

Inductors

TDK offers a wide range of inductors for Industrial Single Pair Ethernet (SPE)

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TDK Corporation (TSE:6762) has developed a series of inductors for Industrial Single Pair Ethernet (SPE) based on the IEEE 802.3cg standard for 10BASE-T1L. The suppression of asymmetrical interference is particularly important to achieve interference-free data traffic. The new RCM70CGI-471 common-mode choke, which has an inductance value of 470 μ H and is designed for a maximum current of 700 mA at a voltage of 80 V, is suitable for this purpose.

In certain applications, galvanic isolation between PHY and connector is required. This task is solved by isolation inductors of the ICI70CGI series with a transformation ratio of 1:1. They are available in versions with inductance values of 1.0 mH and 2.2 mH. The isolation voltage is 2250V DC.

With Power over Data Line (PoDL) it is possible to connect actuators and sensors with just one pair of wires and realize both data and power transmission via this line. Special differential-mode chokes are required to suppress interference in these systems. The new PID* series are available in different versions and cover all six power classes (10 to 15) according to IEEE 802.3cg. The spectrum of saturation currents ranges from 360 mA to 2100 mA. Also new is the type PIS150H-471M, which is designed as a single choke for noise suppression and smoothing of currents. Its maximum saturation current is 2300 mA.

TDK is a SPE Industrial Partner Network member and the first supplier to offer all the inductors needed to implement Industrial SPE with and without power transmission using PoDL. All listed types are RoHS compliant and designed for a temperature range from -40 °C to +125 °C.

Main application areas

- Industrial Single Pair Ethernet (SPE) based on IEEE 802.3cg standard for 10BASE-T1L
- Power over Data Line (PoDL) of power classes 10 to 15 according to IEEE 802.3cg as well as A, C and 3 of the Ethernet APL

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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