

## Inductors

### High-performance multilayer power inductors

---

- High Q of up to 30 at 13.56 MHz
- Narrow inductance tolerance of just  $\pm 5$  percent

May 19, 2015

TDK Corporation has expanded its portfolio of multilayer power inductors with the new MLJ1608 high-performance series. Complementing the existing MLF1608 series of multilayer power inductors for signal lines, the MLJ1608 series was designed for use in near field communication (NFC) and power line applications especially in smartphones, tablets and NFC modules. The new multilayer power inductors feature a high Q of up to 30 at 13.56 MHz, a narrow inductance tolerance of just  $\pm 5$  percent, and excellent magnetic shielding characteristics. They thus meet all the requirements for coils used in NFC applications and are especially well-suited for the LC filtering circuit between the NFC control chip and antenna.

The current lineup covers inductance values from 160 nH to 560 nH. Thanks to their high rated currents ranging from 550 mA to 750 mA, they ensure operational stability even when handling the AC signal currents in the range of 100 mA to 300 mA that are encountered when the communication circuit is active. The compact IEC 1608 package (EIA 0603) of the MLJ1608 series has a footprint of 1.6 mm x 0.8 mm and a low-profile insertion height of 0.8 mm. Mass production of the MLJ1608 series began in April of this year.

The MLJ1608 series relies on a newly developed low-loss ferrite material from TDK which makes it possible to realize lower loss values with AC signals than achieved with similar sized wound coils. The superposition performance of the ferrite material has also been improved, resulting in characteristics that are on a par with those of conventional wound coils at the 300 mA peak current levels flowing in the NFC circuit.

An additional MLJ1005 series in an IEC 1005 (EIA 0402) package is currently under development and will add products suitable for low power NFC modules and applications requiring very small dimensions.

-----

#### Glossary

- NFC: Near field communication is a wireless standard that enables smartphones and other devices to communicate over very short distances of typically 10 cm or less.

#### Main applications

- NFC applications in smartphones, tablets, NFC modules and general electronic devices

## Main features and benefits

- High Q of up to 30 at 13.56 MHz
- Narrow inductance tolerance of just  $\pm 5$  percent
- Ferrite material for lower losses than achieved with similar sized wound coils
- Superposition characteristics on a par with those of wound coils

## Key data

Series	Dimensions [mm]	Inductance [nH] at 25 MHz	DC resistance [ $\Omega$ ]	Rated current [mA]	
				I DC 1	I DC 2
MLJ1608	1.6 x 0.8 x 0.8	160 to 560	0.12 to 0.40	550 to 750	400 to 700

I DC 1: Based on inductance change ratio (10% below nominal value)

I DC 2: Based on temperature rise (temperature rise of 25 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 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.

-----

You can download this text and associated images from [www.global.tdk.com/news\\_center/press/201505191818.htm](http://www.global.tdk.com/news_center/press/201505191818.htm).

Further information on the products can be found under [http://product.tdk.com/en/catalog/datasheets/inductor\\_commercial\\_standard\\_mlj1608\\_en.pdf](http://product.tdk.com/en/catalog/datasheets/inductor_commercial_standard_mlj1608_en.pdf)

-----

## Contacts for regional media

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