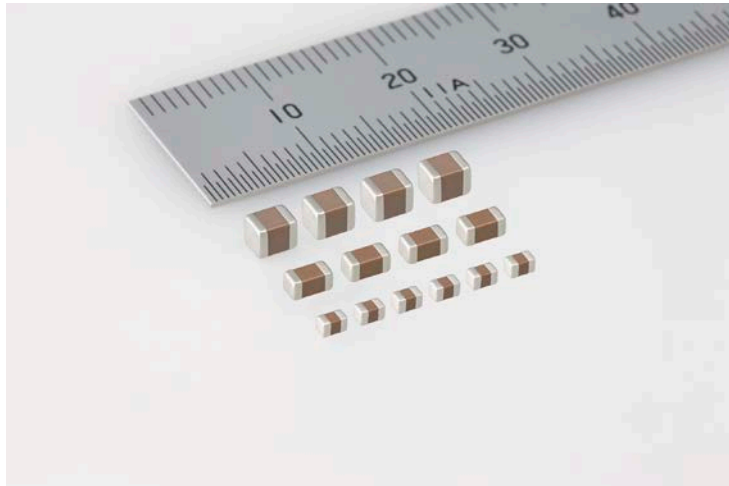


For Immediate Release

**TAIYO YUDEN Starts the Commercialization of Multilayer Ceramic Capacitors that Utilize Resin External Electrodes**

*AEC-Q200 Qualified Products for Automobiles and Industrial Equipment*



TOKYO, January 29, 2014 — TAIYO YUDEN CO., LTD. today announced the commercialization of resin external electrode multilayer ceramic capacitors “HMJ212BB7104KGHT” (2.0 x 1.25 x 1.25mm), “HMJ316BB7105KLHT” (3.2 x 1.6 x 1.6mm), and “HMJ325AB7225KMHT” (3.2 x 2.5 x 2.5mm) that use a conductive resin for the external electrodes of the multilayer ceramic capacitor.

These products are used for smoothing the output in power supply circuits in the battery line of automobiles and industrial equipment. These applications require high reliability and the components have undergone evaluation tests corresponding to AEC-Q200, a reliability testing standard for automotive electronic parts.

The breakage of parts caused by bending of the substrate can be prevented by the use of resin external electrodes that have a high level of elasticity.

Production of these multilayer ceramic capacitors will commence at KOREA KYONG NAM TAIYO YUDEN CO., LTD. in Sachon-si, Gyeongsangnam-do from January 2014 onward at a production rate of 10 million units per month.

The sample price is 12 yen per unit for “HMJ212BB7104KGHT” and 15 yen per unit for both “HMJ316BB7105KLHT” and “HMJ325AB7225KMHT”.

### **Technology Background**

In the power supply circuits used in the battery line of automobiles and industrial equipment that are frequently exposed to vibrations and impacts, the substrate may bend when an external force is applied, and cracks may appear in the mounted parts. In addition, for automobiles that are exposed to an environment with large temperature variations, which causes a repeated expansion and shrinkage of the substrate, the solder that joins together the parts and the substrate may peel off, resulting in what is known as solder cracking.

As a solution to this problem, we have started the commercialization of resin external electrode multilayer ceramic capacitors that make use of a conductive resin having elasticity in a part of the external electrodes of the multilayer ceramic capacitor. When bending occurs, the stress exerted on the

part is alleviated by the resin external electrodes. This prevents the breakage of the part. Since the conductive resin itself has the elasticity, it absorbs the difference between the expansion rate of the substrate and the expansion rate of the part, thus preventing the occurrence of solder cracking.

To address the market needs, TAIYO YUDEN will continue to promote a further reduction in size, and sequentially expand its lineup of high-reliability category products using its core technologies and innovations such as the use of resin external electrodes.

#### ■ Application

For smoothing the output in power supply circuits in equipment that requires high reliability, such as the battery line of automobiles and industrial equipment.

[Example of characteristics of resin external electrode multilayer ceramic capacitors]

Part number	Capacitance [μF]	Capacitance tolerance	Temperature characteristics	Rated voltage [V]	Length (L) [mm]	Width (W) [mm]	Thickness (T) [mm]
HMJ212BB7104KGHT	0.1	±10%	X7R	100	2.0 + 0.2/-0	1.25 + 0.2/-0	1.25 + 0.2/-0
HMJ316BB7105KLHT	1	±10%	X7R	100	3.2 ± 0.3	1.6 ± 0.3	1.6 ± 0.3
HMJ325AB7225KMHT	2.2	±10%	X7R	100	3.2 ± 0.3	2.5 ± 0.3	2.5 ± 0.3

Total 22 part numbers (including above).

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[Inquiries about AEC-Q200 qualified products]

Note: The products are tested based on the test conditions and methods defined in AEC-Q200. Please consult with TAIYO YUDEN for the details of the product specification and AEC-Q200 test results, etc., and please review and approve TAIYO YUDEN's product specification before ordering.

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