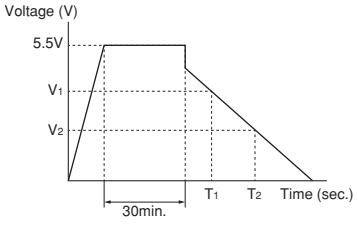
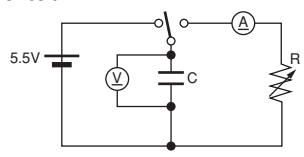
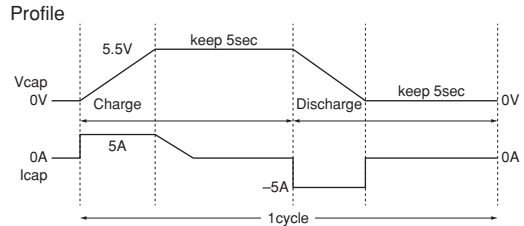


Item	Validation Method	Specification																					
Operating Temperature	—	-40°C to 70°C																					
Nominal Capacitance	<p><Discharge Method> 1. Charge capacitor for 30min. at 5.5V. Charge current: 500mA 2. Then discharge.</p> <p>Voltage (V)</p>  <p>V1: 80% of 5.5V V2: 40% of 5.5V T1: Time with voltage V1 T2: Time with voltage V2 I: Discharge current: 100mA</p> <p><Applying Formula> $C = \frac{I \times (T_2 - T_1)}{V_1 - V_2}$</p> <p><Test Circuit></p> 	Please refer to Lineup list.																					
ESR	<p><Impedance Method> Measured at AC1kHz. Charge Current: 10mA</p>	Please refer to Lineup list.																					
Leakage Current @96hrs	<p>Temperature: 25°C±2°C Charge Voltage: 5.5V Charge Time: 96hrs Charge up to 5.5V and keep the voltage. Measure the current value after 96hrs from the time capacitor voltage reaches 5.5V.</p>	Less than or equal to 5µA at 96hrs.																					
Temperature Characteristics	-40°C to 70°C	<p>Temperature Characteristics</p> <table border="1"> <thead> <tr> <th></th> <th>ESR@1kHz</th> <th>Capacitance</th> </tr> </thead> <tbody> <tr> <td>70°C</td> <td>Less than std value</td> <td>±10%</td> </tr> <tr> <td>40°C</td> <td>Less than std value</td> <td>±10%</td> </tr> <tr> <td>25°C</td> <td>Standard value</td> <td>Standard value</td> </tr> <tr> <td>0°C</td> <td>+40% max.</td> <td>±10%</td> </tr> <tr> <td>-20°C</td> <td>+80% max.</td> <td>±10%</td> </tr> <tr> <td>-40°C</td> <td>+200% max.</td> <td>±10%</td> </tr> </tbody> </table>		ESR@1kHz	Capacitance	70°C	Less than std value	±10%	40°C	Less than std value	±10%	25°C	Standard value	Standard value	0°C	+40% max.	±10%	-20°C	+80% max.	±10%	-40°C	+200% max.	±10%
	ESR@1kHz	Capacitance																					
70°C	Less than std value	±10%																					
40°C	Less than std value	±10%																					
25°C	Standard value	Standard value																					
0°C	+40% max.	±10%																					
-20°C	+80% max.	±10%																					
-40°C	+200% max.	±10%																					
Charge-Discharge Cycle Test	<p>Charge Voltage: 5.5V Charge Current: 5A Discharge Current: 5A Test Temperature: 25°C±2°C Cycle Number: 50,000 times</p> <p>Profile</p> 	<p>Capacitance Change: · Over 50% of initial value ESR Change(@1kHz): · Under 200% of initial value</p>																					
High Temperature Loading	<p>Charge Voltage: 4.2V Test Temperature: 70°C+0°C/-3°C Duration: 1000hrs+24/-0hrs Charge and Discharge Current: 500mA max. Characteristics are measured at 25°C. Allow device to sit for 2hrs min. at 25°C prior to measurement. Connect two balance resistors (4.7kΩ or less) in parallel with each capacitor.</p>	<p>Capacitance Change: · Over 70% of initial value ESR Change(@1kHz): · Under 140% of initial value</p>																					