

## Inductors

### **Miniaturized transponder coil for automotive applications**

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August 20, 2013

TDK Corporation has expanded its TPL series of transponder coils with a new miniature version that is especially designed for use as an antenna coil in tire pressure monitoring systems (TPMS) for vehicles. Measuring in at just 7.85 mm x 2.70 mm x 2.70 mm the new TDK TPL802727 transponder coil offers the same high level of performance as existing components in the TPL series. The TPL802727 offers rated inductance values of 4.5 mH, 7.2 mH and 18.52 mH and typical Q factors of between 43 and 52. Mass production begins in August 2013.

Thanks to TDK's advanced structural design and materials technologies the ferrite coil could be made smaller while still achieving high impedance. As a result, the new TPL802727 series offers sensitivity characteristics on a par with the previous product and enables a wide range of inductance requirements to be met. The laser bonding of the coil wiring to the external electrodes increases the component's reliability in a high temperature environment and makes the coil extremely resistant to shock, vibrations, and drop impact. Moreover, the intelligent design of its case enables the new series to be mounted in highly automated processes.

The TPL802727 series is qualified according to AEC-Q200, making it suitable for rugged automotive electronics applications. In addition to TPMS, the new transponder coil can be used as an antenna coil for passive keyless entry (PKE) systems and immobilizers. With the new series TDK now offers an even more versatile line-up of TDK and EPCOS transponder coils for demanding automotive applications.

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#### **Main applications**

- Tire pressure monitoring systems (TPMS), passive keyless entry (PKE) systems and immobilizers

#### **Main features and benefits**

- Miniature package contributes to space savings
- Qualified to AEC-Q200 for automotive applications
- Suitable for highly automated mounting processes

## Key data

Type	Rated inductance at 125 kHz [mH]	Q at 125 kHz (typ.)	DC resistance [Ω] (typ.)
TPL802727-193H	18.52 ±3%	52	195
TPL802727-722H	7.2 ±3%	48	85
TPL802727-452H	4.5 ±3%	43	63

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## 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 2013, TDK posted total sales of USD 9.1 billion and employed about 80,000 people worldwide.

## About TDK-EPC Corporation

TDK-EPC Corporation, a TDK group company, is the manufacturer of TDK's electronic components, modules and systems and is headquartered in Tokyo, Japan. TDK-EPC was founded on October 1, 2009, from the combination of the electronic components business of TDK and the EPCOS Group. 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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