ± 5Vac max.
- Line Regulation 1%Vo max.
- Load Regulation 2%Vo max.
- THD 5% max.

Control

- Control Voltage
  - Positive logic
  - High=on 18Vmin. for 24Vin
  - 36Vmin. for 48Vin
  - Low=off 13Vmax. for 24Vin
  - 30Vmax. for 48Vin
- Control Current 1 mA max.

Environmental

- Operating case temperature range: -25°C to 70°C
- Storage temperature: -40°C to 105°C
- MTBF: > 1.2 million hrs

Safety

UL UL60950

UL 

EMERSON
Network Power
### Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Frequency</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>24V</td>
<td>75 Vac</td>
<td>400 mA</td>
<td>25 Hz</td>
<td>86%</td>
<td>HG30-24RNG</td>
</tr>
<tr>
<td>24V</td>
<td>85 Vac</td>
<td>353 mA</td>
<td>25 Hz</td>
<td>86%</td>
<td>HG30-24RNG/85</td>
</tr>
<tr>
<td>24V</td>
<td>95 Vac</td>
<td>316 mA</td>
<td>25 Hz</td>
<td>86%</td>
<td>HG30-24RNG/95</td>
</tr>
<tr>
<td>48V</td>
<td>75 Vac</td>
<td>400 mA</td>
<td>25 Hz</td>
<td>86%</td>
<td>HG30-48RNG</td>
</tr>
<tr>
<td>48V</td>
<td>85 Vac</td>
<td>353 mA</td>
<td>25 Hz</td>
<td>86%</td>
<td>HG30-48RNG/85</td>
</tr>
<tr>
<td>48V</td>
<td>95 Vac</td>
<td>316 mA</td>
<td>25 Hz</td>
<td>86%</td>
<td>HG30-48RNG/95</td>
</tr>
</tbody>
</table>

### Pin Assignments

1. CNT
2. Case
3. -Vin
4. -Vin
5. +Vin
6. +Vin
7. Vout2
8. Vout2
9. Vout1
10. Vout1
11. NC

### Pin Length

6.0mm

Notes:
1. "Top view" means the logo face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
HG40-RNG Ring Generator Product

Features

- Package: 95Vac: 3.94” x 3.94” x 0.63”
  (100.0mm x 100.0mm x 16.0mm)
- 75Vac: 3.94” x 3.94” x 0.5”
  (100.0mm x 100.0mm x 12.7mm)
- 40 watts of output power
- 2:1 input range: 36-75Vdc
- Isolated sine wave output with 25Hz frequency
- Low THD
- Remote control function
- Overcurrent Protection

Electrical Specifications

Input
Input Range 36 to 75 Vdc

Output
Voltage Setpoint Accuracy ± 5Vac max.
Line Regulation 1%Vo max.
Load Regulation 2%Vo max.
THD 5% max.

Control
Control Voltage Positive logic
- High=on 36Vmin. for 48Vin
- Low=off 30Vmax. for 48Vin
Control Current 1 mA max.

Environmental

- Operating case temperature range: -25°C to 55°C
- Storage temperature: -40°C to 105°C
- MTBF: > 1.2 million hrs

Safety

UL  UL60950
### Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Frequency</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>48V</td>
<td>95Vac</td>
<td>420mA</td>
<td>25Hz</td>
<td>85%</td>
<td>HG40-48RNG/95</td>
</tr>
<tr>
<td>48V</td>
<td>75Vac</td>
<td>530mA</td>
<td>25Hz</td>
<td>85%</td>
<td>HG40-48RNG</td>
</tr>
</tbody>
</table>

### Dimensions

#### Pin Assignments

1. CNT
2. Case
3. -Vin
4. -Vin
5. +Vin
6. +Vin
7. Vout2
8. Vout2
9. Vout1
10. Vout1
11. NC

#### Pin Length

- L: 7.5mm  HG40-48RNG/95
- 5.5mm  HG40-48RNG
- H: 16.0(0.63”)  HG40-48RNG/95
- 12.7(0.50”)  HG40-48RNG

Notes:
1. “Top view” means the logo face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
HG75-RNG Ring Generator Product

**Features**

- Package: 3.94" x 3.94" x 0.63"
  (100.0mm x 100.0mm x 16.0mm)
- 75 watts of output power
- 2:1 input range: 36-75Vdc
- Isolated sine wave output with 25Hz frequency
- Low THD
- Remote control function
- Overcurrent Protection

**Environmental**

- Operating case temperature range: -40°C to 55°C
- Storage temperature: -40°C to 105°C
- MTBF: > 1.2 million hrs

**Safety**

UL UL60950

**Electrical Specifications**

**Input**

- Input Range: 36 to 75 Vdc

**Output**

- Voltage Setpoint Accuracy: ± 5Vac max.
- Line Regulation: 1%Vo max.
- Load Regulation: 2%Vo max.
- THD: 5% max.

**Control**

- Control Voltage
  - Positive logic
  - High=on: 36Vmin.
  - Low=off: 30Vmax.
- Control Current: 1 mA max.
### Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Frequency</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>48V</td>
<td>75Vac</td>
<td>1A</td>
<td>25Hz</td>
<td>85%</td>
<td>HG75-48RNG</td>
</tr>
</tbody>
</table>

### Pin Assignments

1. CNT
2. Case
3. -Vin
4. -Vin
5. +Vin
6. +Vin
7. Vout2
8. Vout2
9. Vout1
10. Vout1
11. NC

### Pin Length

7.5mm

---

Notes:
1. "Top view" means the logo face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
AVN20B Non-isolated SIP Series

**Features**
- Industry standard SIP package: 2.5" x 0.55" x 0.33" (63.5mm x 14.0mm x 8.38mm)
- Input voltage: 3.3Vnom, 5Vnom
- Output power: 7.2-20 Watts
- High efficiency: 89%
- Non-isolated output: 1.2V, 1.5V, 1.8V, 2.1V, 2.5V, 3.3V
- Remote control, trim, sense and POWER GOOD function
- Provide boost or buck series

**Environmental**
- Operating Temperature:
  - Environment: -25°C to 55°C
- Storage temperature:
  - -40°C to 125°C
- MTBF: > 7.0 million hrs

**Safety**
- UL: UL60950
- CSA: CSA22.2-60950
- TUV/CE: IEC/EN60950

**Electrical Specifications**

**Input**
- Input Range: 3 to 5.5 Vdc
- Output: 4.5 to 5.5 Vdc

**Output**
- Voltage Setpoint Accuracy: ±1%Vo max.
- Voltage Adjust: 84% to 116% Vo
- (Vin-Vout > 0.8 for normal working)
- Load Regulation: 0.5%Vo max.
- Ripple and Noise: 50mVpp max.
- Transient Response: 4%Vo max.; recovery <200uSec max.

(25% step load change from 50%Io)
- di / dt: 1A / 10µs

**Control**
- Control Voltage
  - Positive logic
    - High=on: 2.8 to 12 Vdc
    - Low=off: -0.7 to 1.2 Vdc
  - Negative logic
    - Low=on: -0.7 to 1.2 Vdc
    - High=off: 2.8 to 12 Vdc
- Control Current: 1 mA max.
**Ordering Information**

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.3 or 5V</td>
<td>1.2V</td>
<td>6A</td>
<td>78%</td>
<td>AVN20B-04S1V2</td>
</tr>
<tr>
<td>3.3 or 5V</td>
<td>1.5V</td>
<td>6A</td>
<td>81%</td>
<td>AVN20B-04S1V5</td>
</tr>
<tr>
<td>3.3 or 5V</td>
<td>1.8V</td>
<td>6A</td>
<td>83%</td>
<td>AVN20B-04S1V8</td>
</tr>
<tr>
<td>3.3 or 5V</td>
<td>2.1V</td>
<td>6A</td>
<td>86%</td>
<td>AVN20B-04S2V1</td>
</tr>
<tr>
<td>5V</td>
<td>2.5V</td>
<td>6A</td>
<td>88%</td>
<td>AVN20B-05S2V5</td>
</tr>
<tr>
<td>5V</td>
<td>3.3V</td>
<td>6A</td>
<td>89%</td>
<td>AVN20B-05S3V3</td>
</tr>
</tbody>
</table>

*Min external load capacitance 220uF required.
No minimum load requirement. About redundant application, refer to the corresponding application manual.
Note: Add E to the product number for not featuring SENSE and POWER GOOD pins. We can provide angle right pins products.

**Dimensions**

**Top view**

**Pin Assignments**

| 1. +Vout | 6. GND  |
| 2. +Vout | 7. +Vin |
| 3. Sense | 8. +Vin |
| 5. GND   | 10.Trim |
|          | 11.CNT  |
AVN20B-3V3S05
Non-Isolated SIP Product

Features

- Industry standard SIP package:
  2.5" x 0.55" x 0.33"
  (63.5mm x 14.0mm x 8.38mm)
- Input voltage: 3.3Vnom
- Output power: 20 Watts
- High efficiency: 87%
- Non-isolated output: 5V

Electrical Specifications

**Input**
- Input Range: 3 to 4 Vdc

**Output**
- Voltage Setpoint Accuracy: ± 1%Vo max.
- Line Regulation: 0.5%Vo max.
- Load Regulation: 1%Vo max.
- Ripple and Noise: 50mVpp max.
- Transient Response: 200mV max.;
  recovery <500uSec max.
  (25% step load change from 50%Io)
  di / dt :1A / 10µs

Environmental

- Operating temperature range:
  -25°C to 55°C
- Storage temperature:
  -40°C to 125°C
- MTBF: > 7.0 million hrs

Safety

- UL: UL60950
- CSA: CSA22.2-60950
- TUV/CE: IEC/EN60950
Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0-4.0V</td>
<td>5V</td>
<td>4A</td>
<td>87%</td>
<td>AVN20B-3V3S05</td>
</tr>
</tbody>
</table>

Notes: 1. “Top view” means the logo face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.

Pin Assignments

1. +Vout   6. GND
2. +Vout   7. GND
3. +Vout   8. +Vin
4. GND     9. +Vin
5. GND     10. +Vin
11. +Vin

Pin Length

3.8mm - 6
6.0mm NONE
APC08 Non-isolated SMT Series

**Features**

- Point of load (POL) applications
- High efficiency, 3.3V@90%
- -40 to +85 Ambient operating temperature
- Open Frame SMT
- Positive enable function
- Low output ripple and noise
- Regulation to zero load
- Programmable Output from 0.9V to 3.6V
- (External Trim Resistor)
- Fixed frequency switching (400KHZ)

**Environmental**

- Operating case temperature range:
  -40°C to +85°C
- Storage temperature:
  -55°C to +105°C
- MTBF: >1 million hours

**Safety**

- UL, cUL 1950 Recognized
- TUV EN60950 Licensed

**Electrical Specifications**

**Input**

- Input Range: 1.8 to 6.0Vdc
- Input Range: 5.0 to 13.0Vdc

**Output**

- Regulation (Line, Load, Temp) <3%
- Ripple and Noise:
  - 75mVpp (>2.5V Output)
  - 50mVpp (<2.5V Output)
- Transient Response:
  - 5%Vo max. recovery <500uSec max.
  - (25% step load change from 50%Io)
  - di / dt : 1A / 10µs

**Control**

- Voltage Adjust: 0.9V to 3.6V
## Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.8V-6.0V</td>
<td>0.9V</td>
<td>8A</td>
<td>76%</td>
<td>APC08J03</td>
</tr>
<tr>
<td>1.8V-6.0V</td>
<td>1.2V</td>
<td>8A</td>
<td>81%</td>
<td>APC08K03</td>
</tr>
<tr>
<td>1.8V-6.0V</td>
<td>1.5V</td>
<td>8A</td>
<td>86%</td>
<td>APC08M03</td>
</tr>
<tr>
<td>1.8V-6.0V</td>
<td>1.8V</td>
<td>8A</td>
<td>88%</td>
<td>APC08Y03</td>
</tr>
<tr>
<td>1.8V-6.0V</td>
<td>2.5V</td>
<td>8A</td>
<td>91%</td>
<td>APC08G03</td>
</tr>
<tr>
<td>1.8V-6.0V</td>
<td>3.3V</td>
<td>8A</td>
<td>93%</td>
<td>APC08F03</td>
</tr>
<tr>
<td>5.0V-13.0V</td>
<td>0.9V</td>
<td>8A</td>
<td>76%</td>
<td>APC08J08</td>
</tr>
<tr>
<td>5.0V-13.0V</td>
<td>1.2V</td>
<td>8A</td>
<td>81%</td>
<td>APC08K08</td>
</tr>
<tr>
<td>5.0V-13.0V</td>
<td>1.5V</td>
<td>8A</td>
<td>84%</td>
<td>APC08M08</td>
</tr>
<tr>
<td>5.0V-13.0V</td>
<td>1.8V</td>
<td>8A</td>
<td>86%</td>
<td>APC08Y08</td>
</tr>
<tr>
<td>5.0V-13.0V</td>
<td>2.5V</td>
<td>8A</td>
<td>90%</td>
<td>APC08G08</td>
</tr>
<tr>
<td>5.0V-13.0V</td>
<td>3.3V</td>
<td>8A</td>
<td>92%</td>
<td>APC08F08</td>
</tr>
</tbody>
</table>

## Dimensions

### Top view

---

### Pin Assignments

1. Vin
2. Trim
3. Gnd
4. Vo
5. PGood
6. Enable
7. P

Notes:
1. "Top view" means the logo face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
APC12 Non-isolated SMT Series

Features

- Point of load (POL) applications
- High efficiency, 3.3V@90%
- -40 to +85 Ambient operating temperature
- Open Frame SMT
- Positive enable function
- Low output ripple and noise
- Regulation to zero load
- Programmable Output from 0.9V to 3.6V
- (External Trim Resistor)
- Fixed frequency switching (400KHZ)

Environmental

- Operating case temperature range:
  -40°C to +85°C
- Storage temperature:
  -55°C to +105°C
- MTBF:>1 million hours

Safety

UL,cUL 1950 Recognized
TUV EN60950 Licensed

Electrical Specifications

Input

Input Range 1.8 to 6.0Vdc
5.0 to 13.0Vdc

Output

Voltage Adjust 0.9V to 3.6V
Regulation (Line,Load,Temp) <3%
Ripple and Noise 75mVpp (>2.5V Output)
50mVpp (<2.5V Output)
Transient Response 5%Vo max.
  recovery <500uSec max.
  (25% step load change from 50%Io)
### Ordering Information

<table>
<thead>
<tr>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.8V-6.0V</td>
<td>0.9V@12A</td>
<td>12A</td>
<td>76%</td>
<td>APC12J03</td>
</tr>
<tr>
<td>1.8V-6.0V</td>
<td>1.2V@12A</td>
<td>12A</td>
<td>81%</td>
<td>APC12K03</td>
</tr>
<tr>
<td>1.8V-6.0V</td>
<td>1.5V@12A</td>
<td>12A</td>
<td>86%</td>
<td>APC12M03</td>
</tr>
<tr>
<td>1.8V-6.0V</td>
<td>1.8V@12A</td>
<td>12A</td>
<td>87%</td>
<td>APC12Y03</td>
</tr>
<tr>
<td>1.8V-6.0V</td>
<td>2.5V@12A</td>
<td>12A</td>
<td>90%</td>
<td>APC12G03</td>
</tr>
<tr>
<td>1.8V-6.0V</td>
<td>3.3V@12A</td>
<td>12A</td>
<td>92%</td>
<td>APC12F03</td>
</tr>
<tr>
<td>5.0V-13.0V</td>
<td>0.9V@12A</td>
<td>12A</td>
<td>73%</td>
<td>APC12J08</td>
</tr>
<tr>
<td>5.0V-13.0V</td>
<td>1.2V@12A</td>
<td>12A</td>
<td>77%</td>
<td>APC12K08</td>
</tr>
<tr>
<td>5.0V-13.0V</td>
<td>1.5V@12A</td>
<td>12A</td>
<td>81%</td>
<td>APC12M08</td>
</tr>
<tr>
<td>5.0V-13.0V</td>
<td>1.8V@12A</td>
<td>12A</td>
<td>82%</td>
<td>APC12Y08</td>
</tr>
<tr>
<td>5.0V-13.0V</td>
<td>2.5V@12A</td>
<td>12A</td>
<td>87%</td>
<td>APC12G08</td>
</tr>
<tr>
<td>5.0V-13.0V</td>
<td>3.3V@12A</td>
<td>12A</td>
<td>90%</td>
<td>APC12F08</td>
</tr>
</tbody>
</table>

**Notes:**
1. "Top view" means the logo face to viewer.
2. The detail and recommended hole pattern layout is available in the Application Manual.
Industry Standard Non-Isolated

**Features**

- ATH Series modules with Auto-Track Sequencing are Point-of-Load Alliance (POLA) products
- POLA offers customers advanced nonisolated modules that provide the same functionality form factor and electrical interoperability
- Products range from 6A to 30A in the families
- High efficiency
- Standardized electronically interoperable technology
- Same PWM for consistent performance under all conditions
- POLA partners have common leadfree manufacturing roadmap

**Safety**

EN60950 (TÜV Product Service)
UL/cUL60950
### Featuring “Auto-Track™ Sequencing”

#### 0.8 - 2.5V POLA Industry Standard, Non-Isolated

<table>
<thead>
<tr>
<th>Iout</th>
<th>Voltage</th>
<th>Voltage Package (mm)</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>6A</td>
<td>3.3V (3.0-3.6V)</td>
<td>0.87” x 0.50” x 0.34” (22.1 x 12.70 x 8.64)</td>
<td>95%</td>
<td>ATH06T033-9*</td>
</tr>
<tr>
<td>8A</td>
<td>3.3V (3.0-3.6V)</td>
<td>0.90” x 0.33” x 0.50” (22.9 x 8.4 x 12.70) SIP</td>
<td>94%</td>
<td>PTV03010WAH</td>
</tr>
<tr>
<td>10A</td>
<td>3.3V (3.0-3.6V)</td>
<td>1.00” x 0.62” x 0.35” (25.4 x 15.7 x 8.9)</td>
<td>92%</td>
<td>ATH10T033-9*</td>
</tr>
<tr>
<td>15A</td>
<td>3.3V (3.0-3.6V)</td>
<td>1.37” x 0.62” x 0.35” (34.8 x 15.7 x 8.9)</td>
<td>95%</td>
<td>ATH15T033-9*</td>
</tr>
<tr>
<td>18A</td>
<td>3.3V (3.0-3.6V)</td>
<td>1.75” x 0.35” x 0.50” (44.5 x 8.9 x 12.7) SIP</td>
<td>92%</td>
<td>PTV03020WAH</td>
</tr>
<tr>
<td>22A</td>
<td>3.3V (3.0-3.6V)</td>
<td>1.50” x 0.87” x 0.35” (38.1 x 22.1 x 8.9)</td>
<td>93%</td>
<td>ATH22T033-9*</td>
</tr>
<tr>
<td>30A</td>
<td>3.3V (3.0-3.6V)</td>
<td>1.37” x 1.12” x 0.35” (34.8 x 28.4 x 8.9)</td>
<td>93%</td>
<td>ATH30T033-9*</td>
</tr>
</tbody>
</table>

#### 0.8-3.6V POLA Industry Standard, Non-Isolated

<table>
<thead>
<tr>
<th>Iout</th>
<th>Voltage</th>
<th>Voltage Package (mm)</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>6A</td>
<td>5.0V (4.5-5.5V)</td>
<td>0.87” x 0.50” x 0.34” (22.1 x 12.70 x 8.64)</td>
<td>95%</td>
<td>ATH06T05-9*</td>
</tr>
<tr>
<td>8A</td>
<td>5.0V (4.5-5.5V)</td>
<td>0.90” x 0.33” x 0.50” (22.9 x 8.4 x 12.70) SIP</td>
<td>95%</td>
<td>PTV05010WAH</td>
</tr>
<tr>
<td>10A</td>
<td>5.0V (4.5-5.5V)</td>
<td>1.00” x 0.62” x 0.35” (25.4 x 15.7 x 8.9)</td>
<td>92%</td>
<td>ATH10T05-9*</td>
</tr>
<tr>
<td>15A</td>
<td>5.0V (4.5-5.5V)</td>
<td>1.37” x 0.62” x 0.35” (34.8 x 15.7 x 8.9)</td>
<td>96%</td>
<td>ATH15T05-9*</td>
</tr>
<tr>
<td>18A</td>
<td>5.0V (4.5-5.5V)</td>
<td>1.75” x 0.35” x 0.50” (44.5 x 8.9 x 12.7) SIP</td>
<td>92%</td>
<td>PTV05020WAH</td>
</tr>
<tr>
<td>22A</td>
<td>5.0V (4.5-5.5V)</td>
<td>1.50” x 0.87” x 0.35” (38.1 x 22.1 x 8.9)</td>
<td>93%</td>
<td>ATH22T05-9*</td>
</tr>
<tr>
<td>30A</td>
<td>5.0V (4.5-5.5V)</td>
<td>1.37” x 1.12” x 0.35” (34.8 x 28.4 x 8.9)</td>
<td>94%</td>
<td>ATH30T05-9*</td>
</tr>
</tbody>
</table>

#### 1.2-5.5V POLA Industry Standard, Non-Isolated

<table>
<thead>
<tr>
<th>Iout</th>
<th>Voltage</th>
<th>Voltage Package (mm)</th>
<th>Efficiency</th>
<th>Model Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>6A</td>
<td>12.0V (10.8-13.2V)</td>
<td>0.87” x 0.50” x 0.34” (22.1 x 12.70 x 8.64)</td>
<td>95%</td>
<td>ATH06K12-9*</td>
</tr>
<tr>
<td>8A</td>
<td>12.0V (10.8-13.2V)</td>
<td>0.90” x 0.33” x 0.50” (22.9 x 8.4 x 12.70) SIP</td>
<td>95%</td>
<td>PTV12010WAH</td>
</tr>
<tr>
<td>10A</td>
<td>12.0V (10.8-13.2V)</td>
<td>1.00” x 0.62” x 0.35” (25.4 x 15.7 x 8.9)</td>
<td>92%</td>
<td>ATH10K12-9*</td>
</tr>
<tr>
<td>12A</td>
<td>12.0V (10.8-13.2V)</td>
<td>1.37” x 0.62” x 0.35” (34.8 x 15.7 x 8.9)</td>
<td>94%</td>
<td>ATH12K12-9*</td>
</tr>
<tr>
<td>18A</td>
<td>12.0V (10.8-13.2V)</td>
<td>1.50” x 0.87” x 0.35” (38.1 x 22.1 x 8.9)</td>
<td>95%</td>
<td>ATH18K12-9*</td>
</tr>
<tr>
<td>18A</td>
<td>12.0V (10.8-13.2V)</td>
<td>1.75” x 0.35” x 0.50” (44.5 x 8.9 x 12.7) SIP</td>
<td>92%</td>
<td>PTV12020WAH</td>
</tr>
<tr>
<td>26A</td>
<td>12.0V (10.8-13.2V)</td>
<td>1.37” x 1.12” x 0.35” (34.8 x 28.4 x 8.9)</td>
<td>94%</td>
<td>ATH26K12-9*</td>
</tr>
</tbody>
</table>

Note: *Add appropriate suffix for available option(s)*
- **S** = Surface Mount Termination (default is TH)
- **J** = Tray Packaging (default is T&R)
- **SJ** = Surface Mount/Tray Package
## System Series

<table>
<thead>
<tr>
<th>Model</th>
<th>Power</th>
</tr>
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<tbody>
<tr>
<td>GIE4805/2A/500</td>
<td>500</td>
</tr>
<tr>
<td>GIE4815/3A/2.55KW-1B</td>
<td>2.55KW</td>
</tr>
<tr>
<td>GIE4805/2A/500-2</td>
<td>500-2</td>
</tr>
<tr>
<td>GIE4820/3A/3.45KW</td>
<td>3.45KW</td>
</tr>
<tr>
<td>GIE4815/2A/1.7KW</td>
<td>1.7KW</td>
</tr>
<tr>
<td>GIE4825/3A/4.35KW</td>
<td>4.35KW</td>
</tr>
<tr>
<td>GIE4815/3A/2.55KW-1A</td>
<td>2.55KW</td>
</tr>
<tr>
<td>GIE4815/2A/1.6kW</td>
<td>1.6kW</td>
</tr>
</tbody>
</table>
### Power System:

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GIE 48</td>
<td>15 / 3 A / 2.55KW – 1A</td>
</tr>
</tbody>
</table>

- **Rated Output Voltage**: 48 V (48V), 27 V (27V)
- **Rated Output Current (Each Module)**: 5 A (5A), 15 A (15A), 25 A (25A), 65 A (65A)
- **Max. Module Number in fully system**: 2 up to 2 Module, 3 up to 3 Module, 4 up to 4 Module, 5 up to 5 Module
- **Type of Power System**: A = AC/DC power system, D = DC/DC power system
- **Maxium Power**: 500, 1.7KW, 2.55KW, 4.35KW, 9KW
- **Version Code**:
## Power System

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Input Voltage</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Output Power</th>
<th>Package Type</th>
<th>W<em>H</em>D(mm)</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>GIE4805/2A/500</td>
<td>220Vac</td>
<td>- 48Vdc</td>
<td>10A</td>
<td>500W</td>
<td>19” Rack,1U Profile</td>
<td>483<em>44</em>322</td>
<td>103</td>
</tr>
<tr>
<td>GIE4805/2A/500-2</td>
<td>220Vac</td>
<td>- 48Vdc</td>
<td>10A</td>
<td>540W</td>
<td>19” Rack,1U Profile</td>
<td>483<em>43</em>240</td>
<td>105</td>
</tr>
<tr>
<td>GIE4815/2A/1.7KW</td>
<td>220V/110Vac</td>
<td>- 48Vdc</td>
<td>30A</td>
<td>1700W</td>
<td>19” Rack,2U Profile</td>
<td>483<em>88</em>341</td>
<td>107</td>
</tr>
<tr>
<td>GIE4815/3A/2.55KW-1A</td>
<td>220V/110Vac</td>
<td>- 48Vdc</td>
<td>45A</td>
<td>2550W</td>
<td>19” Rack,3U Profile</td>
<td>483<em>133</em>350</td>
<td>109</td>
</tr>
<tr>
<td>GIE4815/3A/2.55KW-1B</td>
<td>110Vac</td>
<td>- 48Vdc</td>
<td>45A</td>
<td>2550W</td>
<td>19” Rack,3U Profile</td>
<td>483<em>133</em>350</td>
<td>111</td>
</tr>
<tr>
<td>GIE4820/3A/3.45KW</td>
<td>220V/110Vac</td>
<td>- 48Vdc</td>
<td>60A</td>
<td>3450W</td>
<td>19” Rack,3U Profile</td>
<td>483<em>133</em>350</td>
<td>113</td>
</tr>
<tr>
<td>GIE4825/3A/4.35KW</td>
<td>220V/110Vac</td>
<td>- 48Vdc</td>
<td>75A</td>
<td>4350W</td>
<td>19” Rack,3U Profile</td>
<td>483<em>133</em>406</td>
<td>115</td>
</tr>
<tr>
<td>GIE4815/2A/1.6KW</td>
<td>220V/110Vac</td>
<td>- 48Vdc</td>
<td>28A</td>
<td>1600W</td>
<td>19” Rack,1U Profile</td>
<td>483<em>42</em>325</td>
<td>117</td>
</tr>
</tbody>
</table>
GIE4805/2A/500 Power System

Environmental

- Operating temperature: -5~+50°C
- Storage temperature: -40~+70°C
- Relative humidity: ≤ 90%
- Air pressure: 86~106KPa
- MTBF: ≥ 150Khrs (Bellcore TR-332)

Electrical Specifications

Input

- Input voltage: 150V~280VAC
- Input current: 5A(Max.)
- Frequency: 47~63Hz
- Efficiency: ≥ 81%(Typical)
- Power Factor: ≥ 0.99(Typical)
- Battery input: one group

Output

- Output power: 600W(Max.)
- Output voltage: 52~59VDC
- Output current: up to 10A
- DC distribution branch:
  - Branch 1: 15A (Fuse)
  - Branch 2: 15A (Fuse)
  - Battery: 15A (Fuse)
- Peak-peak noise: ≤200mV(BW.20MHz)
- Total regulation: ≤± 1%Vout
- Load sharing: ≤± 5%(50%-100%Load)

Features

- 19” subrack mounting, 1U profile
- Active Power Factor Correction
- Intelligent battery management function
- Environmental parameter monitoring function
- Two branches DC distribution output
- Hot-swap (rectifier and monitor)
- Lightning arrester protection inside
- RS232 interface
- Forced air-cooling

System Configurations

<table>
<thead>
<tr>
<th>Components</th>
<th>Optional Configuration</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rectifier module</td>
<td>2</td>
<td>HRS300-9000</td>
</tr>
<tr>
<td>Monitoring module</td>
<td>0~1</td>
<td>PSM-B3</td>
</tr>
<tr>
<td>AC&amp;DC power distribution Subrack</td>
<td>1</td>
<td>GIE4805/LB</td>
</tr>
<tr>
<td>Lightning Arrester Box</td>
<td>0~1</td>
<td>W14205ZB</td>
</tr>
</tbody>
</table>

Safety & EMC

- TUV EN60950
- CE Mark
- Conduction Emission: EN55022 CLASS B
- Radiation Emission: EN55022 CLASS B
GIE4805/2A/500
Power System

**Other Specifications**

1. **Protection**
   - DC Output Over Voltage Protection
   - DC Output Short Current Protection
   - DC Output Over Current Protection
   - AC Input Over Voltage Protection
   - AC Input Low Voltage Protection
   - Over Temperature Protection

2. **Intelligent Battery Management Function**
   - Temperature Compensation
   - Battery Low Voltage Disconnection
   - Equalize/Float charge transfer
   - Current limiting

**Mechanical**

- **Dimensions**: 43.6 x 482.6 x 321.6mm (HxWxD)
- **Weight**: <6.25kg
- **Cooling**: Forced air cooling
- **Enclosure**: IP20
- **Mounting**: In 19” Subrack

**Symbol Assignments**

<table>
<thead>
<tr>
<th>NO</th>
<th>Name</th>
<th>Description</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AC input socket</td>
<td>AC input IEC 320 C14</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Rectifier Module 1</td>
<td>Rectifier Module HRS300-9000</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Rectifier Module 2</td>
<td>Rectifier Module HRS300-9000</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Indicator light</td>
<td>&quot;RUN&quot; light GREEN LED</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Indicator light</td>
<td>&quot;ALM&quot; light RED LED</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Monitoring Module</td>
<td>Monitoring Module PSM-B3</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Communication port</td>
<td>RS232</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Load 1 branch terminal</td>
<td>Load 1 branch terminal P2441-02</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Load 2 branch terminal</td>
<td>Load 2 branch terminal P2441-02</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Battery branch terminal</td>
<td>Battery branch terminal P2441-02</td>
<td></td>
</tr>
</tbody>
</table>

**Outline**

Note: All specifications are subject to change without notification.
GIE4805/2A/500-2
Power System

Features

• 19" subrack mounting, 1 U profile
• Wide input voltage range
• Active power factor correction
• Intelligent battery management function
• Two branches DC distribution output
• Hot-swap (rectifier and monitor)
• Lightning arrester protection inside
• RS232 interface
• Front access
• Forced air-cooling

Environmental

Operating temperature: -5~+55°C
Storage temperature: -50~+70°C
Relative humidity: ≤95%
Air pressure: 86~106KPa
MTBF: ≥150Khrs (Bellcore TR-332)

Electrical Specifications

Input
- Input voltage: 90V~264VAC
- Input current: 8.4A(Max.)
- Frequency: 47~63Hz
- Efficiency: ≥80%(Typical)
- Power Factor: ≥0.95
- Battery input: one group

Output
- Output power: 540W(Max.)
- Output voltage: -53.5~−54.5VDC
- Output current: up to 10A
- DC distribution branch:
  - Branch 1: 8A (Fuse)
  - Branch 2: 8A (Fuse)
  - Battery: 8A (Fuse)
- Peak-peak noise: ≤200mV(BW.20MHz)
- Total regulation: ≤±0.5%Vout
- Load Sharing imbalance: ≤±15%

System Configurations

<table>
<thead>
<tr>
<th>Components</th>
<th>Optional Configuration</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rectifier module</td>
<td>1~3</td>
<td>HRS300-9000B</td>
</tr>
<tr>
<td>Monitoring module</td>
<td>1</td>
<td>PSM-B3A</td>
</tr>
<tr>
<td>AC&amp;DC power distribution Subrack</td>
<td>1</td>
<td>GIE4805/LB</td>
</tr>
<tr>
<td>Lightning Arrester Box</td>
<td>0~1</td>
<td>W24205ZA</td>
</tr>
</tbody>
</table>

Safety & EMC

UL 1950
TUV EN60950
CE Mark
Conduction Emission: EN55022 CLASS B
Radiation Emission: EN55022 CLASS B
GIE4805/2A/500-2
Power System

Other Specifications

1. Protection
   - DC Output Over Voltage Protection
   - DC Output Short Current Protection
   - DC Output Over Current Protection
   - AC Input Over Voltage Protection
   - AC Input Low Voltage Protection
   - Over Temperature Protection

2. Intelligent Battery Management Function
   - Battery Low Voltage Disconnection
   - Current limiting

Mechanical

- Dimensions: 43 x 482.6 x 240mm (HxWxD)
- Weight: <10kg
- Cooling: Forced air cooling
- Enclosure: IP20
- Mounting: In 19” Subrack

Symbol Assignments

<table>
<thead>
<tr>
<th>NO</th>
<th>Name</th>
<th>Description</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AC input socket</td>
<td>AC input</td>
<td>IEC 320 C14</td>
</tr>
<tr>
<td>2</td>
<td>Rectifier Module</td>
<td>Rectifier Module</td>
<td>HRS300-9000</td>
</tr>
<tr>
<td>3</td>
<td>Rectifier Module</td>
<td>Rectifier Module</td>
<td>HRS300-9000</td>
</tr>
<tr>
<td>4</td>
<td>Indicator light</td>
<td>&quot;RUN&quot; light,&quot;Vout&quot; light</td>
<td>GREEN LED</td>
</tr>
<tr>
<td>5</td>
<td>Indicator light</td>
<td>&quot;ALM&quot; light</td>
<td>RED LED</td>
</tr>
<tr>
<td>6</td>
<td>Monitoring Module</td>
<td>Monitoring Module</td>
<td>PSM-B3A</td>
</tr>
<tr>
<td>7</td>
<td>Communication port</td>
<td>Communication port RS232</td>
<td>D89</td>
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<td>8</td>
<td>Load 1 branch terminal</td>
<td>Load 1 branch terminal</td>
<td>P2441-02</td>
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<tr>
<td>9</td>
<td>Load 2 branch terminal</td>
<td>Load 2 branch terminal</td>
<td>P2441-02</td>
</tr>
<tr>
<td>10</td>
<td>Battery branch terminal</td>
<td>Battery branch terminal</td>
<td>P2441-02</td>
</tr>
<tr>
<td>11</td>
<td>Loading Module</td>
<td>Loading Module</td>
<td>GIE4805/LB</td>
</tr>
</tbody>
</table>

Outline

Note: All specifications are subject to change without notification.
GIE4815/2A/1.7KW
Power System

**Features**

- 19” subrack mounting, 2U profile
- Wide input voltage range
- Active Power Factor Correction
- Intelligent battery management function
- Environmental parameter monitoring function
- Five branches DC distribution output
- Hot-swap (rectifier and monitor)
- Lightning arrester protection inside
- RS485/RS422 interface
- Forced air-cooling

**Environmental**

- Operating temperature: -10°C to +50°C
- Storage temperature: -40°C to +70°C
- Relative humidity: ≤ 90%
- Air pressure: 86~106KPa
- MTBF: ≥ 150Khrs (Bellcore TR-332)

**Electrical Specifications**

**Input**

- Input voltage: 90V~290VAC (90~157.5VAC derating)
- Input current: 13A (Max.)
- Frequency: 45~65Hz
- Efficiency: ≥ 88%
- Power Factor: ≥ 0.99
- Battery input: up to two group

**Output**

- Output power: 1700W (Max.)
- Output voltage: -43.2V~57.6VDC
- Output current: 30A
- DC distribution branch:
  - Branch 1: 20A (Fuse)
  - Branch 2: 20A (Fuse)
  - Branch 3: 10A (Fuse)
  - Branch 4: 5A (Fuse)
  - Branch 5: 5A (Fuse)
  - Battery 1: 50A (MCB)
  - Battery II: 50A (MCB)
- Peak-peak noise: ≤ 200mV (BW.20MHz)
- Total regulation: ≤ ±1%Vout
- Load sharing: ≤ ±5%

**System Configurations**

<table>
<thead>
<tr>
<th>Components</th>
<th>Optional Configuration</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rectifier module</td>
<td>1~2</td>
<td>HRS850-9000C</td>
</tr>
<tr>
<td>Monitoring module</td>
<td>1</td>
<td>M1421Z</td>
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<tr>
<td>Distribution subrack</td>
<td>1</td>
<td>[W1421ZB]PSM-86</td>
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**Safety & EMC**

- TUV EN60950
- CE Mark
- Conduction Emission: EN55022 CLASS A
- Radiation Emission: EN55022 CLASS A
GIE4815/2A/1.7KW
Power System

Other Specifications

1. Protection
   DC Output Over Voltage Protection
   DC Output Short Current Protection
   DC Output Over Current Protection
   AC Input Over Voltage Protection
   AC Input Low Voltage Protection
   Over Temperature Protection

2. Intelligent Battery Management Function
   Temperature Compensation
   Battery Low Voltage Disconnection
   Equalize/Float charge transfer
   Current limiting

3. Environmental Parameter Monitoring Function
   Battery temperature
   Three alarm dry contact output

Mechanical

Dimensions  88.1 x 482.6 x 341mm(HxWxD)
Weight      <10kg
Cooling     Forced air cooling
Enclosure   IP20
Mounting    In 19”Subrack

Symbol Assignments

<table>
<thead>
<tr>
<th>No.</th>
<th>Symbol</th>
<th>Description</th>
<th>Type</th>
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<tbody>
<tr>
<td>1</td>
<td>F00389-000CC</td>
<td>Perforated mesh</td>
<td>YD-40389-000</td>
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<td>2</td>
<td>LED</td>
<td>DC display voltage and current value</td>
<td>YZD-46330</td>
</tr>
<tr>
<td>3</td>
<td>BAT1 50A</td>
<td>DC battery string</td>
<td>NJF1-410-10A</td>
</tr>
<tr>
<td>4</td>
<td>BAT2 50A</td>
<td>DC battery string</td>
<td>NJF1-410-10A</td>
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<td>BATT2</td>
<td>Battery temperature</td>
<td>NIF1-410-10A</td>
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<td>5A fuse</td>
<td>S151010K</td>
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<td>S1516020K</td>
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<td>10</td>
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<td>FUSE 20A</td>
<td>20A fuse</td>
<td>S1516020K</td>
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<td>12</td>
<td>MB1</td>
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<td>S1004-160-15-019</td>
</tr>
<tr>
<td>13</td>
<td>MB10</td>
<td>Battery monitoring module</td>
<td>S1004-160-15-019</td>
</tr>
<tr>
<td>14</td>
<td>ALM</td>
<td>When power system’s operating condition is normal</td>
<td>YF-99</td>
</tr>
<tr>
<td>15</td>
<td>RUIN</td>
<td>When the wiring condition is normal, the green LED is on</td>
<td>YF-99</td>
</tr>
<tr>
<td>16</td>
<td>FU ALM</td>
<td>When the inverter is operating normally, the red LED is on</td>
<td>YF-99</td>
</tr>
<tr>
<td>17</td>
<td>LDA</td>
<td>When input DC In-DC voltage is less than the threshold voltage</td>
<td>YF-99</td>
</tr>
<tr>
<td>18</td>
<td>VRI</td>
<td>Setting of voltage/current monitor</td>
<td>YF-99</td>
</tr>
</tbody>
</table>

Note: All specifications are subject to change without notification.
GIE4815/3A/2.55KW-1A
Power System

Features

- 19" subrack mounting, 3U profile
- Wide input voltage range
- Active Power Factor Correction
- Intelligent battery management function
- Environmental parameter monitoring function
- Four branches DC distribution output
- Hot-swap (rectifier and monitor)
- Lightning arrester protection inside
- RS232/RS422 interface
- Front access
- Forced air-cooling

Environmental

Operating temperature: -10 to +55°C
Storage temperature: -40 to +70°C
Relative humidity: ≤ 90%
Air pressure: 86 to 106 KPa
MTBF: ≥ 150 Khrs (Bellcore TR-332)

Input

- Input voltage: 90V~290VAC
  (90~157.5VAC derating)
- Input current: 20A (Max.)
- Frequency: 45~65Hz
- Efficiency: ≥ 88%
- Power Factor: ≥ 0.99
- Battery input: up to two group

Output

- Output power: 2550W (Max.)
- Output voltage: -43.2~57.6VDC
- Output current: up to 45A
- DC distribution branch:
  - Branch 1: 10A (MCB)
  - Branch 2: 20A (MCB)
  - Branch 3: 20A (MCB)
  - Branch 4: 50A (MCB)
  - Battery: 63A (MCB)
- Peak-peak noise: ≤ 200mV (BW: 20MHz)
- Total regulation: ≤ ±1%Vout
- Load sharing imbalance: ≤ ±5%

Electrical Specifications

System Configurations

<table>
<thead>
<tr>
<th>Components</th>
<th>Optional Configuration</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rectifier module</td>
<td>1~3</td>
<td>HRS850-9000C</td>
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<tr>
<td>Monitoring module</td>
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<td>Signal Transfer Box</td>
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<td>W1A431Z1/Z2</td>
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Safety & EMC

TUV EN60950
CE Mark
Conduction Emission: EN55022 CLASS B
Radiation Emission: EN55022 CLASS B
**GIE4815/3A/2.55KW-1A**

**Power System**

### Other Specifications

1. **Protection**
   - DC Output Over Voltage Protection
   - DC Output Short Current Protection
   - DC Output Over Current Protection
   - AC Input Over Voltage Protection
   - AC Input Low Voltage Protection
   - Over Temperature Protection

2. **Intelligent Battery Management Function**
   - Temperature Compensation
   - Battery discharge test
   - Battery Low Voltage Disconnection
   - Load Low Voltage Disconnection
   - Equalize/Float charge transfer
   - Current limiting

3. **Environmental Parameter Monitoring Function**
   - Battery temperature
   - Ambient temperature
   - Ambient humidity
   - Gate magnetic
   - Water-immersing
   - Smoke etc.
   - Two alarm dry contact output

### Mechanical

- **Dimensions**: 132.5 x 482.6 x 350mm (HxWxD)
- **Weight**: <15kg
- **Cooling**: Forced air cooling
- **Enclosure**: IP20
- **Mounting**: In 19” Subrack

### Symbol Assignments

<table>
<thead>
<tr>
<th>No.</th>
<th>Symbol</th>
<th>Description</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A</td>
<td>Circuit breaker for AC input</td>
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</tr>
<tr>
<td>2</td>
<td>B</td>
<td>Circuit breaker for battery input</td>
<td>63A</td>
</tr>
<tr>
<td>3</td>
<td>C</td>
<td>Circuit breaker for load 1</td>
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<td>D</td>
<td>Circuit breaker for load 2</td>
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<td>Circuit breaker for load 4</td>
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<td>G</td>
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<td>CRT</td>
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<td>I</td>
<td>Communication port RS422</td>
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<td>J</td>
<td>Battery temperature monitor</td>
<td>WM300</td>
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<td>11</td>
<td>K</td>
<td>Ambient temperature monitor</td>
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<td>12</td>
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<td>Ambient humidity monitor</td>
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<td>N</td>
<td>Water-immersing sensor</td>
<td>WM300</td>
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<td>15</td>
<td>O</td>
<td>Smoke detector</td>
<td>WM300</td>
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<tr>
<td>16</td>
<td>P</td>
<td>Two alarm dry contact output</td>
<td>WM300</td>
</tr>
</tbody>
</table>

Note: All specifications are subject to change without notification.
GIE4815/3A/2.55KW-1B
Power System

Features

- 19" subrack mounting, 3U profile
- Wide input voltage range
- Active Power Factor Correction
- Intelligent battery management function
- Environmental parameter monitoring function
- Four branches DC distribution output
- Hot-swap (rectifier and monitor)
- Lightning arrester protection inside
- RS232/RS422 interface
- Front access
- Forced air-cooling

Environmental

- Operating temperature: -10~+55°C
- Storage temperature: -40~+70°C
- Relative humidity: ≤ 90%
- Air pressure: 86~106KPa
- MTBF: ≥ 150KHz (Belcore TR-332)

Electrical Specifications

Input

- Input voltage: 88V~155VAC
- Input current: 35A (Max.)
- Frequency: 45~65Hz
- Efficiency: ≥ 85%
- Power Factor: ≥ 0.99
- Battery input: up to two group

Output

- Output power: 2550W (Max.)
- Output voltage: -43.2~57.6VDC
- Output current: up to 45A
- DC distribution branch:
  - Branch 1: 10A (MCB)
  - Branch 2: 20A (MCB)
  - Branch 3: 20A (MCB)
  - Branch 4: 50A (MCB)
  - Battery: 63A (MCB)
- Peak-peak noise: ≤ 200mV (BW.20MHz)
- Total regulation: ≤ ± 1% Vout
- Load sharing imbalance: ≤ ± 5%

System Configurations

<table>
<thead>
<tr>
<th>Components</th>
<th>Optional Configuration</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rectifier module</td>
<td>1~3</td>
<td>(HRS850-9000D)</td>
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<tr>
<td>Monitoring module</td>
<td>1</td>
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<td>[W1B431ZB]</td>
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<tr>
<td>Signal Transfer Box</td>
<td>0~1</td>
<td>[W1B431Z1/Z2]</td>
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</table>

Safety & EMC

- UL UL60950
- Conduction Emission FCC CLASS B
- Radiation Emission FCC CLASS B
GIE4815/3A/2.55KW-1B
Power System

Other Specifications

1. Protection
   DC Output Over Voltage Protection
   DC Output Short Current Protection
   DC Output Over Current Protection
   AC Input Over Voltage Protection
   AC Input Low Voltage Protection
   Over Temperature Protection

2. Intelligent Battery Management Function
   Temperature Compensation
   Battery discharge test
   Battery Low Voltage Disconnection
   Load Low Voltage Disconnection
   Equalize/Float charge transfer
   Current limiting

3. Environmental Parameter Monitoring Function
   Battery temperature
   Ambient temperature
   Ambient humidity
   Gate magnetic
   Water-immersing
   Smoke etc.
   Two alarm dry contact output

Mechanical

Dimensions 132.5 x 482.6 x 350mm(HxWxD)
Weight <18kg
Cooling Forced air cooling
Enclosure IP20
Mounting In 19”Subrack

Symbol Assignments

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Function</th>
<th>Type</th>
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<tbody>
<tr>
<td>1</td>
<td>AC input MCB</td>
<td>Circuit breaker for AC input control</td>
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<td>Battery MCB</td>
<td>Circuit breaker for battery terminal</td>
<td>EUA</td>
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<td>3</td>
<td>Load I output MCB</td>
<td>Circuit breaker for load 1 control</td>
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<td>4</td>
<td>Load 2 output MCB</td>
<td>Circuit breaker for load 2 control</td>
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<td>5</td>
<td>Load 3 output MCB</td>
<td>Circuit breaker for load 3 control</td>
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<td>Load 4 output MCB</td>
<td>Circuit breaker for load 4 control</td>
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<td>Equalizing relay</td>
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<td>Battery temperature measurement</td>
<td>BTP1100, BTP2000</td>
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<td>14</td>
<td>Ambient temperature measurement</td>
<td>Ambient temperature measurement</td>
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<td>15</td>
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<td>Ambient humidity measurement</td>
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<td>Gate magnetic measurement</td>
<td>GMM1100, GMM2000</td>
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<td>Water-immersing measurement</td>
<td>Water-immersing measurement</td>
<td>WIM1100, WIM2000</td>
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<tr>
<td>18</td>
<td>Smoke etc. measurement</td>
<td>Smoke etc. measurement</td>
<td>SMM1100, SMM2000</td>
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</table>

Note: All specifications are subject to change without notification.
GIE4820/3A/3.45KW
Power System

**Features**

- 19” subrack mounting, 3U profile
- Wide input voltage range
- Active Power Factor Correction
- Intelligent battery management function
- Environmental parameter monitoring function
- Four branches DC distribution output
- Hot-swap (rectifier and monitor)
- Lightning arrester protection inside
- RS232/RS422 interface
- Front access
- Forced air-cooling

**Environmental**

- Operating temperature: -10~+50°C
- Storage temperature: -40~+70°C
- Relative humidity: ≤ 90%
- Air pressure: 86~106KPa
- MTBF: ≥ 150Khrs
  (Bellcore TR-332 )

**Electrical Specifications**

**Input**

- Input voltage: 90V~290VAC
  (90~176VAC derating)
- Input current: 25A(Max.)
- Frequency: 45~65Hz
- Efficiency: ≥ 89%
- Power Factor: ≥ 0.99
- Battery input: up to two group

**Output**

- Output power: 3450W(Max.)
- Output voltage: -43.2~57.6VDC
- Output current: up to 60A
- DC distribution branch:
  - Branch 1: 10A (MCB)
  - Branch 2: 20A (MCB)
  - Branch 3: 20A (MCB)
  - Branch 4: 50A (MCB)
  - Battery: 63A (MCB)
- Peak-peak noise: ≤ 200mV(BW.20MHz)
- Total regulation: ≤± 1%Vout
- Load sharing imbalance: ≤± 5%

**System Configurations**

<table>
<thead>
<tr>
<th>Components</th>
<th>Optional Configuration</th>
<th>Inner Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rectifier module</td>
<td>1~3</td>
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<td>Signal Transfer Box</td>
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<td>W1A431Z1/Z2</td>
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**Safety & EMC**

- TUV EN60950
- CE Mark
- Conduction Emission: EN55022 CLASS B
- Radiation Emission: EN55022 CLASS B
GIE4815/3A/2.55KW-1B
Power System

Other Specifications

1. Protection
   DC Output Over Voltage Protection
   DC Output Short Current Protection
   DC Output Over Current Protection
   AC Input Over Voltage Protection
   AC Input Low Voltage Protection
   Over Temperature Protection

2. Intelligent Battery Management Function
   Temperature Compensation
   Battery discharge test
   Battery Low Voltage Disconnection
   Load Low Voltage Disconnection
   Equalize/Float charge transfer
   Current limiting

3. Environmental Parameter Monitoring Function
   Battery temperature
   Ambient temperature
   Ambient humidity
   Gate magnetic
   Water-immersing
   Smoke etc
   Two alarm dry contact output

Outline

Mechanical

Dimensions  132.5 x 482.6 x 350mm(HxWxD)
Weight       <18kg
Cooling      Forced air cooling
Enclosure    IP20
Mounting     In 19”Subrack

Symbol Assignments

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Description</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AC input 1</td>
<td>Circuit breaker for AC input control</td>
<td>EMK</td>
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<td>Circuit breaker for battery input control</td>
<td>EMK</td>
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<td>Load 1 output 1</td>
<td>Circuit breaker for load 1 control</td>
<td>JMK</td>
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</tbody>
</table>

Note: All specifications are subject to change without notification.
GIE4825/3A/4.35KW
Power System

Electrical Specifications

Input
- Input voltage: 90V~290VAC (90~176VAC derating)
- Input current: 30A(Max.)
- Frequency: 45~65Hz
- Efficiency: ≥ 88%
- Power Factor: ≥ 0.99
- Battery input: one group

Output
- Output power: 4350W(Max.)
- Output voltage: -43.2~-57.6VDC
- Output current: up to 75A
- DC distribution branch
  - Branch 1: 50A (MCB)
  - Branch 2: 50A (MCB)
  - Branch 3: 20A (MCB)
  - Battery: 63A (MCB)
- Peak-peak noise: ≤ 200mV(BW.20MHz)
- Total regulation: ≤± 1%Vout
- Load sharing imbalance: ≤± 5%

Features
- 19" subrack mounting, 3U profile
- Wide input voltage range
- Active Power Factor Correction
- Intelligent battery management function
- Environmental parameter monitoring function
- Three branches DC distribution output
- Hot-swap (rectifier and monitor)
- Lightning arrester protection inside
- RS232/RS422 interface
- Forced air-cooling
- DC lighting protection

Environmental
- Operating temperature: -5~+50°C
- Storage temperature: -40~+70°C
- Relative humidity: ≤ 90%
- Air pressure: 86~106KPa
- MTBF: ≥ 150Khrs (Bellcore TR-332)

System Configurations

<table>
<thead>
<tr>
<th>Components</th>
<th>Optional Configuration</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rectifier module</td>
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</table>

Safety & EMC
- TUV EN60950
- CE Mark
- Conduction Emission: EN55022 CLASS B
- Radiation Emission: EN55022 CLASS B
GIE4825/3A/4.35KW
Power System

Other Specifications

1. Protection
   DC Output Over Voltage Protection
   DC Output Short Current Protection
   DC Output Over Current Protection
   AC Input Over Voltage Protection
   AC Input Low Voltage Protection
   Over Temperature Protection

2. Intelligent Battery Management Function
   Temperature Compensation
   Battery discharge test
   Battery Low Voltage Disconnection
   Load Low Voltage Disconnection
   Battery high temperature disconnection
   Equalize/Float charge transfer
   Current limiting

3. Environmental Parameter Monitoring Function
   Battery temperature
   Ambient temperature
   Ambient humidity
   Gate magnetic
   Water-immersing
   Smoke etc.
   Two alarm dry contact output

Outline

Mechanical

- Dimensions: 132.5 x 482.6 x 405.7mm (HxWxD)
- Weight: <22kg
- Cooling: Forced air cooling
- Enclosure: IP20
- Mounting: In 19” Subrack

Note: All specifications are subject to change without notification.
**GIE4815/2A/1.6kW Power System**

**Features**
- 19" subrack mounting, 1U profile
- Wide input voltage range
- Active Power Factor Correction
- Intelligent battery management function
- Environmental parameter monitoring function
- Two branches DC distribution output
- Hot-swap (rectifier and monitor)
- Lightning arrester protection inside
- RS232/RS422 interface
- Front access
- Forced air-cooling

**Environmental**
- Operating temperature: -5~+50°C
- Storage temperature: -40~+70°C
- Relative humidity: ≤ 90%(40± 2°C)
- Air pressure: 70~106KPa
- MTBF: ≥ 150Khrs
  (Belcore TR-332)

**Electrical Specifications**

**Input**
- Input voltage: 85V~300VAC
  (85~176VAC derating)
- Input current: 12A(Max.)
- Frequency: 45~65Hz
- Efficiency: ≥ 89%
- Power Factor: ≥ 0.99
- Battery input: one group

**Output**
- Output power: 1600W(Max.)
- Output voltage: -43.2~57.6VDC
- Output current: up to 28A
- DC distribution branch
  - Branch 1: 10A (FVSE)
  - Branch 2: 20A (FVSE)
  - Battery: 20A (FVSE)
- Peak-peak noise: ≤ 200mV(BW.20MHz)
- Total regulation: ≤± 1%Vout
- Load sharing: ≤± 5%

**System Configurations**

<table>
<thead>
<tr>
<th>Components</th>
<th>Optional Configuration</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rectifier module</td>
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<td>Monitoring module</td>
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**Safety & EMC**

- TUV EN60950
- CE Mark
- Conduction Emission: EN55022 CLASS B
- Radiation Emission: EN55022 CLASS B
GIE4815/2A/1.6kW
Power System

Other Specifications

1. Protection
   - DC Output Over Voltage Protection
   - DC Output Short Current Protection
   - DC Output Over Current Protection
   - AC Input Over Voltage Protection
   - AC Input Low Voltage Protection
   - Over Temperature Protection

2. Intelligent Battery Management Function
   - Temperature Compensation
   - Battery Discharge Test
   - Battery Low Voltage Disconnection
   - Load Low Voltage Disconnection
   - Equalize/Float Charge Transfer
   - Current Limiting

3. Environmental Parameter Monitoring Function
   - Battery temperature
   - Ambient temperature
   - Ambient humidity
   - Gate magnetic
   - Water-immersing
   - Smoke etc
   - Two alarm dry contact output

Outline

Mechanical

- Dimensions: 41.6 x 482.6 x 325mm (HxWxD)
- Weight: <8kg
- Cooling: Forced air cooling
- Enclosure: IP20
- Mounting: In 19” Subrack

Note: All specifications are subject to change without notification.
Glossary

A
accuracy ------------------------------------ 精度
air pressure ---------------------------------- 气压
altitude -------------------------------------- 海拔高度
aluminum board ----------------------------- 铝板结构
aluminum electrolytic capacitor --------------- 铝电解电容器
aluminum substate --------------------------- 铝基板结构
ambient temperature ------------------------ 环境温度
assignment ------------------------------- 配置定义
AC Input Low Voltage Protection -------------- 输入欠压保护
AC Input Over Voltage Protection -------------- 输入过压保护
Active Power Factor Correction ------------- 有源功率因数校正
Air pressure -------------------------------- 气压
Ambient humidity --------------------------- 环境湿度
Ambient temperature ------------------------ 环境温度

B
basic insulation --------------------------- 基本绝缘
Board Mounted Power(BMP) ------------------ 印制板装电源（俗称二次电源）
burning ------------------------------------ 老化
Battery discharge test ---------------------- 电池放电测试
Battery Low Voltage Disconnection ------------ 电池欠压脱离
Battery temperature ------------------------ 电池温度

C
Centralized Power Architecture(CPA) --------- 集中式供电结构
ceramic capacitor -------------------------- 陶瓷电容器
certification ----------------------------- 认证
chip capacitor ---------------------------- 片状电容器
clamp ------------------------------------- 钳位
CNT -------------------------------------- 遥控开关机
compatible ------------------------------- 兼容的
conducted emission ------------------------ 传导干扰
cross-regulation -------------------------- 交叉调整率
current limit ----------------------------- 限流
current sharing -------------------------- 均流
Conduction Emission ----------------------- 传导干扰
Current limiting --------------------------- 限流
Datacom ------------------------------- 数据通信  
default ------------------------------- 默认  
definition ------------------------------- 定义  
delay time ------------------------------- 延迟时间  
derate ------------------------------- 降额  
deviation ------------------------------- 背离  
dimension ------------------------------- 尺寸  
Distributed Power Architecture(DPA) ------------------------------- 分布式供电结构  
dual outputs ------------------------------- 双路输出  
dynamic regulation ------------------------------- 动态调整率  
DC distribution ------------------------------- 直流配电  
DC Output Over Current Protection ------------------------------- 输出过流保护  
DC Output Over Voltage Protection ------------------------------- 输出过压保护  
DC Output Short Current Protection ------------------------------- 输出短路保护  
Dimensions（HxWxD） ------------------------------- 外形尺寸（高 x 宽 x 深）  
Dry contact ------------------------------- 干结电  

efficiency ------------------------------- 效率  
ElectroMagnetic Compatibility(EMC) ------------------------------- 电磁兼容性  
Emerson Network Power ------------------------------- 艾默生网络能源  
encapsulate ------------------------------- 灌胶  
ESD ------------------------------- 静电  
Enclosure ------------------------------- 外壳防护  
Environmental parameter monitoring function ------------------------------- 环境量监控  
Equal Charge/Float Charge transfer ------------------------------- 均充 / 浮充转换  

feature ------------------------------- 特性  
ferrite core ------------------------------- 磁芯  
forced air cooling ------------------------------- 强制风冷  
Front End(FE) ------------------------------- 前端模块  
full brick ------------------------------- 全砖  
full load ------------------------------- 满载  
function ------------------------------- 功能  
fuse ------------------------------- 熔断器
Forced air-cooling — 强制风冷
Frequency — 频率
Front access — 前面接入维护

G
gate magnetic — 门磁

H
half brick — 半砖
heatsink — 散热器
hiccup — 打嗝
high current density — 高电流密度
high power density — 高功率密度
hysteresis — 回差
Hot-swap — 热插拔

I
immunity — 抗扰性
inductor — 电感器
inrush current — 输入冲击电流
insulation — 绝缘
isolation — 隔离
Input current — 输入电流
Input voltage — 输入电压
Intelligent battery management — 智能电池管理

L
latch — 锁死
Layout — 布局图
line regulation — 线性调整率（又称源调整率）
load regulation — 负载调整率
Lower Voltage Protection(LVP) — 欠压保护
Lightning arrester protection — 防雷保护
Load Low Voltage Disconnection — 负载欠压脱离
Load sharing imbalance — 均流不平衡度
maintain ——— 维护
Mean Time Between Failure(MTBF) ——— 平均无故障时间
mechanical ——— 机械
multilayer board PCB ——— 多层印制板
multiple outputs ——— 多路输出
MCB ——— 空开
MTBF ——— 平均无故障时间

negative logic ——— 负逻辑
noise voltage ——— 噪声电压
Non-isolated ——— 非隔离

open-frame ——— 开放式结构
open-shelf ——— 开架式结构
operating temperature ——— 工作温度
Over Current Protection(OCP) ——— 过流保护
Over Temperature Protection(OTP) ——— 过温保护
Over Voltage Protection(OVP) ——— 过压保护
overshoot ——— 过冲
Operating temperature ——— 工作温度
Output current ——— 输出电流
Output power ——— 输出功率
Output voltage ——— 输出电压
Over Temperature Protection ——— 过温保护

package style ——— 封装型式
parallel ——— 并联
parameter ——— 参数
pilot ——— 中试
pin ——— 插针，管脚
Point Of Load(POL) ——— 点负载
positive logic  ---------------------------- 正逻辑
product number  ----------------------------- 产品型号
profile  ----------------------------- 外形
prototype  ----------------------------- 初样
Peak-peak noise  ----------------------------- 峰峰值噪声
Power Factor  ----------------------------- 功率因数
Power System  ----------------------------- 内置电源系统

quad outputs  ----------------------------- 四路输出
quarter brick  ----------------------------- 1/4 砖

radiated emission  ----------------------------- 辐射干扰
rating  ----------------------------- 额定
reflected ripple current  ----------------------------- 反射纹波电流
reliability  ----------------------------- 可靠性
remote control  ----------------------------- 遥控
ring generator  ----------------------------- 铃流发生器
ripple voltage  ----------------------------- 纹波电压
Radiation Emission  ----------------------------- 辐射干扰
Relative humidity  ----------------------------- 相对湿度

schottky diode  ----------------------------- 肖特基二极管
screw fasten  ----------------------------- 螺钉紧固结构
sense  ----------------------------- 远端补偿
sequence  ----------------------------- 时序
setpoint  ----------------------------- 整定值
shock  ----------------------------- 冲击
short circuit  ----------------------------- 短路
single output  ----------------------------- 单路输出
Single-In-line Package  ----------------------------- 单列直插电源
soft start  ----------------------------- 软启动
specification  ----------------------------- 规格
start up time ----------------------------- 启动时间
storage temperature ------------------------ 存储温度
supply voltage rejection ---------------------- 音频隔离度
surge --------------------------------- 涌
synchronous rectification ---------------------- 同步整流
Storage temperature ------------------------ 存储温度

T

tantalum electrolytic capacitor ----------------------- 钽电解电容器
Telecom ---------------------------------- 电信
topology ---------------------------------- 拓扑
Total Harmonic Distortion(THD) ---------------------- 总谐波畸变率
transformer ---------------------------------- 变压器
transient response -------------------------------- 瞬态响应
Trim ------------------------------------- 电压调节
triple outputs ---------------------------------- 三路输出
Temperature Compensation --------------------- 温度补偿
Total regulation -------------------------------- 调整率

V

voltage dip ---------------------------------- 电压暂降
voltage short interruption ---------------------- 电压短时中断
voltage variation -------------------------------- 电压变化

W

Water–immersing -------------------------------- 水浸