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<tr>
<th>SPECIFICATION</th>
<th>NES-200-3.3</th>
<th>NES-200-5</th>
<th>NES-200-7.5</th>
<th>NES-200-12</th>
<th>NES-200-15</th>
<th>NES-200-24</th>
<th>NES-200-27</th>
<th>NES-200-36</th>
<th>NES-200-48</th>
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<tbody>
<tr>
<td>DC VOLTAGE</td>
<td>3.3V</td>
<td>5V</td>
<td>7.5V</td>
<td>12V</td>
<td>15V</td>
<td>24V</td>
<td>27V</td>
<td>36V</td>
<td>48V</td>
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<tr>
<td>RATED CURRENT</td>
<td>40A</td>
<td>40A</td>
<td>27A</td>
<td>17A</td>
<td>14A</td>
<td>8.8A</td>
<td>7.8A</td>
<td>5.9A</td>
<td>4.4A</td>
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<tr>
<td>CURRENT RANGE</td>
<td>0 ~ 40A</td>
<td>0 ~ 40A</td>
<td>0 ~ 27A</td>
<td>0 ~ 17A</td>
<td>0 ~ 14A</td>
<td>0 ~ 8.8A</td>
<td>0 ~ 7.8A</td>
<td>0 ~ 5.9A</td>
<td>0 ~ 4.4A</td>
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<tr>
<td>RATED POWER</td>
<td>132W</td>
<td>200W</td>
<td>202.5W</td>
<td>204W</td>
<td>210W</td>
<td>211.2W</td>
<td>210.6W</td>
<td>212.4W</td>
<td>211.2W</td>
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<tr>
<td>RIPPLE &amp; NOISE (max.)</td>
<td>150mVp-p</td>
<td>150mVp-p</td>
<td>150mVp-p</td>
<td>150mVp-p</td>
<td>150mVp-p</td>
<td>200mVp-p</td>
<td>240mVp-p</td>
<td>240mVp-p</td>
<td>240mVp-p</td>
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<tr>
<td>VOLTAGE ADJ. RANGE</td>
<td>2.97 ~ 3.7V</td>
<td>4.5 ~ 5.6V</td>
<td>6 ~ 9V</td>
<td>10 ~ 13.5V</td>
<td>13.5 ~ 18V</td>
<td>20 ~ 26.4V</td>
<td>26 ~ 32V</td>
<td>32 ~ 40V</td>
<td>41 ~ 56V</td>
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<td>VOLTAGE TOLERANCE</td>
<td>±2.0%</td>
<td>±2.0%</td>
<td>±2.0%</td>
<td>±1.0%</td>
<td>±1.0%</td>
<td>±1.0%</td>
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<tr>
<td>LINE REGULATION</td>
<td>±0.5%</td>
<td>±0.5%</td>
<td>±0.5%</td>
<td>±0.5%</td>
<td>±0.5%</td>
<td>±0.5%</td>
<td>±0.5%</td>
<td>±0.5%</td>
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<tr>
<td>LOAD REGULATION</td>
<td>±1.5%</td>
<td>±1.0%</td>
<td>±1.0%</td>
<td>±1.0%</td>
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<td>±1.0%</td>
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<td>±1.0%</td>
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<tr>
<td>SETUP, RISE TIME</td>
<td>1000ms, 50ms/230VAC</td>
<td>1000ms, 50ms/230VAC</td>
<td>1000ms, 50ms/115VAC at full load</td>
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<tr>
<td>HOLD UP TIME</td>
<td>20ms/230VAC</td>
<td>16ms/115VAC at full load</td>
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<td>INPUT</td>
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<td>VOLTAGE RANGE</td>
<td>Note.4</td>
<td>90 ~ 132VAC / 180 ~ 264VAC by switch</td>
<td>254 ~ 370VDC</td>
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<td>FREQUENCY RANGE</td>
<td>47 ~ 63Hz</td>
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<tr>
<td>EFFICIENCY (Typ.)</td>
<td>75%</td>
<td>79%</td>
<td>82%</td>
<td>85%</td>
<td>85%</td>
<td>87%</td>
<td>88%</td>
<td>89%</td>
<td>89%</td>
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<tr>
<td>AC CURRENT</td>
<td>4.5A/115VAC</td>
<td>2.5A/230VAC</td>
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<tr>
<td>INRUSH CURRENT (max.)</td>
<td>40A/115VAC</td>
<td>55A/230VAC</td>
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<td>LEAKAGE CURRENT</td>
<td>&lt;3.5mA / 240VAC</td>
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<td>PROTECTION</td>
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<tr>
<td>OVER LOAD</td>
<td>105 ~ 150% rated output power</td>
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<tr>
<td>Protection type : Constant current limiting, recovers automatically after fault condition is removed</td>
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<tr>
<td>OVER VOLTAGE</td>
<td>3.8 ~ 4.9V</td>
<td>5.75 ~ 7.0V</td>
<td>9.4 ~ 10.9V</td>
<td>13.8 ~ 16.2V</td>
<td>18 ~ 21V</td>
<td>27.8 ~ 32.4V</td>
<td>33.7 ~ 39.2V</td>
<td>41.4 ~ 46.8V</td>
<td>57.6 ~ 67.2V</td>
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<tr>
<td>Protection type : Shut down O/P voltage, re-power on to recover</td>
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<tr>
<td>OVER TEMPERATURE</td>
<td>95 °C ~ 5 °C (3.3V)</td>
<td>100°C ~ 5°C (5V)</td>
<td>90°C ~ 5°C (7.5V)</td>
<td>85°C ~ 5°C (12 ~ 24V)</td>
<td>80°C ~ 5°C (27 ~ 36V)</td>
<td>75°C ~ 5°C (48V) (T5W1)</td>
<td>Detect on case</td>
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<tr>
<td>Protection type : Shut down O/P voltage, recovers automatically after temperature goes down</td>
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<tr>
<td>WORKING TEMP.</td>
<td>-20 ~ +50 °C</td>
<td>(Refer to output load derating curve)</td>
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<tr>
<td>WORKING HUMIDITY</td>
<td>20 ~ 90% RH non-condensing</td>
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<tr>
<td>STORAGE TEMP., HUMIDITY</td>
<td>-20 ~ +85 °C, 10 ~ 95% RH</td>
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<td>TEMP. COEFFICIENT</td>
<td>±0.03%/°C (0 ~ 50 °C)</td>
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<tr>
<td>VIBRATION</td>
<td>10 ~ 500Hz, 3G 10min./cycle, 60min. each along X, Y, Z axes</td>
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<td>SAFETY STANDARDS</td>
<td>UL60950-1 approved</td>
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<td>WITHSTAND VOLTAGE</td>
<td>I/P-O/P: 3KVAC</td>
<td>I/P-FG: 1.5KVAC</td>
<td>O/P-FG: 0.5KVAC</td>
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<tr>
<td>ISOLATION RESISTANCE</td>
<td>I/P-O/P, I/O-FG: 100M Ohms / 500VDC / 25 °C / 70% RH</td>
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<td>OTHERS</td>
<td>MTBF</td>
<td>271.9K hrs min.</td>
<td>MIL-HDBK-217F (25 °C)</td>
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<tr>
<td>DIMENSION</td>
<td>215<em>115</em>50mm (L<em>W</em>H)</td>
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<tr>
<td>PACKING</td>
<td>0.93Kg; 12pcs/12Kg/0.92CUFT</td>
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<tr>
<td>NOTE</td>
<td>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25 °C of ambient temperature.</td>
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<tr>
<td>2. Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12” twisted pair-wire terminated with a 0.1uf &amp; 47uf parallel capacitor.</td>
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<tr>
<td>3. Tolerance : includes set up tolerance, line regulation and load regulation.</td>
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### Mechanical Specification

#### Case No. 912E  Unit:mm

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Assignment</th>
<th>Pin No.</th>
<th>Assignment</th>
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<tbody>
<tr>
<td>1</td>
<td>AC/L</td>
<td>4~6</td>
<td>DC OUTPUT -V</td>
</tr>
<tr>
<td>2</td>
<td>AC/N</td>
<td>7~9</td>
<td>DC OUTPUT +V</td>
</tr>
<tr>
<td>3</td>
<td>FG</td>
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</table>

Terminal pin number assignment:

- **AC/L**: 4-6 (DC OUTPUT -V)
- **AC/N**: 7-9 (DC OUTPUT +V)
- **FG**: 3

### Block Diagram

- **EMI FILTER**
- **ACTIVE INRUSH CURRENT LIMITING**
- **RECTIFIERS & FILTER**
- **POWER SWITCHING**
- **RECTIFIERS & FILTER**
- **PWM CONTROL**
- **O.P.**
- **O.V.P.**
- **O.T.P.**
- **DETECTION CIRCUIT**

### Derating Curve

- **Load (%)** vs **Ambient Temperature (°C)**
- **3.3~5V**
- **7.5~48V**
- **15~48V**
- **3.3~12V**

### Static Characteristics
Mean Well: