

Noise suppression sheets

Ultra-thin noise suppression sheets with the world's highest permeability

- 20 percent thinner than existing sheets with the same performance
- World's highest magnetic permeability of $220 \mu'$ at 1 MHz (typ.) for 0.03 mm or 0.05 mm sheets

September 15, 2015

TDK Corporation presents the ultra-thin IFL16 noise suppression sheet: The sheet has a thickness of just 0.03 mm or 0.05 mm, depending on type, making it 20 percent thinner than existing sheets with the same performance. At this thickness the new material offers the world's highest magnetic permeability* of $220 \mu'$ at 1 MHz (typ.). IFL16 is designed for a temperature range of between $-40\text{ }^{\circ}\text{C}$ and $+85\text{ }^{\circ}\text{C}$ and is suitable for the frequency range from 0.5 MHz to 1000 MHz. The standard size of the sheet is 300 mm x 200 mm. The sheet can also be supplied on a roll (300 mm x 100 m). The new sheet extends the existing TDK product spectrum of noise suppression sheets of types IFL10M and IFL12. Volume production will start in September 2015.

Development of smartphones and other mobile devices is still focused on the miniaturization of the individual components, while the range of functions increases. Apart from a PCB layout that supports EMC, adequate additional shielding of the devices is playing an increasingly important role. Noise suppression sheets such as the new ultra-thin IFL16 are a space-saving answer to this requirement. They can prevent emitted interference from penetrating the device or can prevent reflections created within the device from affecting the function of other devices.

A growing number of devices use a stylus pen for input, which works on the principle of magnetic induction. In order to improve sensitivity, these devices use magnetic films for the inductive sensor unit of the display. This simultaneously demands both a high level of magnetic permeability and a very thin film. On the basis of its substantial competence regarding materials and technology, TDK is offering attractive solutions for such applications with its new IFL16 foil.

* Status: August 2015, according to TDK investigations

Glossary

- Magnetic permeability (μ'): Measurement of the permeability of materials to magnetic fields. Materials with a high magnetic permeability, such as ferromagnetic materials, align their magnetic moments in parallel with the external magnetic field.

Main applications

- Smartphones and tablets
- Input devices such as stylus pens

Main features and benefits

- Ultra-thin material of 0.03 mm or 0.05 mm, depending on type, making it 20 percent thinner than existing sheets with the same performance
- World's highest magnetic permeability of 220 μ' at 1 MHz (typ.) for 0.03 mm or 0.05 mm sheets
- Weight saving due to thinner material
- Significant reduction of emitted interference
- Improved sensitivity of stylus pens

Key data

| Type | Standard size [mm] | Thickness [mm] | Magnetic permeability at 1 MHz (typ.) [μ'] | Frequency range [MHz] |
|--------------------|--------------------|----------------|--|-----------------------|
| IFL16-030NB300x200 | 300 x 200 | 0.03 | 220 | 0.5 to 1000 |
| IFL16-050NB300x200 | | 0.05 | | |

About TDK Corporation

TDK Corporation is a leading electronics company based in Tokyo, Japan. It was established in 1935 to commercialize ferrite, a key material in electronic and magnetic products. TDK's portfolio includes electronic components, modules and systems* marketed under the product brands TDK and EPCOS, power supplies, magnetic application products as well as energy devices, flash memory application devices, and others. TDK focuses on demanding markets in the areas of information and communication technology and consumer, automotive and industrial electronics. The company has a network of design and manufacturing locations and sales offices in Asia, Europe, and in North and South America. In fiscal 2015, TDK posted total sales of USD 9.0 billion and employed about 88,000 people worldwide.

* The product portfolio includes ceramic, aluminum electrolytic and film capacitors, ferrites, inductors, high-frequency components such as surface acoustic wave (SAW) filter products and modules, piezo and protection components, and sensors.

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http://www.global.tdk.com/news_center/press/201509151943.htm

Further information on the products can be found under
http://product.tdk.com/en/catalog/datasheets/emc_noise-sheet_ifl_en.pdf

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