## DC-DC Converters PCB Mount type

**ZUW1R5**

**RoHS**

### Ordering information

<table>
<thead>
<tr>
<th>ZU</th>
<th>W</th>
<th>1R5</th>
<th>12</th>
<th>12</th>
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</thead>
</table>

**Specifications**

### Input

<table>
<thead>
<tr>
<th>Model</th>
<th>ZUW1R50512</th>
<th>ZUW1R50515</th>
<th>ZUW1R51212</th>
<th>ZUW1R51215</th>
<th>ZUW1R52412</th>
<th>ZUW1R52415</th>
<th>ZUW1R54812</th>
<th>ZUW1R54815</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max output wattage [W]</td>
<td>1.56</td>
<td>1.50</td>
<td>1.56</td>
<td>1.50</td>
<td>1.56</td>
<td>1.50</td>
<td>1.56</td>
<td>1.50</td>
</tr>
</tbody>
</table>

### Output

**DC Output**

<table>
<thead>
<tr>
<th>Model</th>
<th>ZUW1R50512</th>
<th>ZUW1R50515</th>
<th>ZUW1R51212</th>
<th>ZUW1R51215</th>
<th>ZUW1R52412</th>
<th>ZUW1R52415</th>
<th>ZUW1R54812</th>
<th>ZUW1R54815</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage [V]</td>
<td>12 or +24</td>
<td>15 or +30</td>
<td>12 or +24</td>
<td>15 or +30</td>
<td>12 or +24</td>
<td>15 or +30</td>
<td>12 or +24</td>
<td>15 or +30</td>
</tr>
<tr>
<td>Current [A]</td>
<td>0.065</td>
<td>0.050</td>
<td>0.065</td>
<td>0.050</td>
<td>0.065</td>
<td>0.050</td>
<td>0.065</td>
<td>0.050</td>
</tr>
</tbody>
</table>

**Specifications**

### Input

<table>
<thead>
<tr>
<th>Model</th>
<th>ZUW1R50512</th>
<th>ZUW1R50515</th>
<th>ZUW1R51212</th>
<th>ZUW1R51215</th>
<th>ZUW1R52412</th>
<th>ZUW1R52415</th>
<th>ZUW1R54812</th>
<th>ZUW1R54815</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage [V]</td>
<td>DC4.5 - 9</td>
<td>DC9 - 18</td>
<td>DC18 - 36</td>
<td>DC36 - 72</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current [A]</td>
<td>0.466typ</td>
<td>0.448typ</td>
<td>0.183typ</td>
<td>0.176typ</td>
<td>0.092typ</td>
<td>0.088typ</td>
<td>0.046typ</td>
<td>0.044typ</td>
</tr>
<tr>
<td>Efficiency [%]</td>
<td>67typ</td>
<td>67typ</td>
<td>71typ</td>
<td>71typ</td>
<td>71typ</td>
<td>71typ</td>
<td>71typ</td>
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</table>

### Output

<table>
<thead>
<tr>
<th>Model</th>
<th>ZUW1R50512</th>
<th>ZUW1R50515</th>
<th>ZUW1R51212</th>
<th>ZUW1R51215</th>
<th>ZUW1R52412</th>
<th>ZUW1R52415</th>
<th>ZUW1R54812</th>
<th>ZUW1R54815</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current [A]</td>
<td>0.065</td>
<td>0.050</td>
<td>0.065</td>
<td>0.050</td>
<td>0.065</td>
<td>0.050</td>
<td>0.065</td>
<td>0.050</td>
</tr>
</tbody>
</table>

**Protection Circuit**

- Overcurrent protection
- Overvoltage protection

### Isolation

- Input-output: AC500V 1-minute, Cutoff current = 10mA. DC500V 50Ω min (20 ± 15°C)
- Input-case: AC500V 1-minute, Cutoff current = 10mA. DC500V 50Ω min (20 ± 15°C)
- Output-case: AC500V 1-minute, Cutoff current = 10mA. DC500V 50Ω min (20 ± 15°C)

### Environment

- Operating temp., humid., and altitude: -20 to +71°C; 20 - 95% RH (Non-condensing) (Refer to DERATING CURVE). 3,000m (10,000feet) max
- Storage temp., humid., and altitude: -40 to +85°C; 20 - 95% RH (Non-condensing). 9,000m (30,000feet) max
- Vibration: 10 - 55Hz. 98.0ms² (10G). 3minutes period. 60minutes each along X, Y and Z axis
- Impact: 490.3ms² (50G). 11ms. once each X, Y and Z axis

### Safety

- Agency Approvals: UL60950-1. EN60950-1. CSA C22.2 No.60950-1 Complies with IEC60950-1

### Other

- Case size/weight: 27.5 x 7 x 18mm (W x H x D) / 10g max
- Cooling method: Convection

---

*1 Rated input 5V, 12V, 24V or 48V DC, Io=100%.
*2 Measured by 20MHz oscilloscope.
*3 The drift is a change at 25°C of ambient temperature and 30 minutes - 8 hours after the input voltage applied at rated input/output.
*4 The output specification is at 12V and 15V.
*5 Series/Parallel operation with other model is not possible.
External view

Performance data

■ STATIC CHARACTERISTICS (ZUW1R50515)

![Graph of static characteristics](image)

■ RISE TIME & FALL TIME (ZUW1R50515:+15V)

![Graph of rise and fall time](image)

■ OVERCURRENT CHARACTERISTICS (ZUW1R50515)

![Graph of overcurrent characteristics](image)

■ DERATING CURVE

![Graph of derating curve](image)
## DC-DC Converters PCB Mount type

### ZUW3

**Features**
- RoHS compliant
- Meets CE and UL standards

### Ordering Information

<table>
<thead>
<tr>
<th>Model</th>
<th>ZUW30512</th>
<th>ZUW30515</th>
<th>ZUW31212</th>
<th>ZUW31215</th>
<th>ZUW32412</th>
<th>ZUW32415</th>
<th>ZUW34812</th>
<th>ZUW34815</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Max Output Wattage [W]</strong></td>
<td>3.12</td>
<td>3.00</td>
<td>3.12</td>
<td>3.00</td>
<td>3.12</td>
<td>3.00</td>
<td>3.12</td>
<td>3.00</td>
</tr>
<tr>
<td><strong>Input Voltage [V]</strong></td>
<td>DC4.5 - 9</td>
<td>DC9 - 18</td>
<td>DC18 - 36</td>
<td>DC36 - 72</td>
<td>DC4.5 - 9</td>
<td>DC9 - 18</td>
<td>DC18 - 36</td>
<td>DC36 - 72</td>
</tr>
<tr>
<td><strong>Current [A]</strong></td>
<td>0.13</td>
<td>0.10</td>
<td>0.13</td>
<td>0.10</td>
<td>0.13</td>
<td>0.10</td>
<td>0.13</td>
<td>0.10</td>
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<tr>
<td><strong>Efficiency [%]</strong></td>
<td>70%</td>
<td>70%</td>
<td>74%</td>
<td>74%</td>
<td>74%</td>
<td>74%</td>
<td>75%</td>
<td>75%</td>
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<tr>
<td><strong>Voltage Regulation [mV]</strong></td>
<td>60 max</td>
<td>75 max</td>
<td>60 max</td>
<td>75 max</td>
<td>60 max</td>
<td>75 max</td>
<td>60 max</td>
<td>75 max</td>
</tr>
<tr>
<td><strong>Load Regulation [mV]</strong></td>
<td>600 max</td>
<td>750 max</td>
<td>600 max</td>
<td>750 max</td>
<td>600 max</td>
<td>750 max</td>
<td>600 max</td>
<td>750 max</td>
</tr>
<tr>
<td><strong>Ripple [mVp-p]</strong></td>
<td>120 max</td>
<td>120 max</td>
<td>120 max</td>
<td>120 max</td>
<td>120 max</td>
<td>120 max</td>
<td>120 max</td>
<td>120 max</td>
</tr>
<tr>
<td><strong>Start-Up Time [ms]</strong></td>
<td>20 max (Minimum input, Io=100%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Protection Circuit</strong></td>
<td>Works over 105% of rating and recovers automatically</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Isolation</strong></td>
<td>AC500V 1 minute. Cutoff current = 10mA. DC500V 50MHz min (20-15°C)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Environment</strong></td>
<td>Operating Temp. Humid. and Altitude</td>
<td>-20 to +71°C, 20% - 95%RH (Non condensing) (Refer to DERATING CURVE). 3,000m (10,000feet) max</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Storage Temp. Humid. and Altitude</td>
<td>-40 to +85°C, 20% - 95%RH (Non condensing), 9.000m (30,000feet) max</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vibration</td>
<td>10 - 55Hz. 98.0ms² (10G). 3minutes period. 60minutes each along X, Y and Z axis</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Impact</td>
<td>490.3ms² (50G). 11ms. once each X, Y and Z axis</td>
<td></td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td><strong>Safety</strong></td>
<td>Agency Approvals</td>
<td>UL60950-1. EN60950-1. CSA C22.2 No.60950-1 Complies with IEC60950-1</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Others</strong></td>
<td>Case Size/Weight</td>
<td>35 x 7 x 23mm (W x H x D) / 16g max</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cooling Method</td>
<td>Convection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Notes
- Rated input 5V, 12V, 24V or 48V DC, Io=100%.
- Measured by 20MHz oscilloscope.
- The drift is a change at 25°C of ambient temperature and 30 minutes - 8 hours after the input voltage applied at rated input/output.
- The output specification is at ±12V and ±15V.
- Series/Parallel operation with other model is not possible.
**External view**

The converter is in contact with the slanted area of the P.C.B. To keep isolation, adequate wiring on the mounted side is required.

- **Performance data**

  - **STATIC CHARACTERISTICS (ZUW30515)**

  - **RISE TIME & FALL TIME (ZUW30515:+15V)**

  - **OVERCURRENT CHARACTERISTICS (ZUW30515)**

  - **DERATING CURVE**

  - **OVERCURRENT CHARACTERISTICS (ZUW30515)**

- **Recommended size for processing PCB (TOP VIEW)**

- **Dimensions in mm [inch]**

- **Specifications**
  - **Weight**: 16g or less.
  - **Tolerance**: ± 0.5
  - **Case material**: Brass

- **Name plate**

- **Performance data**

- **June 29, 2011**
DC-DC Converters PCB Mount type

ZUW6

**Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>ZUW60512</th>
<th>ZUW60515</th>
<th>ZUW61212</th>
<th>ZUW61215</th>
<th>ZUW62412</th>
<th>ZUW62415</th>
<th>ZUW64812</th>
<th>ZUW64815</th>
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</thead>
<tbody>
<tr>
<td><strong>MAX OUTPUT WATTAGE [W]</strong></td>
<td>6.00</td>
<td>6.00</td>
<td>6.00</td>
<td>6.00</td>
<td>6.00</td>
<td>6.00</td>
<td>6.00</td>
<td>6.00</td>
</tr>
<tr>
<td><strong>DC OUTPUT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VOLTAGE [V]</td>
<td>±12 or +24</td>
<td>±15 or +30</td>
<td>±12 or +24</td>
<td>±15 or +30</td>
<td>±12 or +24</td>
<td>±15 or +30</td>
<td>±12 or +24</td>
<td>±15 or +30</td>
</tr>
<tr>
<td>CURRENT [A]</td>
<td>0.25</td>
<td>0.20</td>
<td>0.25</td>
<td>0.20</td>
<td>0.25</td>
<td>0.20</td>
<td>0.25</td>
<td>0.20</td>
</tr>
</tbody>
</table>

**Output pins can be connected in series to make a 24V/30V output.**

**Protection Circuit**

- **OVERCURRENT PROTECTION**: Works over 105% of rating and recovers automatically.

**Isolation**

- **INPUT-OUTPUT**: AC500V 1minute. Cutoff current = 10mA. DC500V 50MΩ min (20±15°C).
- **INPUT-CASE**: AC500V 1minute. Cutoff current = 10mA. DC500V 50MΩ min (20±15°C).
- **OUTPUT-CASE**: AC500V 1minute. Cutoff current = 10mA. DC500V 50MΩ min (20±15°C).

**Environment**

- **OPERATING TEMP., HUMID. AND ALTITUDE**: -20 to +71°C. 20 - 95%RH (Non condensing). (Refer to DERATING CURVE). 3,000m (10,000feet) max.
- **STORAGE TEMP., HUMID. AND ALTITUDE**: -40 to +85°C. 20 - 95%RH (Non condensing). 9,000m (30,000feet) max.
- **VIBRATION**: 10 - 55Hz. 9.8m/s² (10G). 3minutes period. 60minutes each along X, Y and Z axis.
- **IMPACT**: 490.3m/s² (50G). 11ms. once each X, Y and Z axis.

**Safety**

- **AGENCY APPROVALS**: UL60950-1. EN60950-1. CSA C22.2 No.60950-1. Complies with IEC60950-1.

**Others**

- **CASE SIZE/WEIGHT**: 44.5×7×28mm (W×H×D) / 25g max.
- **COOLING METHOD**: Convection.

---

1. Rated input 5V, 12V, 24V or 48V DC. Io=100%.
2. Measured by 20MHz oscilloscope.
3. The drift is a change at 25°C of ambient temperature and 30 minutes - 8 hours after the input voltage applied at rated input/output.

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**Note:**

- The output specifications are at ±12V and ±15V.
- Series/Parallel operation with other model is not possible.
Performance data

■STATIC CHARACTERISTICS (ZUW60515)

- OUTPUT VOLTAGE
- Ripple

■RISE TIME & FALL TIME (ZUW60515:+15V)

- DC OUTPUT
- DC INPUT
- DCIN 4.5V (+) Io=100%
- 5ms/DIV

■OVERCURRENT CHARACTERISTICS (ZUW60515)

- OUTPUT VOLTAGE
- (-) Io=100%

■DERATING CURVE

- LOAD FACTOR (%)
- AMBIENT TEMPERATURE (°C)
- Convection
- Forced Air (0.5m³/min)
### SPECIFICATIONS

**MODEL ZUW100512 ZUW100515 ZUW101212 ZUW101215 ZUW102412 ZUW102415 ZUW104812 ZUW104815**

<table>
<thead>
<tr>
<th>SPECIFICATION</th>
<th>ZUW100512</th>
<th>ZUW100515</th>
<th>ZUW101212</th>
<th>ZUW101215</th>
<th>ZUW102412</th>
<th>ZUW102415</th>
<th>ZUW104812</th>
<th>ZUW104815</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MAX OUTPUT WATTAGE [W]</strong></td>
<td>8.4</td>
<td>9.0</td>
<td>10.8</td>
<td>10.5</td>
<td>10.8</td>
<td>10.5</td>
<td>10.8</td>
<td>10.5</td>
</tr>
<tr>
<td><strong>DC OUTPUT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>VOLTAGE [V]</strong></td>
<td>±12 or +24</td>
<td>±15 or +30</td>
<td>±12 or +24</td>
<td>±15 or +30</td>
<td>±12 or +24</td>
<td>±15 or +30</td>
<td>±12 or +24</td>
<td>±15 or +30</td>
</tr>
<tr>
<td><strong>CURRENT [A]</strong></td>
<td>0.35</td>
<td>0.30</td>
<td>0.45</td>
<td>0.35</td>
<td>0.45</td>
<td>0.35</td>
<td>0.45</td>
<td>0.35</td>
</tr>
</tbody>
</table>

**INPUT**

<table>
<thead>
<tr>
<th>VOLTAGE [V]</th>
<th>DC4.5 - 9</th>
<th>DC9 - 18</th>
<th>DC18 - 36</th>
<th>DC36 - 72</th>
</tr>
</thead>
<tbody>
<tr>
<td>CURRENT [A]</td>
<td>2.24typ</td>
<td>2.40typ</td>
<td>1.12typ</td>
<td>1.09typ</td>
</tr>
<tr>
<td>EFFICIENCY [%]</td>
<td>75typ</td>
<td>75typ</td>
<td>81typ</td>
<td>81typ</td>
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</tbody>
</table>

**OUTPUT**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CURRENT [A]</td>
<td>0.35</td>
<td>0.30</td>
<td>0.45</td>
<td>0.35</td>
<td>0.45</td>
<td>0.35</td>
<td>0.45</td>
<td>0.35</td>
</tr>
<tr>
<td>LINE REGULATION [mV]</td>
<td>60max</td>
<td>75max</td>
<td>60max</td>
<td>75max</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOAD REGULATION [mV]</td>
<td>600max</td>
<td>750max</td>
<td>600max</td>
<td>750max</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RIPPLE [mVp-p]</td>
<td>120max</td>
<td>120max</td>
<td>120max</td>
<td>120max</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RIPPLE NOISE [mVp-p]</td>
<td>150max</td>
<td>150max</td>
<td>150max</td>
<td>150max</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TEMPERATURE REGULATION [°C]</td>
<td>-40 to +65</td>
<td>-40 to +65</td>
<td>-40 to +65</td>
<td>-40 to +65</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DRIFT [mV]</td>
<td>50max</td>
<td>60max</td>
<td>50max</td>
<td>60max</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>START-UP TIME [ms]</td>
<td>20max</td>
<td></td>
<td>45max</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PROTECTION CIRCUIT**

- Overcurrent protection: Works over 105% of rating and recovers automatically.

**ISOLATION**

- Input-output: AC500V 1 minute, cutoff current = 10mA, DC500V 50μA min (20±15°C)
- Input-case: AC500V 1 minute, cutoff current = 10mA, DC500V 50μA min (20±15°C)
- Output-case: AC500V 1 minute, cutoff current = 10mA, DC500V 50μA min (20±15°C)

**ENVIRONMENT**

- Operating temp., humidity, and altitude: -20 to +71°C, 20% - 95%RH (Non-condensing) (Refer to DERATING CURVE), 3.000m (10,000feet) max
- Storage temp., humidity, and altitude: -40 to +85°C, 20% - 95%RH (Non-condensing), 9.000m (30,000feet) max
- Vibration: 10 - 55Hz, 98.0ms² (10G), 3 minutes period, 60 minutes each along X, Y, and Z axis
- Impact: 490.3ms² (50G), 11ms, once each X, Y, and Z axis

**SAFETY AGENCY APPROVALS**

- UL60950-1, EN60950-1, CSA C22.2 No.60950-1

**OTHERS**

- Case size/weight: 45 x 7 x 35mm (W x H x D) / 40g max
- Cooling method: Convection

---

*1 Rated input 5V, 12V, 24V or 48V DC, Io=100%.
*2 Measured by 20MHz oscilloscope.
*3 The drift is a change at 25°C of ambient temperature and 30 minutes - 8 hours after the input voltage applied at rated input/output.
*4 The output specification is at ±12V and ±15V.
*5 Series/Parallel operation with other model is not possible.
ZUW10 | COSEL

External view

Performance data

■ STATIC CHARACTERISTICS (ZUW100515)

■ RISE TIME & FALL TIME (ZUW100515:+15V)

■ OVERCURRENT CHARACTERISTICS (ZUW100515)

■ DERATING CURVE

- Weight: 40g or less
- Tolerance: ± 0.5
- Case material: Brass

The converter is in contact with the slanted area of the P.C.B. To keep isolation, adequate wiring on the mounted side is required.

Dimensions in mm

Div.: 0.1inch

Name plate

Specifications

Size between case pins:

Specifications

Weight: 40g or less.
Tolerance: ± 0.5
Case material: Brass

- Dimensions in mm
- Div.: 0.1inch

The converter is in contact with the slanted area of the P.C.B. To keep isolation, adequate wiring on the mounted side is required.

Specifications

Weight: 40g or less.
Tolerance: ± 0.5
Case material: Brass

- Dimensions in mm
- Div.: 0.1inch

The converter is in contact with the slanted area of the P.C.B. To keep isolation, adequate wiring on the mounted side is required.

Specifications

Weight: 40g or less.
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- Dimensions in mm
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The converter is in contact with the slanted area of the P.C.B. To keep isolation, adequate wiring on the mounted side is required.

Specifications

Weight: 40g or less.
Tolerance: ± 0.5
Case material: Brass

- Dimensions in mm
- Div.: 0.1inch

The converter is in contact with the slanted area of the P.C.B. To keep isolation, adequate wiring on the mounted side is required.
### Output pins can be connected in series to make a 24V/30V output.
Performance data

**STATIC CHARACTERISTICS (ZUW151212)**

- **Output Voltage (V)**
  - **Output Current (A)**
  - **Output Voltage (V)**
  - **Output Current (A)**
  - **Output Voltage (V)**
  - **Output Current (A)**

**RISE TIME & FALL TIME (ZUW151212:+12V)**

- **DC OUTPUT**
  - **DC INPUT**
  - **DCIN 9V**
  - **Io = 100%**
  - **1ms/DIV**

**OVERCURRENT CHARACTERISTICS (ZUW151212)**

- **Output Voltage (V)**
  - **Output Current (A)**
  - **Output Voltage (V)**
  - **Output Current (A)**

**DERATING CURVE**

- **Temperature (°C)**
  - **Load Factor (%)**
  - **Convection**
  - **Forced Air (0.5 m³/min)**
  - **Load Factor (%)**
  - **Ambient Temperature (°C)**

**Note:**
- Weight: 55g or less.
- Tolerance: ±0.5
- Case material: Aluminum

The converter is in contact with the slanted area of the P.C.B. To keep isolation, adequate wiring on the mounted side is required.

*Dimensions in mm, Div.: 0.2 inch*
## SPECIFICATIONS

### Input

<table>
<thead>
<tr>
<th>MODEL</th>
<th>ZUW250512</th>
<th>ZUW250515</th>
<th>ZUW251212</th>
<th>ZUW251215</th>
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<th>ZUW252415</th>
<th>ZUW254812</th>
<th>ZUW254815</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage [V]</td>
<td>DC4.5 - 9</td>
<td>DC9 - 18</td>
<td>DC18 - 36</td>
<td>DC36 - 75</td>
<td>DC4.5 - 9</td>
<td>DC9 - 18</td>
<td>DC18 - 36</td>
<td>DC36 - 75</td>
</tr>
<tr>
<td>Current [A]</td>
<td><em>4.92 typ</em></td>
<td><em>4.90 typ</em></td>
<td><em>2.47 typ</em></td>
<td><em>2.50 typ</em></td>
<td><em>1.23 typ</em></td>
<td><em>1.25 typ</em></td>
<td><em>1.25 typ</em></td>
<td><em>0.62 typ</em></td>
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<tr>
<td>Efficiency [%]</td>
<td><em>82 typ</em></td>
<td><em>82 typ</em></td>
<td><em>85 typ</em></td>
<td><em>85 typ</em></td>
<td><em>85 typ</em></td>
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### Output

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<th>ZUW252415</th>
<th>ZUW254812</th>
<th>ZUW254815</th>
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</thead>
<tbody>
<tr>
<td>Current [A]</td>
<td>0.84</td>
<td>0.67</td>
<td>1.05</td>
<td>0.85</td>
<td>1.05</td>
<td>0.85</td>
<td>1.05</td>
<td>0.85</td>
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### Protection Circuit

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<th>ZUW252415</th>
<th>ZUW254812</th>
<th>ZUW254815</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overcurrent Protection</td>
<td>Works over 105% of rating and recovers automatically</td>
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<td></td>
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<td></td>
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<tr>
<td>Overvoltage Protection</td>
<td>Works at 115 - 140% of rating (Total of +V and -V)</td>
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<tr>
<td>Remote On/Off</td>
<td>Between RC and - side of input: short - 1.2V</td>
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### Isolation

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<th>ZUW252415</th>
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</thead>
<tbody>
<tr>
<td>Input-Output</td>
<td>AC500V 1 minute. Cutoff current = 10mA</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Input-Case</td>
<td>AC500V 1 minute. Cutoff current = 10mA</td>
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<tr>
<td>Output-Case</td>
<td>AC500V 1 minute. Cutoff current = 10mA</td>
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### Environment

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<th>ZUW252415</th>
<th>ZUW254812</th>
<th>ZUW254815</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temp, Hum. and Altitude</td>
<td>-20 to +71°C</td>
<td>20 - 95% RH (Non condensing) (Refer to DERATING CURVE), 3.000m (10.000feet) max</td>
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<tr>
<td>Storage Temp, Hum. and Altitude</td>
<td>-40 to +85°C</td>
<td>20 - 95% RH (Non condensing), 9.000m (30.000feet) max</td>
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<tr>
<td>Vibration</td>
<td>10 - 55Hz, 98.0m/s² (10G), 3 minutes period, 60 minutes each along X, Y and Z axis</td>
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<tr>
<td>Impact</td>
<td>490.3m/s² (50G), 11ms. once each X, Y and Z axis</td>
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### Safety

<table>
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<th>ZUW252415</th>
<th>ZUW254812</th>
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</thead>
<tbody>
<tr>
<td>Agency Approvals</td>
<td>UL60950-1, EN60950-1, CSA C22.2 No.60950-1 Complies with IEC60950-1</td>
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<td></td>
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### Other

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<th>ZUW252415</th>
<th>ZUW254812</th>
<th>ZUW254815</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case Size/Weight</td>
<td>65 x 8.5 x 50mm (W x H x D) / 65g max</td>
<td></td>
<td></td>
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<td></td>
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</table>

### Cooling Method

- Convection

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1. Rated input 5V, 12V, 24V or 48V DC, Io=100%.
2. Measured by 20MHz oscilloscope.
3. The drift is a change at 25°C of ambient temperature and 30 minutes - 8 hours after the input voltage applied at rated input/output.
4. The output specification is at ±12V and ±15V.
5. Series/Parallel operation with other model is not possible.
The converter is in contact with the slanted area of the P.C.B. To keep isolation, adequate wiring on the mounted side is required.

Dimensions in mm

- Weight: 65g or less.
- Tolerance: ± 0.5
- Case material: Aluminum

Performance data

[Graphs and diagrams showing static characteristics, rise time, fall time, overcurrent characteristics, and derating curve for ZUW251212.]