

News Release

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Taiyo Yuden: Industry's Smallest Wire Wound Inductor for LCD and Plasma TVs Reaches the Market

-- Expands NR Series Lineup, Achieves High-Current Capability of 3A in 6mm Square Case Size --



Taiyo Yuden announces marketing of the new NR6045 (6.0 x 6.0 x 4.5mm, height is maximum value), the industry's smallest wire-wound inductor used for LCD TVs, plasma TVs, and other flat panel displays (FPDs).

In order to meet the demand for reduction of the mounting area of FPD's print circuit board by downsizing choke coils, this product achieves a 6mm square case size with a rated current of 3.0A and Rdc of 47mΩ (at the inductance of 10μH).

Mass production is scheduled to begin in February 2007 at the Taiyo Yuden (Philippines), one of the company's overseas production sites. Together with the NR6012, made for LCD displays for notebook PCs, the company plans to establish production capacity of 20 million units per month. The sample price is 30 yen per unit.

The FPD market is expanding everywhere all over the world, and the trend is toward higher performance at lower prices. With this higher performance trend, the number of IC chips used in the FPD's input-output circuits, image processing circuits, and information processing circuits, etc., is rising. Furthermore, power supply circuits are increasingly placed for each IC chip, for more efficient supply of power toward the goal of lower power consumption. However, input-output circuits, image processing circuits, and information processing circuits use high-priced multilayer boards, and the expansion of circuit area due to the increase in the number of power supply circuits has been a factor in pushing up FPD prices.

The DC-DC converter's main consistent part that also covers a large area is a choke coil, and naturally there have been requests for downsizing choke coils as a way to reduce the mounting area of the print circuit board. However, reducing the size of the wire-wound inductor used as the choke coil would sacrifice the rated current and Rdc, which would degrade the efficiency of the DC-DC converter. As a result, it was believed that shrinking the size while maintaining electrical characteristics was too difficult, and power inductors of 7mm to 10mm square range have been used.

Taiyo Yuden tackled the problem by expanding on a variation of the NR series, which features a simple sleeveless construction that strictly eliminates all wasted space, to realize a product that is more compact while preserving the required performance choke coils for FPDs, with a rated current of 3.0A and Rdc of 47mΩ (at the inductance of 10μH) in a 6mm square case size.

The NR6045 series lineup is as follows.

Ordering code	Inductance	DC Resistance[Ω]	Rated current[A]	
			Saturation current	Temperature rise current
NR6045T 1R0N	1.0μH±30%	0.014	8.5	4.2
NR6045T 1R3N	1.3μH±30%	0.016	8.0	4.0
NR6045T 1R8N	1.8μH±30%	0.018	7.0	3.7
NR6045T 2R3N	2.3μH±30%	0.021	6.0	3.5
NR6045T 3R0N	3.0μH±30%	0.024	5.0	3.2
NR6045T 4R5M	4.5μH±20%	0.031	4.0	3.0
NR6045T 6R3M	6.3μH±20%	0.038	3.8	2.8
NR6045T 100M	10 μH±20%	0.047	3.0	2.5
NR6045T 150M	15 μH±20%	0.077	2.3	1.9
NR6045T 220M	22 μH±20%	0.115	1.9	1.5
NR6045T 330M	33 μH±20%	0.145	1.5	1.4
NR6045T 470M	47 μH±20%	0.220	1.3	1.1
NR6045T 680M	68 μH±20%	0.330	1.0	0.9
NR6045T 101M	100μH±20%	0.500	0.8	0.7