

Ceramic components

PTC heating elements for electric vehicles

February 12, 2015

TDK Corporation presents new EPCOS PTC heating elements for electric vehicles. In contrast to the tried and test heating elements for conventional 12 V onboard power supplies, the new components are designed for the considerably higher voltage batteries in electric vehicles: The rated voltages of these heating elements cover the range from 200 V to 500 V, enabling surface temperatures of up to 250°C to be achieved. Depending on the design, these heating elements are suitable for safe operation at up to 1000 V.

Whereas cars with combustion engines can use waste heat for heating the passenger compartment, electric vehicles require electrical heating. PTC heating elements, which are connected in arrays and installed in heat exchangers, represent an ideal solution as they are self-regulating. The flow of current increases not only the temperature of these ceramic elements, but also their resistance, thereby limiting the current and establishing a stable equilibrium. Depending on customer requirements, the EPCOS PTC heating elements can be manufactured in a variety of geometries and with different electrical and thermal properties.

Glossary

- PTC: Positive Temperature Coefficient. In electroceramic components with PTC characteristics the electrical resistance increases as a function of the rising temperature, creating a self-regulating effect. These ceramic elements belong to the group of ceramic semiconductors.

Main applications

- Heating elements for electric vehicles

Main features and benefits

- Self-regulating

About TDK Corporation

TDK Corporation is a leading electronics company based in Tokyo, Japan. It was established in 1935 to commercialize ferrite, a key material in electronic and magnetic products. TDK's portfolio includes electronic components, modules and systems* marketed under the product brands TDK and EPCOS, power supplies, magnetic application products as well as energy devices, flash memory application devices, and others. TDK focuses on demanding markets in the areas of information and communication technology and consumer, automotive and industrial electronics. The company has a network of design and manufacturing locations and sales offices in Asia, Europe, and in North and South America. In fiscal 2014, TDK posted total sales of USD 9.6 billion and employed about 83,000 people worldwide.

* The product portfolio includes ceramic, aluminum electrolytic and film capacitors, ferrites, inductors, high-frequency components such as surface acoustic wave (SAW) filter products and modules, piezo and protection components, and sensors.

You can download this text and associated images from www.epcos.com/pressreleases.

Further information on the products can be obtained from Sales under www.epcos.com/inquiry.

Please forward reader inquiries to marketing.communications@epcos.com.

Contacts for regional media

Region	Contact		Phone	Mail
ASEAN	Mr. K. UNTERWEGER	EPCOS PTE LTD SINGAPORE	+65 6597 0618	klaus.unterweger@epcos.com
Greater China	Ms. S. SUEN	EPCOS LTD HONG KONG	+852 3669 8224	stella.suen@epcos.com
Europe	Mr. C. JEHLE	EPCOS Munich, GERMANY	+49 89 54020 2441	christoph.jehle@epcos.com
India	Mr. G. DALVI	EPCOS India Private Ltd. Mumbai, INDIA	+91 22 2575 0804	girish.dalvi@epcos.com
Japan	Mr. Y. OSUGA	TDK Corporation Tokyo, Japan	+813 6852 7102	pr@jp.tdk.com
North America	Ms. S. McSHEA	EPCOS Inc. Greenville, SC, USA	+1 864 232 4240	mcsheacp4@aol.com
South America	Mr. C. DALL'AGNOL	EPCOS do Brasil Ltda. Gravataí, BRAZIL	+55 51 3484 7158	candido.dallagnol@epcos.com