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Taiyo Yuden: Introduces a New High-Q Product in the EIA0201 Multilayer Chip Inductor for High Frequency, Opening the Way to a Next-Generation Cell Phone That Redefines the Cell Phone

Meets the Need for Compact Digital Equipment, and Upgrades Production Capacity for Existing Products

Taiyo Yuden's HK series, which boasts a share of around 50% of the world market for high-frequency multilayer chip inductors, is now adding a new product, the HKQ0603 series (Size: 0.6 x 0.3 x 0.3mm or EIA0201). This series achieves a Q value about 30% higher than the previous product's value. At present, the product lineup runs from 1nH to 10nH, and the company plans to expand that still more in the future. Mass production of these new items in the multilayer chip inductor HKQ series EIA0201 size is set to commence in March at the Tamamura Plant in Gunma prefecture. Sample price will be 5 yen per piece. Taiyo Yuden's Multilayer Chip Inductor for High Frequency HK series are used as choke coils in such high frequency applications as cell phones, power amplifiers, and VCOs (voltage control oscillators). This series has always maintained a lead over competitors in shrinking the size of high-frequency inductors. In particular, the 0201 size boasts the world's highest inductance. It has achieved an inductance value of 100nH, high enough to allow use of the 0201 size chip inductor in virtually all units that have been conventionally utilizing the EIA0402 size (1.0 x 0.5 x 0.5mm). This advancement of the 0201 size's commercial characteristics, facilitating its substitution for the 0402 size, will serve to promote further miniaturization of parts in progressively more compact digital equipment. In response to these favorable market conditions, Taiyo Yuden plans to boost production capacity for the HK0603 series by about 50%.

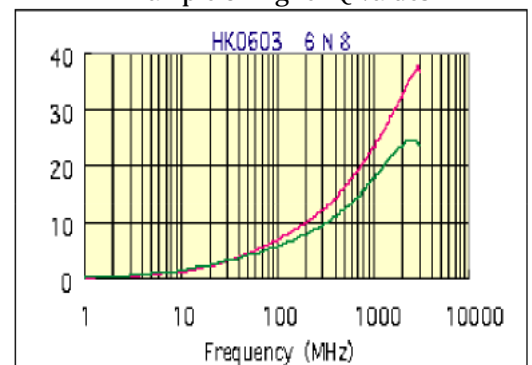
Taiyo Yuden's high-frequency chip inductor is a product used mainly for RF circuits in cell phones. In this field, the product has continually led the industry in miniaturization, and holds a share of around 50% of the world market.

Cell phones are currently in a new stage of evolution, with their current capabilities in voice, data transmission, camera shooting, and Internet browsing soon to be joined by such new features as music and video download services, television reception, GPS, and electronic money account functions. Moreover, these functions are being improved at progressively higher speeds.

In cell phones, the core communication function is controlled by the RF (Radio Frequency) block, a part of the cell phone that has been constricted into a steadily smaller space. As cell phone functions have multiplied, the RF block has had to give way to space for the base band circuit needed for the power supply and for controls of the various functions. As a result, RF circuit demands have moved toward smaller parts, toward development of modules for its circuits, and then toward miniaturization of the modules themselves, to trim the space requirements as much as possible. Therefore, components used in RF circuits also need to be more compact but maintain their high frequency capabilities.

In order to achieve further miniaturization of the high-frequency multilayer chip inductor, Taiyo Yuden made further improvements to the structure of the HK series, to obtain the new

Example of higher Q values



— HKQ06036N8S-T

— HK06036N8(previous)

HKQ series line-up. Taiyo Yuden successfully obtained a Q value for the HKQ series that is 30% higher than the previous HK series. From its position of dominance in the high-frequency multilayer chip inductor market, Taiyo Yuden's introduction of the High-Q product in the 0201 size will promote downsizing from the 0402 size to the 0201 size, and will open the way for further functional upgrades and compact sizing of cell phones.

The HKQ series 0201 size line-up is as shown below.

Part Number	Inductance	Tolerance	Q value	DC resistance (Ω)		Rated current (mA)	Thickness (mm)
	100MHz		100MHz	Max.	Typ.		
HKQ06031N0S-T	1nH	± 0.3 nH	4	0.10	0.04	250	0.30 \pm 0.03
HKQ06031N2S-T	1.2nH	± 0.3 nH	4	0.13	0.08	250	
HKQ06031N5S-T	1.5nH	± 0.3 nH	4	0.11	0.07	250	
HKQ06031N8S-T	1.8nH	± 0.3 nH	4	0.13	0.08	250	
HKQ06032N2S-T	2.2nH	± 0.3 nH	4	0.19	0.12	200	
HKQ06031N7S-T	2.7nH	± 0.3 nH	5	0.18	0.11	200	
HKQ06033N3S-T	3.3nH	± 0.3 nH	5	0.27	0.17	200	
HKQ06033N9S-T	3.9nH	± 0.3 nH	5	0.44	0.27	150	
HKQ06034N7S-T	4.7nH	± 0.3 nH	5	0.35	0.22	150	
HKQ06035N6S-T	5.6nH	± 0.3 nH	5	0.55	0.35	150	
HKQ06036N8S-T	6.8nH	$\pm 5\%$	5	0.61	0.38	150	
HKQ06038N2S-T	8.2nH	$\pm 5\%$	5	0.72	0.45	150	
HKQ060310NS-T	10nH	$\pm 5\%$	5	0.83	0.52	150	

Note: The specifications in the table are tentative, and some of the values may be subject to change.