TDK teams with Immersion on haptics

Touch response solutions

April 24, 2019 -- TDK Corporation (TSE:6762) announces that its subsidiary TDK Electronics has signed a co-marketing agreement with Immersion Corporation (NASDAQ:IMMR), the world's leading developer and licensor of touch feedback technology, for the design and marketing of cutting-edge touch response solutions that utilize TDK PowerHap™ piezo actuators with haptic feedback. Under the agreement Immersion will certify TDK's actuators for use with its software products and include them in reference designs. This will enable Immersion 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, consumer electronics devices, ATMs and vending machines, gaming consoles, industrial equipment and medical devices and more.

"Our partnership with Immersion enables us to expand our market reach to customers, who are looking for the most innovative haptic solutions for their applications," explains Dr. Georg Kuegerl, CTO of the TDK Piezo & Protection Devices Business Group. "They will benefit from Immersion's expert integration support along the entire range of touch technology, from actuator selection to design of the haptic experience."

"Teaming with TDK enables us to offer a significantly broader range of technologically superior haptic solutions using powerful and compact actuators," says Ramzi Haidamus, Immersion's CEO. "As haptics continues to become pervasive in numerous markets, working with TDK helps meet that demand and ensures OEMs can easily incorporate the power of touch into user interfaces."

TDK's PowerHap piezo actuators with haptic feedback 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 a new miniaturized type (0904H014V060) which has dimensions of just 9 x 3.75 x 1.4 mm. At the maximum operating voltage of 60 V the new actuator can achieve an acceleration of 6.4 *g* (pp) under a load of 100 grams. This enables a maximum displacement of 18 µm or a high force of up to 3 N to be achieved. 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. At the maximum operating voltage of 120 V this powerful actuator can achieve an acceleration of 8 *g* (pp) under a load of 1000 grams.

TDK also has an agreement with Immersion for its ultra-thin PiezoHapt™ actuators, which feature a very short response time of just 2 ms. PiezoHapt has a unimorph design consisting of a multilayer piezo element bonded to one side of a vibration plate. With a thickness of a mere 0.35 mm the new haptic actuator is much thinner than conventional eccentric rotary motors and linear resonant actuators, and one of the world's thinnest haptic devices.

Thanks to their fast rise times, PowerHap and PiezoHapt can also save power compared to conventional solutions and are ideal components for providing haptic feedback to user actions in the displays of smartphones and tablets. ---

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 2018, TDK posted total sales of USD 12 billion and employed about 103,000 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 Immersion

Immersion Corporation (NASDAQ:IMMR) is the leading innovator of touch feedback technology, also known as haptics. The company provides technology solutions for creating immersive and realistic experiences that enhance digital interactions by engaging users' sense of touch. With more than 3500 issued or pending patents, Immersion's technology has been adopted in more than 3 billion digital devices, and provides haptics in mobile, automotive, gaming, medical and consumer electronics products. Immersion is headquartered in San Jose, California with offices worldwide.

You can download this text and associated images from www.tdk-electronics.tdk.com/en/190424.

Further information on the products can be found under www.tdk-electronics.tdk.com/en/powerhap and https://product.tdk.com/info/en/products/sw_piezo/haptic/piezohapt/index.html.

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