Ferrites

EPCOS ferrite disk selected by Linear Technology for wireless power receiver reference design

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TDK Corporation presents a new EPCOS ferrite disk that has been selected by Linear Technology Corporation for a wireless power receiver reference design with its LTC4120-based receiver. The power receiver is rated for 400 mA and simplifies wireless battery charging across a 12 mm air gap. The ferrite disk (B67410A0223X195), which is based on the high-performance EPCOS N95 ferrite material, features low losses over a wide temperature range and is extremely thin with a thickness of just 0.6 mm.

The EPCOS ferrite disk is a key component in the reference design supporting the LTC4120-based receiver. For this wireless power charging application, Linear Technology is using the ferrite like a lens to focus the magnetic flux into the receiver coil, instead of using it as a core. As a result the EPCOS ferrite disk acts as a flux collector so that the flux goes through the coil instead of out into space.

Based on the diameter of the receiver coil and the receive power design target, engineers at Linear Technology selected the new EPCOS ferrite disk, which offered the required diameter and power loss. “We needed certain characteristics from the ferrite material in order to collect the flux properly,” explains Brian Shaffer, Applications Manager at Linear Technology. “The EPCOS ferrite material makes a big difference. It is a unique application that promises to become prevalent now that wireless power technology is taking off.” Linear Technology has worked with TDK for many years. “Our working relationship is excellent,” said Shaffer. “We use TDK and EPCOS components in many of our products, and we appreciate the quality of the parts.”

The LTC4120 combines a wireless power receiver with a constant current and voltage battery charger. The wireless power module functions as the receive circuit component in a complete wireless power transmission system composed of Tx and Rx circuitry and coils. The wireless power module based on Linear Technology’s LTC4120 can be used for handheld devices, industrial and other sensors and applications, portable medical devices, and other small devices.

“We developed this ferrite disk for Linear Technology’s reference design,” said Chris Spadafora, Marketing Manager for EPCOS Ferrite Products, “and it is now available throughout the industry.” TDK offers a wide range of ferrite products in many shapes and sizes, including disks and plates.

Main applications

- Handheld instruments, industrial and other sensors and devices, portable medical devices, and other small devices

Main features and benefits

- Based on high-performance EPCOS N95 ferrite material
- Low losses over a wide temperature range
- Extremely thin with a thickness of just 0.6 mm

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.

* 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.

About Linear Technology Corporation

Linear Technology Corporation, a member of the S&P 500, headquartered in Milpitas, California, USA, has been designing, manufacturing and marketing a broad line of high performance analog integrated circuits for major companies worldwide for over three decades. The company's products provide an essential bridge between the analog world and the digital electronics in communications, networking, industrial, automotive, computer, medical, instrumentation, consumer, and military and aerospace systems. Linear Technology produces power management, data conversion, signal conditioning, RF and interface ICs, µModule® subsystems, and wireless sensor network products. For more information, visit www.linear.com.

You can download this text and associated images from www.epcos.com/pressreleases.

Further information on the EPCOS B67410A0223X195 ferrite disk can be found at www.epcos.com/ferrites_blocks_disks.

Information about the Linear Technology LTC4120 is available at www.linear.com/product/LTC4120.

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