Inductors

Lineup of rugged power inductors for automotive electronics applications expanded

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

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TDK Corporation has expanded its CLF-NI-D series of rugged power inductors for use in automotive electronics. The new CLF7045NI-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 7.4 mm x 7.0 mm x 4.5 mm, the CLF7045NI-D types are available for rated currents of 0.41 A to 8.5 A and offer DC resistance values ranging from 9 mΩ to 1.20 Ω. Mass production will be launched in August 2015.

The new products are qualified to AEC-Q200. 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 very well suited for applications in demanding automotive environments such as the power supply circuits of engine control modules (ECM) and ECUs for airbags, ABS, and headlights.

The new CLF7045NI-D types with a 7 mm form factor complement the recently introduced 6 mm square CLF6045NI-D types. In the future, TDK will further expand the CLF-NI-D series with 5 mm, 10 mm and 12.5 mm square types in order to offer a broad lineup of power inductors that are 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

Key data

Series	Dimensions [mm]	Inductance [µH] at 100 kHz	DC resistance [Ω]	Rated current [A]	
				I DC 1	I DC 2
CLF7045NI-D	7.4 x 7.0 x 4.5	1.0 to 470	0.009 to 1.200	0.41 to 8.5	0.46 to 6.5
CLF6045NI-D*	6.3 x 6.0 x 4.5	1.0 to 470	0.011 to 1.300	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)
* CLF-6045NI-D was already released in December 2014.

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 2015, TDK posted total sales of USD 9.0 billion and employed about 88,000 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.

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www.global.tdk.com/news_center/press/201505201822.htm.
Further information on the products can be found under
http://product.tdk.com/en/catalog/datasheets/inductor_automotive_power_clf7045ni-d_en.pdf.

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