

TDK cooperates with Boréas on smart haptic solutions

Touch response solutions

May 14, 2019 -- TDK Corporation (TSE:6762) announces that its subsidiary TDK Electronics has signed a cooperation agreement with Boréas Technologies Inc., developer of ultra-low-power haptic technologies, in order to accelerate the adoption of piezo haptic solutions in a broad range of applications. Under the agreement, the partners will jointly design and market advanced touch response solutions using TDK's PowerHap™ and PiezoHapt™ families of piezo actuators for haptic feedback combined with Boréas' piezo haptic driver technology.

In particular, TDK and Boréas will develop demonstrators for haptic effects and drivers for high-definition piezo haptic systems and market these solutions on a global scale. This will enable customers to implement advanced haptic solutions with the world's highest performance actuators in a broad spectrum of applications that includes smartphones and tablets, automotive displays and controls, wearables, gaming consoles, industrial equipment, medical devices, and many more.

One of the most important areas will be mobile applications. Thus far, piezo haptic solutions are not widespread in these applications because of the high power consumption and large size of piezo drivers. Now, solutions based on TDK and Boréas technologies are removing the barriers for the adoption of advanced piezo haptic technology and the creation of the next generation of user interfaces.

"Our partnership with Boréas Technologies is a further step to expand our market reach to customers, who are looking for technological superior haptic solutions," explains Dr. Georg Kuegerl, CTO of the TDK Piezo & Protection Devices Business Group. "In particular, they will benefit from Boréas' expert design of drivers for our wide range of piezo actuators."

"Cooperating with TDK enables us to access their extensive sales and marketing network to accelerate the adoption of piezo haptics globally," says Simon Chaput, Boréas Technologies' CEO. "Furthermore, this cooperation will enable faster time to market for our customers by reducing the amount of engineering required to implement a piezo haptic solution using Boréas' driver ICs with TDK's piezo actuators."

Boréas Technologies has developed the BOS1901 using its patented CapDrive™ technology. The miniature power-efficient piezo driver IC also features advanced sensing functionality and thus is a perfect fit for PowerHap actuators with an operating voltage of up to 60 V. This driver is now also available in a TDK evaluation kit that can be used by designers to develop high-performance touch response solutions. As a next step, Boréas will develop the first low-power piezo driver IC for the larger members of the PowerHap family with maximum drive voltages of 120 V. With the two driver ICs customers will be able to create solutions drawing from the entire PowerHap portfolio.

TDK's PowerHap piezo actuators deliver unrivalled performance in terms of acceleration, force and response time and thus offer an unprecedented quality of haptic feedback. The PowerHap product spectrum includes new miniaturized types with dimensions of as small as 9 x 3.75 x 1.4 mm (0904H014V060) and a maximum operating voltage of 60 V. At the other end of the PowerHap product spectrum, a new actuator (6005H090V120) is now in development with dimensions of 60 x 5.0 x 9.0 mm and a maximum operating voltage of 120 V. PiezoHapt™ actuators feature a very short response time and a low drive voltage of 12 V or 24 V, depending on the type. They have a unimorph design consisting of a multilayer piezo element bonded to one side of a vibration plate. With a thickness of just 0.35 mm the new haptic actuator is one of the world's thinnest haptic devices.

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 comprehensive 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 the areas of information and communication technology and automotive, industrial and consumer 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 2019, TDK posted total sales of USD 12.5 billion and employed about 105,000

people worldwide.

About TDK Electronics

TDK Electronics (formerly EPCOS) develops, manufactures and markets electronic components and systems under the product brands of TDK and EPCOS, focusing on fast-growing leading-edge technology markets, which include automotive electronics, industrial electronics and consumer electronics as well as information and communications technology. Thanks to the 24,000 employees at some 20 design and production locations and an extensive sales network, the company is globally positioned – beyond the provision of standard products – to work closely with customers and create the right solutions for them.

About Boréas Technologies

Boréas Technologies Inc. is a fabless semiconductor company commercializing product-differentiating integrated circuits for haptic applications in consumer, industrial and automotive markets. With origins in research conducted at Harvard University, Boréas was founded in 2016 in Bromont, Québec, Canada. Its proprietary piezoelectric actuator driver technology platform, CapDrive™, enables the rapid design of low-power HD haptic feedback in wearables, smartphones, game controllers and other devices.

You can download this text and associated images from www.tdk-electronics.tdk.com/en/190514-2.

Please forward reader inquiries to info@tdk-electronics.tdk.com.

TDK Electronics media contact

Dr. Heinz Kahlert

Phone: +49-89-54020-2243

Email: info@tdk-electronics.tdk.com

Boréas Technologies media contact

Nicolas Duchesne-Laforest

Phone: +1 450-534-8000 x1529

Email: nduchesnelaforest@boreas.ca

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