Large Capacitance High Ripple Products Added to “PSG Series” Lead Type Conductive Polymer Aluminum Solid Capacitors

Additional Lineup of 16 mm and 20 mm Height Models in φ8 mm and φ10 mm Products

Nippon Chemi-Con has now added a lineup of large capacitance high ripple products with the maximum capacitance increased up to 2200 µF to the PSG series lead type conductive polymer aluminum solid capacitors with a rated voltage of 16 V thereby expanding the product lineup.

While size reduction and efficiency improvement of various types of switching power supplies is progressing, there is an increasing trend of using conductive polymer aluminum solid capacitors in the secondary side smoothing circuits. In particular, several 16 V 470 µF to 820 µF conductive polymer aluminum solid capacitors connected in parallel are being used in the 12 V outputs of server power supplies.

Conventionally, conductive polymer aluminum solid capacitors used in such applications had a product size of φ8 x 11.5 mm or φ10 x 12.5 mm. However, as size reduction of power supplies is progressing, reduction in the PCB area occupied by the capacitor is being demanded, and Nippon Chemi-Con carried out development of products so as to reduce the number of parallel connections by effectively using the space above the mounted capacitor.

The products in this newly added lineup of the PSG series have their heights increased up to 20 mm, achieving high capacitance and high ripple currents. These products contribute greatly to reducing the PCB space requirement of secondary side smoothing capacitors.

Further, when compared with aluminum electrolytic capacitors of the liquid electrolyte type, not only the magnitude of the rated ripple current but also the capacitance has been increased to more than one higher rank.

Technical Advantages:

The larger capacitance and higher ripple current are realized by the following key technical factors:

- Nippon Chemi-Con has developed in-house the material of the electrode foil that is a major material in aluminum electrolytic capacitors, and a high magnification ratio electrode foil based on its original technology was used in these new products.
- Nippon Chemi-Con has realized a technology of forming uniformly the low resistance conductive polymer in the long internal elements.
Samples and Mass Production Schedule:
Samples: Already being supplied.
Mass production schedule: Planned to start from February 2014.

Specifications:
• Category temperature range: –55°C to +105°C
• Endurance: 5,000 hours at 105°C

Products Added This Time:

<table>
<thead>
<tr>
<th>Series</th>
<th>Rated voltage [Vdc]</th>
<th>Capacitance [μF]</th>
<th>Product size [mm]</th>
<th>ESR [mΩmax./20°C, 100 kHz to 300 kHz]</th>
<th>Rated ripple current [mArms/105°C, 100 kHz]</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSG</td>
<td>820</td>
<td>φ8 x 16 L</td>
<td>8</td>
<td>7,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1,000</td>
<td>φ8 x 20 L</td>
<td>8</td>
<td>7,500</td>
<td></td>
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<tr>
<td></td>
<td>1,200</td>
<td>φ8 x 20 L</td>
<td>8</td>
<td>7,500</td>
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<tr>
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<td>1,500</td>
<td>φ10 x 16 L</td>
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<td>7,700</td>
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<td>1,800</td>
<td>φ10 x 20 L</td>
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<td>8,100</td>
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<tr>
<td></td>
<td>2,200</td>
<td>φ10 x 20 L</td>
<td>8</td>
<td>8,100</td>
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</tr>
</tbody>
</table>

Product External Appearance: