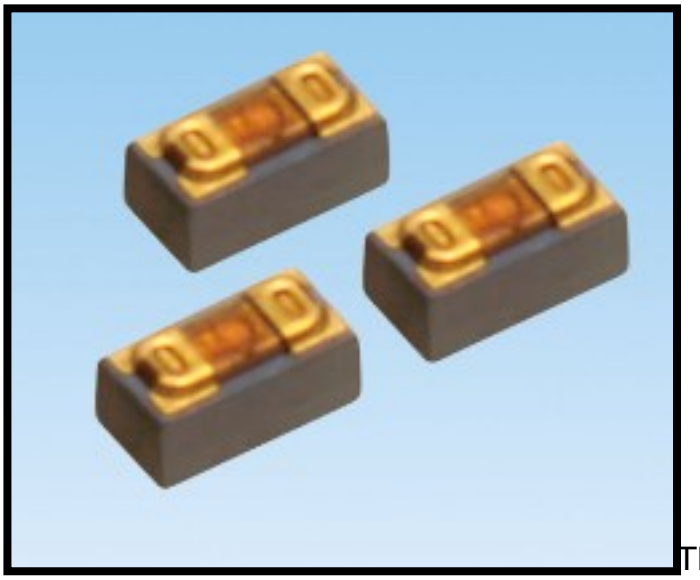
# Thin-film Capacitors in 0402 with a High Quality Factor



TDK-EPC, a group company of TDK Corporation, presents the new TDK TFSQ0402 series of thin-film capacitors in a 0402 (EIA 01005) package. Under the product name Z-match the new capacitors are designed for power amplifier circuits and RF matching circuits in smartphones, mobile phones, wireless LANs and other communication technologies. Mass production started in August 2011.

In order to create the new line of high-frequency components with low ESL and ESR, TDK EPC applied TDK's advanced thin-film technology know-how that is used to manufacture HDD magnetic heads. The result is a new line of compact, low-profile components with outstanding performance. Thanks to the thin-film process Z-match capacitors achieve an extremely tight tolerance of ± 0.05 pF and a Q factor that is 150 percent higher than that of existing products (2.2 pF at 2 GHz). Furthermore, the new components offer an excellent high self-resonant frequency (SRF) of 6.8 GHz (2.2 pF). With these features, the new series exhibits superior high-frequency characteristics in impedance matching circuits

The terminations of the Z-match series are located on the bottom surface of the components, and a very exact dicing process ensures that the component dimensions are extremely precise, thus making them especially suitable for mounting on modules.

The components have an operating temperature range of -55 to +125 °C and are designed for use at high frequencies from 2.4 to 6 GHz.

www.global.tdk.com [1]

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