

For immediate release

## **TAIYO YUDEN Announces the Commercial Production of a Cylinder Type Lithium Ion Capacitor with a 270F Capacitance**

*35% Capacitance Improvement Over Our Conventional Products for Long-Life Backup Power Supplies*

TOKYO, April 22, 2013 — TAIYO YUDEN CO., LTD. announced today the commercial release of a cylinder type lithium ion capacitors, the LIC2540R 3R8277, with a capacitance of 270F.

A lithium ion capacitor is an energy device characterized by a high volumetric energy density (Note 1) with long life. This new super high-end product has an improved capacitance of 35% over our conventional products. This has been accomplished through technical advancements and optimization of the Product's internal structure. An example of an application for this new capacitor is backup power supplies used for centralized meter reading systems and the main units of smart meters (Note 2), which together make up smart grids, and also as backup power supplies for distributed power systems that use renewable energy.

Production of this product will commence at TAIYO YUDEN's subsidiary company, TAIYO YUDEN ENERGY DEVICE CO., LTD. (Ueda, Nagano prefecture), from April 2013 onward. The main component of the cylinder type lithium ion capacitor will be assembled at a production rate of 100,000 units per month. The sample price is 5,000 yen per unit.

### **Technology Background**

Smart grids are next-generation power transmission and distribution networks in which power supply and power demand is required in real time. The smart grids perform various power control operations, such as the prevention of power failures and the adjustment of power transmission, as well as enabling the practical use of renewable energy. To enable this kind of power control and to ensure the interactivity of the power transmission and the distribution system, the use of equipment such as centralized meter reading systems and smart meters, which come equipped with a communication function, is needed.

Backup power supplies are required to have a larger capacitance and longer life as compared to conventional products. This is to support equipment like centralized meter reading systems and smart meters and is driven from the need for large currents to be supplied with wireless communication and to support real-time clock functions. In addition, equipment utilizing power supplies which have large capacity and long life requiring stable operation are driving increased demand for higher capacitance products such as TAIYO YUDEN's Cylinder Type Lithium Ion Capacitor with a 270F Capacitance. This is further evident in equipment, such as distributed power systems that utilize renewable energy, including solar or wind power, power supplies in regions without power transmission or distribution, or during power failures.

The cylinder type lithium ion capacitor has been increasingly adopted for applications with characteristics like high volumetric energy density, long life, and high-voltage.

The internal structure of the cylinder type lithium ion capacitor has been optimized at TAIYO YUDEN to increase the capacity of the electrical capacitance, and we have successfully improved this over our conventional products by 35%. In the future, at the same time as expanding our cylinder type line-up through miniaturization and increased capacity, we will focus our efforts in the field of energy devices by developing lithium ion capacitors which accurately fulfill the needs of the market.

#### ■ Applications

Backup power supplies and support centralized meter reading systems, smart meters, and distributed power systems that use renewable energy.

The characteristics of the cylinder type lithium ion capacitor released this time are as follows.

Part Number	Max. usable voltage	Min. voltage	Nominal capacitance	Internal resistance	Operating temperature range	Dimension / $\phi$ D (mm)	Dimension / L (mm)
LIC2540R 3R8277	3.8V	2.2V	270F	50m $\Omega$	-25 to 60°C	25.0 $\pm$ 0.5	40.0 $\pm$ 2.0

#### ■ Glossary

##### (Note 1) Volumetric energy density

This refers to the amount of electrical energy that can be stored per unit of volume. The electrical energy of a condenser or capacitor is proportional to the square of the capacitance and the operating voltage making the large capacity, high-voltage lithium ion capacitor possessive of high energy density.

##### (Note 2) Centralized meter reading systems and smart meters

This refers to the meters and meter reading systems that are required in the assembly of the next-generation power transmission and distribution networks which are called smart grids. Communication functions and real-time clock functions are installed to enable, among other things, a more detailed understanding of the status of how the electrical power is being used, and also enable the use of renewable energy.