



Nippon Chemi-Con Corporation  
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## **NEWS RELEASE**



### **DLCAP™ (Electric Double Layer Capacitors)**

#### **New products offering temperature range from -40°C to +85°C**

Nippon Chemi-Con has developed the industry's first medium to large size electric double layer capacitors (more than 100F capacitance) that offers category temperature range from -40 to +85°C, expanding in both high and low temperature range from the current series' -25 to +60°C.

Electric double layer capacitor is a clean energy device with long life. In response to the increasing demand for energy conservation and CO<sub>2</sub> reduction, electric double layer capacitor has been considered its use or has begun to be used in transport machines starting with cars, buses and trains, as well as construction machines.

Within these applications, electric double layer capacitors are used for energy regeneration, where rise in temperature due to heat generation becomes a problem during large current flow and frequent charge-discharge. These applications are also used at broad temperature range, and there have been strong demands for a storage device that guarantees a wide range of temperature.

Also being considered are the various secondary batteries including lithium-ion batteries, but these devices have characteristics including decrease in electric conductivity at low temperature and degradation of storage function at high temperature due to chemical reaction. Guaranteeing temperature range beyond -25 to +60°C therefore has been said to be difficult.

Nippon Chemi-Con has achieved in enhancing the capacitor's performance at high temperature by developing construction material and cell construction based on the analysis of electric double layer's degradation mechanism under high temperature.

At the same time, the capacitor's performance at low temperature was also improved through the development of construction material with less characteristic change at low temperature. The new product shows the same performance at -40°C as the existing product at -25°C.

The newly developed product guarantees 2,000 hours at temperature range from -40 to +85°C at rated 2.3V.

A product at rated 2.5V, which has the same voltage as the existing products, was also developed to guarantee 2000 hours at 70°C (product's temperature range is from -25 to +70°C).

Samples are available from summer 2009, and mass production is scheduled to begin in spring 2010. Nippon Chemi-Con has applied nine patents related to this development.

Product lineups are as follows.

#### **DLCAP™ 70°C product (-25 to +70°C)**

<Cylindrical type (wound structure)>

Product size:  $\phi 35 \times L65$  to  $\phi 50 \times L172$  mm

Rated capacitance range: 350 to 2300F

#### **DLCAP™ 85°C product (-40 to +85°C)**

<Cylindrical type (wound structure)>

Product size:  $\phi 35 \times L65$  to  $\phi 50 \times L172$  mm

Rated capacitance range: 300 to 2000F

<Prismatic type (laminated structure)>

Product size:  $\square 54 \times 30 \times L98$  mm,  $\square 54 \times 54 \times L128$  mm

Rated capacitance range: 700F, 2000F