

# Inductors New advanced multilayer inductors from TDK meet evolving automotive PoC demands

- New inductor series delivers high impedance across a wide range of frequencies
- Significant reduction in impedance variation, compared to competing inductors, during current application for more efficient power transfer
- Compact form factor that saves valuable space

### August 30, 2022

TDK Corporation (TSE:6762) has announced the introduction of the new MLJ1608WG Series of multilayer inductors. These compact components are targeted at use in automotive Power over Coax (PoC) implementations. Mass production began in August 2022.

The MLJ1608WG Series inductors achieve a maximum impedance of 2500  $\Omega$ . They also retain impedance levels of 1000  $\Omega$  over a 300 MHz to 2 GHz frequency range. While the impedance characteristics of conventional multilayer inductors will vary considerably, depending on the current applied, and cannot secure sufficient impedance, the MLJ1608WG Series offers far less current variation. A high-rated current of 500 mA is supported despite these components having 1.6 x 0.8 x 0.8 mm (L x W x H) dimensions. This significantly reduces variation in impedance during current application. The components can be operated at temperatures of up to 125 °C with a current of 400 mA.

With the widespread uptake of advanced driver-assistance systems (ADAS), the performance of automotive cameras has advanced dramatically. Consequently, there are growing demands for higher-speed and larger-capacity interfaces. Automotive camera systems using LVDS transmission are adopting a PoC approach, which superimposes data and power supply onto a single coaxial cable.

PoC reduces the number of wire harnesses required by transmitting data and supplying power. This contributes to reducing the vehicle's weight and allowing space savings to be realized. Effective filtering is needed to separate data from the power supply in a PoC circuit. This will generally consist of 2 to 4 inductors. Inductors used in such filters must have high impedance for AC components from low right through to high frequencies. By achieving impedance values of 1000  $\Omega$  or higher over a broad range of frequencies, the new MLJ1608WG Series is highly optimized for meeting such requirements.

TDK will continue expanding the product portfolio, addressing the needs for higher-speed and larger-volume transmissions for an even wider variety of automotive applications.

### Glossary

• Power over Coax (PoC): Transmission technology whereby both data and power are simultaneously transmitted over the same coaxial cable

**Main applications** 

Automotive PoC



# Main features and benefits

- Achieves high impedance over broadband
- Significantly reduces variation of impedance during current application
- Compact low-profile form with high current

## Key data

Туре	Inductance [µH]	DC resistance [Ω] typ.	DC resistance [Ω] max.	Rated current [mA] max. @105 °C	Rated current [mA]max. @ 125 °C
MLJ1608WGCR56NTD25	0.56 ± 30%	0.45	0.70	500	400

# **About TDK Corporation**

TDK Corporation is a world leader in electronic solutions for the smart society based in Tokyo, Japan. Built on a foundation of material sciences mastery, TDK welcomes societal transformation by resolutely remaining at the forefront of technological evolution and deliberately "Attracting Tomorrow." It was established in 1935 to commercialize ferrite, a key material in electronic and magnetic products. TDK's comprehensive, innovation-driven portfolio features passive components such as ceramic, aluminum electrolytic and film capacitors, as well as magnetics, high-frequency, and piezo and protection devices. The product spectrum also includes sensors and sensor systems such as temperature and pressure, magnetic, and MEMS sensors. In addition, TDK provides power supplies and energy devices, magnetic heads and more. These products are marketed under the product brands TDK, EPCOS, InvenSense, Micronas, Tronics and TDK-Lambda. TDK focuses on demanding markets in automotive, industrial and consumer electronics, and information and communication technology. The company has a network of design and manufacturing locations and sales offices in Asia, Europe, and in North and South America. In fiscal 2022, TDK posted total sales of USD 15.6 billion and employed about 117,000 people worldwide.

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