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FOR IMMEDIATE RELEASE

CTS Introduces Ultra Low Voltage and Miniaturized Multilayer Piezoelectric Actuators Design, Engineering, and Manufacturing Services

Lisle, IL – CTS Corporation (NYSE: CTS) has recently expanded the piezoelectric product line to include miniature multilayer actuators which can operate in voltages as low as 45 V. The applications for this product include medical implants, micro-positioning and consumer electronics devices.

Expanding the Multilayer Range for Low Voltage and Small Size

CTS multilayer piezoelectric actuators are available in a wide range of dimensions and voltage ratings. Currently, the smallest available standard product, NAC2001, is a 2 mm x 2 mm x 2 mm element with a voltage rating of 60 V. We are excited to announce our new capabilities to manufacture components smaller than 2 mm, and capable of operating at lower voltages.

Mr. Charles Mangeot, CTS Denmark senior R&D Engineer, states “There is a push in the industry towards smaller piezoelectric actuators due to high density packaging resulting in smaller space available for actuation mechanism. But miniaturization introduces constraints on the electrical drive and safety, so low voltage operation is often a challenge. We have produced small actuators in the past, but through a concentrated effort on design and process improvements, CTS is now in a position to manufacture such products more effectively and offer them to a wide range of applications and customers. We strive to push the boundaries of our product offering, enabling new applications for piezoelectric multilayer actuators.”

Specifications

Several new products have already been developed successfully. Below are some examples of plate actuators using CTS’ high strain NCE51F material with a 45 V rating. We have the capability to create custom products for specific applications.

Section (Width*Length)	Height	Capacitance	Free displacement	Estimated blocking force
1.00 mm x 1.00 mm	2.00 mm	40 nF	1.8 µm	23 N
1.65 mm x 1.65 mm	2.00 mm	140 nF	2.4 µm	85 N
2.00 mm x 2.00 mm	2.00 mm	200 nF	2.6 µm	134 N

Intermediate, smaller or larger dimensions are available on request. Contact us for customized products.



Applications in Implantable Medical Devices, Pumps, and Micro-positioning

Medical applications, including medical devices and pumps, require high precision, low noise, and minimal space, especially for in-vivo applications (e.g. implants). With the newly developed ultra-low voltage and miniaturized piezoelectric actuator product line, CTS expands the range of piezoelectric actuators with these capabilities. CTS now offers a complete range of products for customers in the field of medical implantable devices and for micro-positioning.

Miniaturized actuators can find applications in hearing aids, miniature valves, and pumps for drug delivery. Such actuators can also be used in miniaturized stick-slip motors where compactness and reliability are important. Applications also include sample positioning in analysis machines or focusing optics in portable devices.

Customization

The actuators can be stacked to reach higher displacement. Similar to other CTS multilayer actuators, they can be fitted with standard or customer-specific wires with length and orientation designed for easy integration into the final application. Add-ons are also available, such as specific interface parts, chamfering, protection with tubing, connectors, or extra inspection.

CTS Multilayer Capabilities

CTS is a leading developer and manufacturer of high-performance piezoelectric materials for a wide range of applications, including medical, defense, inkjet, industrial, oil and gas, and automotive markets. Through the tape-cast method, these piezoelectric materials are processed into multilayer actuators containing a multitude of thin active layers allowing high-performance operation at low voltage. Multilayer products are available in a comprehensive range of shapes and dimensions, both as standard products with short lead-time and customer-specific designs with a high degree of customization. CTS offers a market-leading level of possibilities for product design, engineering, manufacturing, and customization services of multilayer products according to specific customer requirements. With sales locations in Europe, North America, and Asia, CTS is uniquely positioned to service a wide range of industries and secure high quality, consistent products to customers worldwide.

More Information

For further information about low voltage actuators or any of our other products, please visit the CTS corporation form page at <https://www.ctscorp.com/contact>.

About CTS

CTS (NYSE: CTS) is a leading designer and manufacturer of products that Sense, Connect, and Move. The company manufactures sensors, actuators, and electronic components in North America, Europe, and Asia. CTS provides solutions to OEMs in the aerospace, communications, defense, industrial, information technology, medical, and transportation markets.

For more information on CTS Corporation, please visit www.ctscorp.com.



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