

## Murata Manufacturing Co., Ltd.

Company: Murata Manufacturing Co., Ltd.

Exchange Listing: 6981 (TSE1, OSE1)

Location of head office: 1-10-1, Higashikotari, Nagaokakyo-shi, Kyoto

President/ Statutory Representative Director: Tsuneo Murata

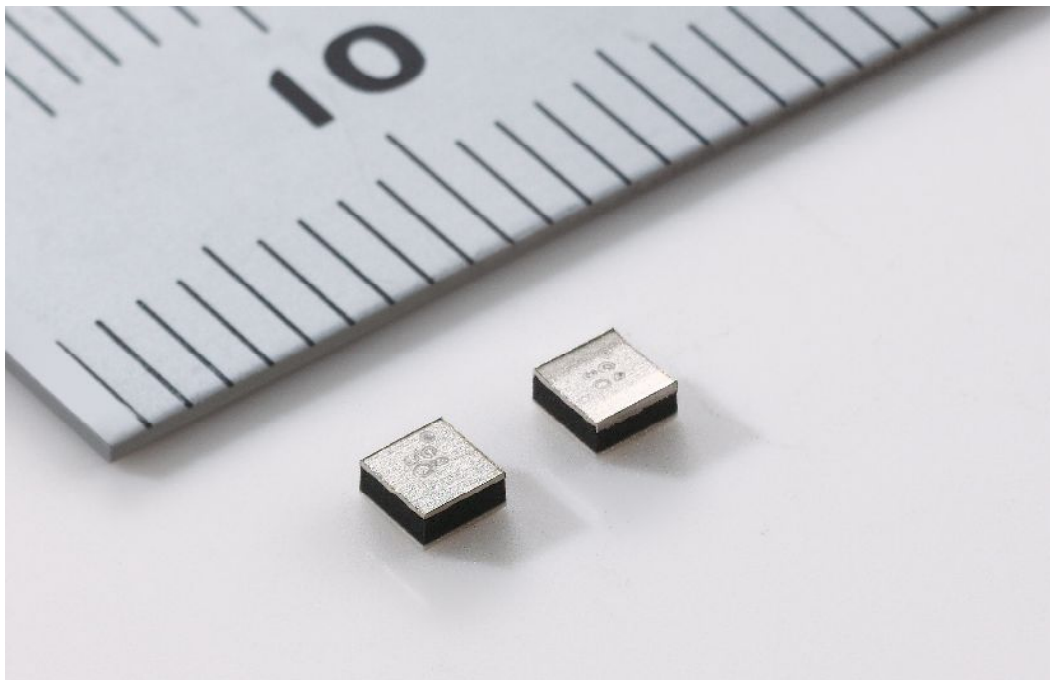
Contact: Yukio Oshima, Corporate Communications Department

Telephone: +81-75-955-6786/ FAX: +81-75-955-6526

URL: <http://www.murata.com>

### Commercializing the smallest isolator (for mobile phones) in the industry —CEG23 Series—

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**[Overview]** Murata Manufacturing Co., Ltd has commercialized an isolator for mobile phones #1 the CEG23 series, smaller than the current product by approximately 60%, making it the smallest in the industry (2.0x2.0x1.0mm). This product will be exhibited at “CEATEC JAPAN 2008,” opening at the Makuhari Messe on September 30.

**[Background]** As the trend for high performance and multiple features in mobile phones advances, the demand for smaller electronic components from manufacturers is growing stronger. With the expansion of the multi-band mobile phone market, demand for smaller versions of the RF circuits responsible for wireless communications is especially strong. Murata’s newly commercialized isolator product, 2.0x2.0x1.0mm, offers a 56% reduction in size from the current CEG21 series. It also offers an LGA terminal #2, which contributes to the reduction of mounting space and increases freedom in

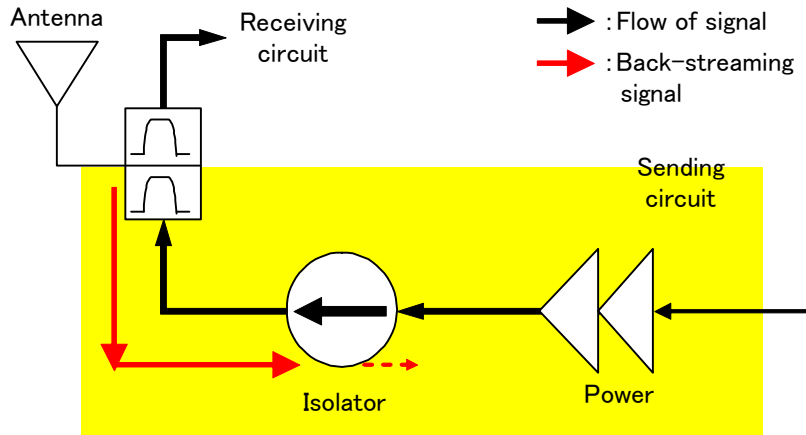
RF circuit design. We have also reevaluated its construction and production processes to realize characteristics equivalent to the current model. This enables current model dependent on limited space to use the new isolator product and will contribute to higher quality mobile phone design.

**[Terminology]**

**#1 Isolator:**

An isolator is a passive device made of magnets and ferrite material which is used to protect other RF components such as Power Amplifier from excessive signal reflection, as a result, contributes to better signal quality.

Fig. 1: Example of isolator application



**#2 LGA (Land Grid Array) terminal:**

A type of electrode configuration in a package. Minute flat electrodes called “lands” are lined up underneath the package in this configuration.

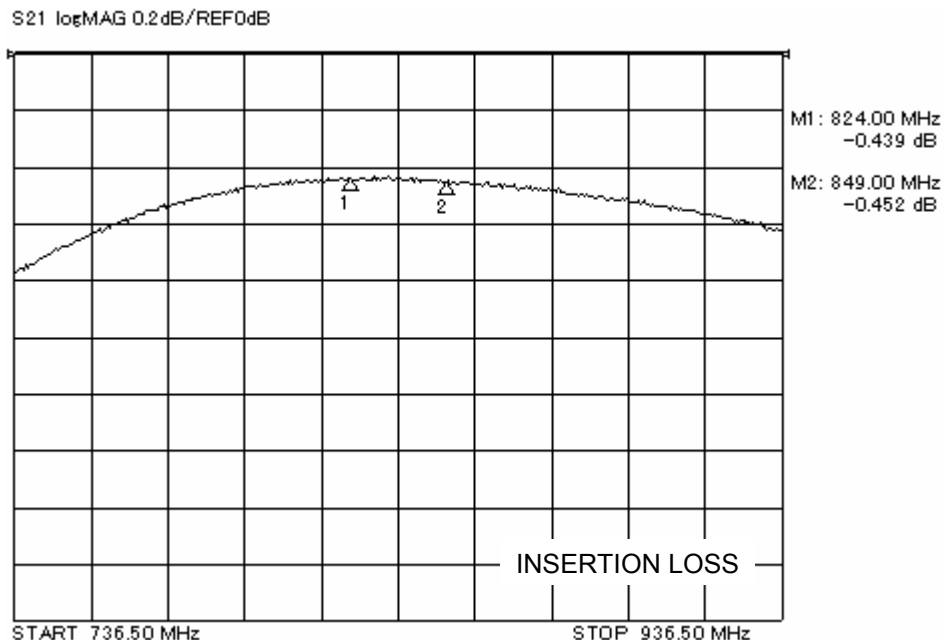
**[Features]**

- 1) Greatly reduced size and mounting space by innovative construction and less number of components.
- 2) Reduced characteristics dispersion, insertion loss and variation within the bandwidth by adopting new electrode construction, reviewing production processes and introducing a new integrated circuit board.
- 3) Inherited the two-port circuit technology from the current models to maintain excellent matching with the power amplifier.

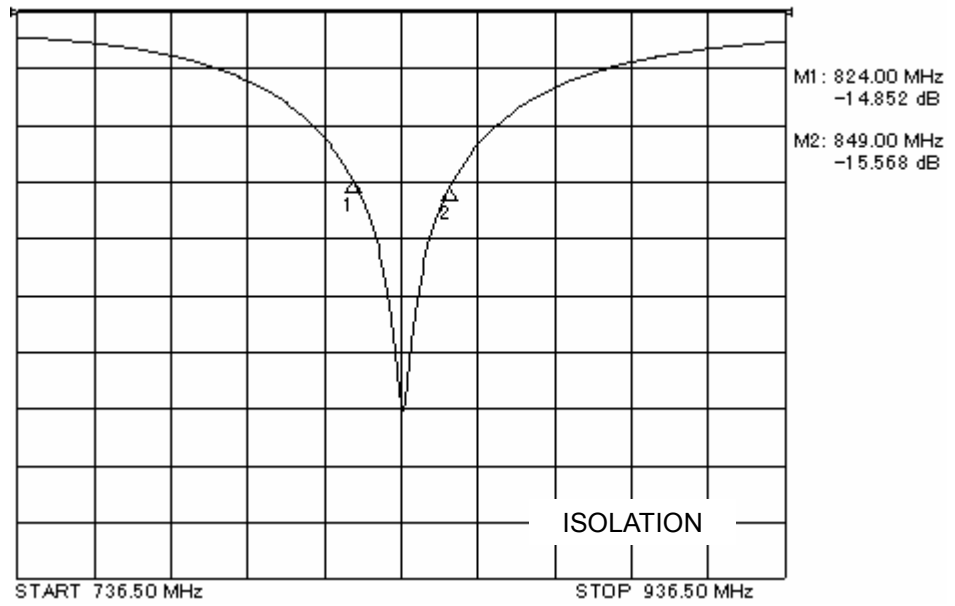
**[Applications]** For 800 MHz/2 GHz mobile phone terminal

**[Part Number]** CEG23 series

**[Characteristics Diagram]**



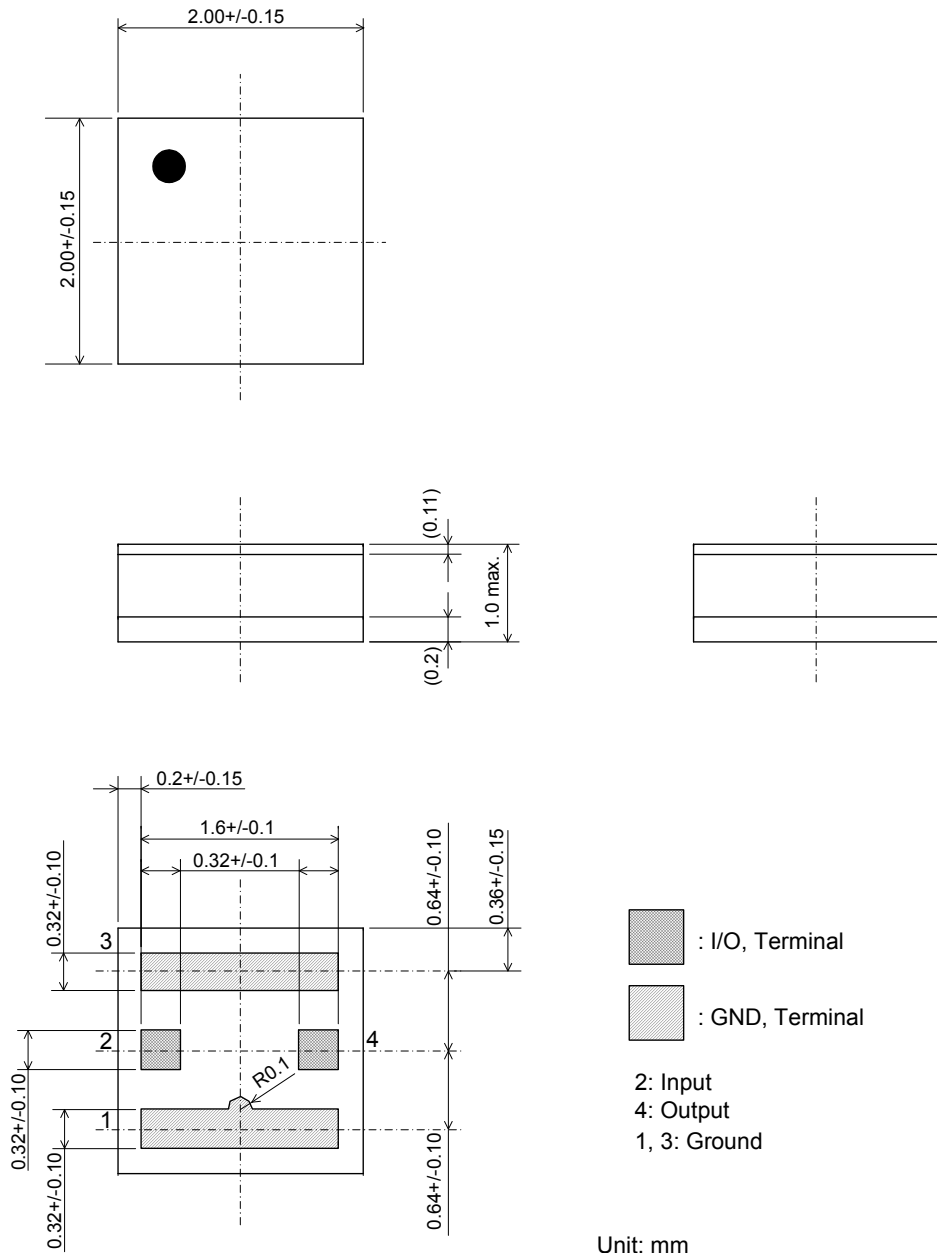
S12 logMAG 5dB/REF0dB



**[Electric performance]**

	CEG23836MDCB000 (New Product)		CEG21836MDCB000 (Conventional Product)	
Frequency Range	824 - 849 MHz		824 - 849 MHz	
Operating Temp.	-35-+85deg.C	+20-+30deg.C	-35-+85deg.C	+20-+30deg.C
Insertion Loss	0.65 dB max.	0.55 dB max.	0.6 dB max.	0.5 dB max.
Isolation	10 dB min.	12 dB min.	11 dB min.	12.5 dB min.
Size	2.0x2.0x1.0max. mm		3.2x2.5x1.2max. mm	

**[External Size]**



**[Production]** 2 million units per month are planned from September, 2008.  
In the future, 10 million units per month are planned.

**[Sample Price]** 100 YEN per unit

**[Patents]** 22 patents pending