Expansions in both production capacity and production bases for high-frequency inductor

Murata Manufacturing

April 10, 2012

Murata Manufacturing Co., Ltd.
President/ Statutory Representative Director: Tsuneo Murata

Overview

Murata Manufacturing Co., Ltd. recently decided to expand the production capacity of its high-frequency inductors[*1], which are used in smartphones and other small communication devices. We are therefore working to start production at Okayama Murata Manufacturing Co., Ltd., and the production of these inductors at a multiple number of production bases will help diversify the company's risk.

Summary

Murata has been turning out high-frequency thick-film chip inductors in both the 0603 and 0402 sizes at the Miyazaki Plant of Fukui Murata Manufacturing Co., Ltd., and now production is to be stepped up in order to meet an increase in demand.
In a related future move, in October 2012, Okayama Murata Manufacturing Co., Ltd. is to commence production of the 0603 inductors that are the focus of high-volume demand.
Figures for the combined production capacity of the two plants will register a

4.6-fold increase or so over October 2011 and a 1.8-fold jump or so over April 2012.

Background

Along with the adoption of more and more functions in smartphones and other small communication devices, and with the ever-growing sophistication of these functions, the demand for high-frequency inductors that combine a compact size with a high Q[*2] continues to expand at a rapid pace. To meet this demand, Murata aims to continue to boost its production capacity and diversify its risk by producing these components at multiple bases in order to ensure stable supplies.

Comments from member of the board of directors Kiminori Yamauchi, Components Business Unit

We use our own unique thick-film printing system[*3] for our high-frequency inductors, and the design of these inductors is ideally suited to high-frequency circuits. Our customers have been using them more and more, and they have urged us to step up our supply capabilities. Given our determination to ensure that stable supplies of our inductors will continue, we will be moving quickly to boost our production capacity and add a new production base. By so doing, we are constructing a setup that will certainly eliminate any concerns that our customers may have about our ability to provide them with stable supplies well into the future.

Production

- Production is underway at the Miyazaki Plant of Fukui Murata Manufacturing Co., Ltd.
- Production is scheduled to commence at Okayama Murata Manufacturing Co., Ltd. in October 2012

Applications

- High-frequency modules (PA, ANT, VCO, SAW, etc.) for mobile phones
- Smartphones, mobile phones (GSM, CDMA, LTE, etc.)
- Tablet PCs
- Digital TV tuner modules
- W-LAN modules
- Bluetooth® modules
- All types of high-frequency circuits

Features

- Thick-film printing technique used
  Only Murata uses a thick-film printing technique for inductors used in high-frequency circuits. This technique has made it possible to achieve a high Q

without compromising the small size of the inductors.

- Highest Q for 0402 and 0603 sizes in the industry
- Deviations among the lowest achieved in the industry
  <0603size>
  The inductance deviations for this size are ±0.1nH (0.6 to 3.9nH) , ±3% (4.3nH to 27nH) and ±5% (33nH to 120nH).
  <0402size>
  The inductance deviations for this size are ±0.1nH (0.6 to 3.9nH) and ±3% (4.3nH to 18nH) .
- High frequency stability provided
  Murata's inductors provide a high Q and stable inductance up to the high-frequency region.
- Inductance values: 0.6 to 120nH (0603 size) , 0.4 to 18nH (0402 size)

Basic facts about Okayama Murata Manufacturing Co., Ltd.

Company name:	Okayama Murata Manufacturing Co., Ltd.
Address:	77 Fukumoto, Oku-cho, Setouchi-shi, Okayama, Japan
Established:	April 1992
Capital:	¥480 million
Production lines:	Ceramic raw materials, chip monolithic ceramic capacitors, multilayer devices
Representative:	Hideo Sakamoto, President, Statutory Representative Director
Director:	Yoshimi Nakano, Member of the Board of Directors
No. of employees:	1,457

Terminology

*1	Inductor:	Inductors create many different effects by causing interactions between electricity and magnetism. Together with capacitors and resistors, they are basic components in electronic circuits, and are also known as coils. In terms of their main applications, they can be divided into two categories: signal-type inductors and power supply-type inductors. "High-frequency inductors" belong to the

		signal-type category and are inductors that are used especially in RF circuits, for example. In circuits that convey electrical signals, they are mainly used for frequency matching and as filters. Power supply-type inductors play noise suppression, smoothing and other roles in circuits that supply power to semiconductors.
*2	Q:	"Q" refers to the quality factor (or Q factor) . It is a measure of the sharpness of resonance. The higher this factor, the lower the loss in the high-frequency regions, and the better the inductor.
*3	Thick-film printing system unique to Murata:	This is a technology used to form microscopically small wiring patterns with a high level of precision by drawing on a photolithography technology that employs thick-film paste. This system has made it possible to achieve a high Q factor while maintaining impressively small dimensions.

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