Engineering Specification

Product : Battery Charger for 2 or 4 AA/AAA Ni-MH/Ni-Cd Batteries

Customer :

Customer No. :

Model No. : BC-0902 UL

Design No. :

Date : Jul 7, 2006

Customer Approval

<table>
<thead>
<tr>
<th>Signature</th>
<th>Approval Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Approval

<table>
<thead>
<tr>
<th>Revision</th>
<th>Prepared by</th>
<th>Reviewed by</th>
<th>Approved by</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Content

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Revision History and Deviation</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Product Features</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Electrical Performance and Tests</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Mechanical Tests and Requirements</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Environmental Conditions</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Safety Standards</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Product Inspections</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Cautions</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Charging Times</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Mechanical Drawings</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Nameplate</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

### Important Notice

This datasheet contains typical information specific to products manufactured at the time of its publication.

© Camelon Holdings, Inc. - Contents herein do not constitute a warranty.
0 Revision History and Deviation

0.1 Revision History

<table>
<thead>
<tr>
<th>Revision</th>
<th>Date</th>
<th>By</th>
<th>Description of Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>Jun 7, 2006</td>
<td></td>
<td>New release</td>
</tr>
</tbody>
</table>

0.2 Notice of Deviation

<table>
<thead>
<tr>
<th>Customer Request</th>
<th>Deviation for samples</th>
<th>Mass production</th>
</tr>
</thead>
</table>

Notice of items shall be completed before mass production

<table>
<thead>
<tr>
<th>Description</th>
<th>L/T</th>
<th>Remarks</th>
</tr>
</thead>
</table>

---

**Important Notice**

This datasheet contains typical information specific to products manufactured at the time of its publication. 
©Camelion Holdings, Inc. - Contents herein do not constitute a warranty.
1 Product Features
1.1 Battery Type
Suitable for 2 or 4 AA/AAA Ni-MH/Ni-Cd batteries.

1.2 Reverse Polarity Protection
The electrical circuit protects the charger and batteries from being damaged by incorrectly installed batteries.

1.3 0 Voltage Jump Start
Restore the battery if the battery voltage is 0V

1.4 Low Battery Leakage Current
If the battery charger is not connected to input power and left in the charger, the charger will discharge the batteries using a pre-determined current.

2 Electrical Performance and Tests
2.1 Input voltage
120VAC/60Hz

2.2 Charging voltage and type
Two (2) independent 2.8VDC channels, each channel charges two (2) batteries. Charges only in pairs.

2.3 Charging current
AA: 200mA ☐30mA
AAA :120mA ☐20mA

2.4. Input standby current
Maximum 35mA

2.5 Input loading current
Maximum 50mA

2.6 LED Indicators
RED LED on: Charging

2.7 Hi-pot test
Apply 1500VAC between input plug and charging channel for 1 minute, current leakage must be less than 1mA. After the test, the unit should still work as normal.

2.8 Insulation resistance
Minimum 100M ohms @ DC500V
3 Mechanical Tests and Requirements

3.1 Drop test
Drop from a height of 3 feet onto a concrete floor covered with 1/8 inch vinyl tile. Drop 3 times total, each time on a different product face. Expected result: The unit should still meet the section 1.7. requirements.

3.2 Surface
Damage and rusting are not permitted.

4 Environmental Conditions

4.1 Operating temperature
0° to 40°, best at 25°

4.2 Storage temperature
-20° to 65°, best at 25°

5 Safety standards
ETL

6 Product Inspections

6.1 Inspections of all products
- Charging voltages (2.2)
- Charging current (2.3)
- LED indicators (2.6)
- Hi-pot (2.7)
- Surface (3.2)
- Outside intense vibration
- Polarity of charging channel

6.2 Inspections of selected products
- Battery charging test (@25°C)
- Drop test (3.1)
- DC Resistance (2.8)
7 Cautions

- Children should use product only under adult supervision.
- Mixing batteries of different capacities and sizes in the charger may influence the charging times or damage the batteries.
- Correctly insert the batteries and avoid reversing the +/- polarities.
- Cut off power or take out batteries after the batteries are fully charged.
- The charger is intended for use with Ni-MH/Ni-Cd batteries only. Charging other battery types may cause explosions, breakage, personal injury or property damage.
- For indoor use only. Keep away from humid and hot places.
- Do not disassemble or reassemble the charger.

8 Charging Times

<table>
<thead>
<tr>
<th>Battery Type</th>
<th>Battery Capacity</th>
<th>Charging Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA Ni-MH</td>
<td>2000mAh</td>
<td>12h</td>
</tr>
<tr>
<td>AA Ni-MH</td>
<td>1500mAh</td>
<td>9h</td>
</tr>
<tr>
<td>AAA Ni-MH</td>
<td>600mAh</td>
<td>6h</td>
</tr>
<tr>
<td>AA Ni-Cd</td>
<td>1000mAh</td>
<td>6h</td>
</tr>
<tr>
<td>AA Ni-Cd</td>
<td>800mAh</td>
<td>4.8h</td>
</tr>
<tr>
<td>AAA Ni-Cd</td>
<td>300mAh</td>
<td>3h</td>
</tr>
</tbody>
</table>

---

Important Notice

This datasheet contains typical information specific to products manufactured at the time of its publication.

©Camelion Holdings, Inc. - Contents herein do not constitute a warranty.
9. Mechanical Drawing

NOTE:
1. Tolerance: ± 1.0
2. Unit in mm
3. Date code: XX XX
   Week Year
4. Date code: XX XX
   Year Week
5. Date code: XX XXXX
   Month Year
   Manufacturing Workshop(S1)
6. Date code: A A A

Expresses month shipment time (A expresses the 1st time, B the 2nd time, and so forth)
Expresses shipment month (A for January, B for February, and so forth)
Expresses years (defined A with 2006)

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Date</th>
<th>Revision</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC-0902 UL</td>
<td>Jul 15, 2006</td>
<td>1.0</td>
<td>6/7</td>
</tr>
</tbody>
</table>

Important Notice
This datasheet contains typical information specific to products manufactured at the time of its publication.
© Camelion Holdings, Inc. - Contents herein do not constitute a warranty.
10 Nameplate

Battery Charger
MODEL NO.: BC-0902-UL
INPUT: 120VAC 60Hz 6Wmax
OUTPUT: AA.....2x2.8V 200mA
AAA.....2x2.8V 120mA

Important Notice
This datasheet contains typical information specific to products manufactured at the time of its publication.
©Camelion Holdings, Inc. - Contents herein do not constitute a warranty.