Inductors

Rugged power inductors for automotive electronics applications

- Wide temperature range from -55 °C to +150 °C
- Improved mechanical strength and high reliability
- Qualified to AEC-Q200

December 16, 2014

TDK Corporation has developed a new series of rugged power inductors for use in automotive electronics. The CLF6045NI-D wirewound SMD power inductors feature high efficiency and reliability over a very wide temperature range extending from -55 °C to +150 °C and offer rated inductance values from 1.0 µH to 470 µH (E6 series). Measuring in at 6.3 mm x 6.0 mm x 4.5 mm, the CLF6045NI-D types are available for rated currents of 0.28 A to 6.7 A and offer DC resistance values ranging from 1.1 mΩ to 1.30 Ω. Mass production will be launched in February 2015.

The new products are qualified to AEC-Q200, and thus fulfill the rigorous requirements of the automotive industry. Thanks to TDK's advanced materials technology the new components feature outstanding heat resistance. A new bonding process for the terminals enables a solderless structural design that features improved mechanical strength. The fully automated manufacturing process ensures the high reliability and quality of these components. As a result, the new inductors are suitable for use in applications in demanding automotive environments such as the power supply circuits of engine control modules (ECM) and ECUs for airbags, ABS, and headlights.

In addition to the 6 mm square form factor, TDK will subsequently introduce 5 mm, 7 mm, 10 mm and 12.5 mm square types, in order to offer a broad lineup of power inductors that is suitable for a wide range of applications.

Main applications

- Applications in rugged automotive environments such as the power supply circuits of engine control modules (ECM) and ECUs for airbags, ABS, and headlights

Main features and benefits

- New, highly heat resistant material for use over a wide temperature range from -55°C to +150°C
- Solderless structural design with improved mechanical strength and high reliability
- RoHS-compatible and suitable for lead-free soldering to JEDEC J-STD-020D

Key data

Series	Inductance [µH] at 100 kHz	DC resistance [Ω]	Rated current [A]	
			I DC 1	I DC 2
CLF6045NI-D	1.0 to 470	0.011 to 1.30	0.28 to 6.7	0.41 to 4.8

I DC 1: Based on inductance change ratio (30% below nominal value)
I DC 2: Based on temperature rise (temperature rise of 40 K)

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.global.tdk.com/news_center/press/201412161595.html.

Contacts for regional media

Region	Contact		Phone	Mail
Japan	Ms. Mari MIYAUCHI	TDK Corporation Tokyo, Japan	+813 6852-7102	pr@jp.tdk.com
ASEAN	Ms. Jiang MAN Mr. Shota KANZAKI	TDK Singapore (Pte) Ltd. Singapore	+65 6273 5022	asean.inquiry@sg.tdk.com
Greater China	Ms. Clover XU	TDK China Co., Ltd. Shanghai, China	+86 21 61962307	pr@cn.tdk.com
Europe	Mr. Frank TRAMPNAU	TDK Europe GmbH Duesseldorf, Germany	+49 211 9077 127	trampnau@eu.tdk.com
America	Ms. Sara M. LAMBETH	TDK Corporation of America Irving, TX, USA	+1 972-409-4519	sara.lambeth@us.tdk.com