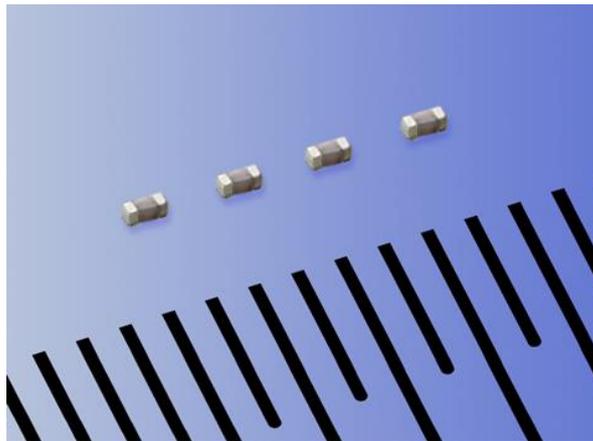


Press Information

KYOCERA Develops Some of World's Smallest Multilayer Ceramic Capacitors for Mobile Devices

Ultra-miniature, high-Q devices offer new potential for creating smaller, more functional smartphones, wearables and related equipment

Kyoto/London – December 7th, 2017. Kyocera Corporation (President: Hideo Tanimoto) today announced that it has developed new multilayer ceramic capacitors (MLCCs) for mobile device applications in a 008004 case size, among the world's smallest*¹. Measuring just 0.25 x 0.125 x 0.125 mm, Kyocera's new CM01 Series MLCCs reduce space requirements by 60 % in surface area and 75 % in total volume as compared to conventional products. The new MLCCs are now available worldwide.



**Kyocera's new 008004 MLCCs
(scale shows 0.25 mm increments)**

Product Overview

Product name	CM01 Series MLCC
Size	0.25 × 0.125 × 0.125 mm
Characteristics	C0G (EIA)
Capacitance	0.2 to 22 pF
Tolerance	0.2 to 9.9 pF: B (± 0.1 pF) C (± 0.25 pF) 10 to 22 pF: J (± 5 %)
Rated voltage	25 Vdc: 0.2 to 9.9 pF 16 Vdc: 10 to 22 pF
Production facility	Kagoshima Kokubu Plant



Background

The trend toward smaller, more highly functional telecommunications equipment has increased component requirements within smartphones, wearables and related devices — creating particular demand for ultra-miniature MLCCs to facilitate greater circuit densities. In response to this demand, Kyocera's new CM01 Series' ultra-compact size will help circuit designers create more capable and functional products. The new MLCCs feature tight tolerances on key specifications, with an industry-leading*² Q-value*³ which is 20 % higher than conventional MLCCs*⁴ to meet the rising demand for highly efficient power amplifier modules. Kyocera will continue to develop innovative products that contribute to an expanding IoT (Internet of Things) society.

Main Features

1. Ultra compact size reduces space requirements

Continuous improvements in Kyocera's proprietary electrode printing and forming technologies enable the company to reduce these components' space requirement by 60 % in mounting area and 75 % in total volume, as compared to the 01005 case size. These ultra-compact MLCCs can thus contribute greatly to the goal of delivering equivalent performance from smaller devices; or, delivering greater performance and functionality without increasing the circuit (or device) size.

2. Tight tolerance with 20 % increase in Q-value compared to conventional MLCCs

With demand for ever-greater telecommunication bandwidth and data transfer speeds, improved power efficiency has become crucial. Power amplifier modules require components with tight tolerances on key specifications, such as electrode dimensions, to optimize power use within matching circuits. Kyocera's new MLCCs accomplish this while reducing energy consumption in ultra-high-speed and high-capacity devices.

*1: Among the world's smallest for 008004 size MLCCs. Based on research by Kyocera (as of November 2017).

*2: Based on research by Kyocera (as of November 2017).

*3: Q-value: An index to show the degree of energy loss inside a capacitor. A higher value indicates lower energy loss.

*4: When compared to Kyocera's conventional MLCCs in a 01005 case size.



For more information on KYOCERA: www.kyocera.co.uk

About KYOCERA

Headquartered in Kyoto, Japan, KYOCERA Corporation is one of the world's leading manufacturers of fine ceramic components for the technology industry. The strategically important divisions in the KYOCERA Group, which is comprised of 231 subsidiaries (as of March 31, 2017), are information and communications technologies, products which increase quality of life, and environmentally friendly products. The technology group is also one of the oldest producers of solar energy systems worldwide, with more than 40 years of experience in the industry.

The company is ranked #522 on Forbes magazine's 2017 "Global 2000" listing of the world's largest publicly traded companies. With a global workforce of over 70,000 employees, KYOCERA posted net sales of approximately €11.86 billion in fiscal year 2016/2017. The products marketed by the company in Europe include printers, digital copying systems, microelectronic components, and fine ceramic products. The KYOCERA Group has two independent companies in the United Kingdom: KYOCERA Fineceramics Ltd. and KYOCERA Document Solutions.

The company also takes an active interest in cultural affairs. The Kyoto Prize, a prominent international award, is presented each year by the Inamori Foundation — established by KYOCERA founder Dr. Kazuo Inamori — to individuals and groups worldwide who have contributed significantly to the scientific, cultural, and spiritual betterment of humankind (converted at approximately €400,000 per prize category).

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