

Press Release

Silicon capacitor from Murata boosts technology to support the highest performance requirements of new power distribution networks

Silicon capacitor supports new power distribution networks performance requirements

Hoofddorp, Netherlands: Murata has extended its product offering for the mobile and high-performance computing (HPC) markets with the availability of its latest silicon process technology to fabricate silicon capacitors with a density of $1.3\mu\text{F}/\text{mm}^2$. The extremely low ESL (few pH) and low ESR (few $\text{m}\Omega$) of these devices support the highest performances of new power distribution networks (PDN) that require low impedance over a wide frequency bandwidth.

As digital ICs evolve to offer more features at lower voltages, resolving issues like noise and voltage fluctuation is critical. Its $<50\mu\text{m}$ profile enables chip designer engineers to embed the silicon capacitor into the package as close to the active die as possible, minimizing the current's effective path length and, thereby, minimizing parasitics.

These multi-terminal devices satisfy the various SoC and microprocessor design requirements for multiple terminal capacitor networks. Replacing conventional monolithic ceramic capacitors with multi-terminal silicon devices reduces the total quantity of capacitors required on the board significantly, which improves the

compactness of the end design. Fewer capacitors also results in total savings in both bill of materials and mounting costs.

For more information on Murata's high-density silicon capacitors, please visit:

www.murata.com/en-eu/products/capacitor/siliconcapacitors

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About Murata

Murata is a leading manufacturer of electronic components, modules, and devices. The complete range includes ceramic capacitors, resistors/thermistors, inductors/chokes, timing devices, buzzers, sensors and EMI suppression filters. Whilst the company is known as a global ceramic capacitor manufacturer, it is also a world leader in Bluetooth® & WiFi™ Modules, board-mount DC-DC converters and is a key manufacturer of standard and custom AC-DC power supplies.

Established in 1944, Murata is headquartered in Japan and has European offices in Finland, France, Germany, Hungary, Italy, the Netherlands, Spain, Switzerland and the UK.

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