

News Release

March 22, 2007

## **Taiyo Yuden: Announcing Sale of Compact Wire-Wound Power Inductor with High Current Capability for Mobile Devices**

### **- DC Bias Characteristics in 0805 Size Improves Performance by 27% Over Previous Model -**

Taiyo Yuden has put on sale the compact wire-wound power inductor BRL2012 series in 0805 size (2.0 x 1.25 x 1.0mm, height is maximum value) and BRC1608 series in 0603 size (1.6 x 0.8 x 0.8mm), optimum for the choke coils of DC-DC converters for increasingly compact, high-functionality mobile devices.

These products achieve a high value of allowable DC bias current (hereafter called “DC bias characteristics”), contributing to further downsize compact mobile devices that need higher current for increasingly advanced functionality. BRL2012 achieves a 27% improvement in the DC bias characteristics over the company’s previous model.

Mass production is scheduled to start in April 2007, with a planned monthly production of 10 million units. The sample price for both series is 20 yen per unit.

Mobile phones, digital still cameras, portable music players, and other mobile devices are increasingly using switch-mode DC-DC converters for power circuits as a way to more efficiently use limited battery power. While the switch-mode DC-DC converter rapidly switches voltage on and off for highly efficient conversion of voltage, it also requires a larger number of parts, and DC-DC converters have been naturally large in size. With the faster switching frequency, the DC-DC converter parts are becoming more compact.

In addition, DC-DC converters for high-functionality mobile devices increasingly supply high current through use of faster IC clock frequencies and shifts to lower voltages. For the choke coils used in the DC-DC converters in these kinds of mobile devices, a wire-wound inductor with good DC bias characteristics is particularly suitable. However, since impedance grows higher as wire-wound inductors become more compact, leading to deterioration of DC-DC converter efficiency, maintaining good DC bias characteristics and low impedance while achieving the more compact size demanded in choke coils has been a difficult task that has proven to be a bottleneck in speeding up the switching frequency.

In response, Taiyo Yuden in September 2006 optimized the product design based on a structure that strictly excludes all wasted space, to release the BRL2518 series, 1008 size wire-wound power inductors that maintain both good DC bias characteristics and low impedance. Moreover, in expectations of demand for even more compact size in high-functionality mobile devices, Taiyo

Yuden incorporated its compact wire-wound chip inductor design and development capabilities and manufacturing technologies into further refinements for the BR series. While maintaining the low impedance characteristics, Taiyo Yuden thus developed compact wire-wound power inductors with excellent DC bias characteristics achieving 850mA saturation current for the 0805 and 0603 sizes, (in both cases, 1.0 $\mu$ H), which realize a high-current yet compact DC-DC converter.

The BRL2012 series lineup is as follows.

Ordering code	Inductance	DC Resistance [ $\Omega$ ]	Rated current [mA]	
			Saturation current	Temperature rise current
BRL2012T 1R0M	1.0 $\mu$ H $\pm$ 20%	0.135	850	850
BRL2012T 1R5M	1.5 $\mu$ H $\pm$ 20%	0.18	700	750
BRL2012T 2R2M	2.2 $\mu$ H $\pm$ 20%	0.30	600	550
BRL2012T 3R3M	3.3 $\mu$ H $\pm$ 20%	0.50	490	440
BRL2012T 4R7M	4.7 $\mu$ H $\pm$ 20%	0.55	340	400
BRL2012T 6R8M	6.8 $\mu$ H $\pm$ 20%	0.75	290	350
BRL2012T 100M	10 $\mu$ H $\pm$ 20%	0.85	270	330
BRL2012T 150M	15 $\mu$ H $\pm$ 20%	1.00	220	300
BRL2012T 220M	22 $\mu$ H $\pm$ 20%	1.30	190	270
BRL2012T 330M	33 $\mu$ H $\pm$ 20%	2.00	150	220
BRL2012T 470M	47 $\mu$ H $\pm$ 20%	3.50	125	160

The BRC1608 series lineup is as follows.

Ordering code	Inductance	DC Resistance [ $\Omega$ ]	Rated current [mA]	
			Saturation current	Temperature rise current
BRC1608T R20M	0.20 $\mu$ H $\pm$ 20%	0.060	1,750	980
BRC1608T R35M	0.35 $\mu$ H $\pm$ 20%	0.075	1,400	810
BRC1608T R45M	0.45 $\mu$ H $\pm$ 20%	0.080	1,250	800
BRC1608T R56M	0.56 $\mu$ H $\pm$ 20%	0.085	1,150	760
BRC1608T R77M	0.77 $\mu$ H $\pm$ 20%	0.110	1,000	660
BRC1608T 1R0M	1.0 $\mu$ H $\pm$ 20%	0.180	850	520
BRC1608T 1R5M	1.5 $\mu$ H $\pm$ 20%	0.300	700	410
BRC1608T 2R2M	2.2 $\mu$ H $\pm$ 20%	0.550	550	280