

Yageo Extends MLCC NPO Product Range Towards Higher Capacitance and Rated Voltage

Yageo Corporation, the global leading passive component service provider, is extending the NPO product range of multi-layer ceramic capacitors (MLCC) towards higher capacitance and rated voltage than they were previously.



In contrast to class II MLCCs like the X5R, X6S, and X7R, the NPO is categorized as class I MLCC with excellent capacitance stability, $\pm 30\text{ppm}/^\circ\text{C}$, over a temperature range of -55°C to $+125^\circ\text{C}$, and therefore the NPO is called a temperature compensating capacitor. Furthermore, the material feature of the NPO makes its SRF (Self Resonant Frequency) always higher than the X5R, X6S, and X7R, and the NPO is classified as suitable for high frequency applications.

Another way to classify the MLCC is from the viewpoint of power dissipation. The X5R, X6S, and X7R are high loss types, while the NPO is a low loss type. For example, a high speed CPU needs a high capacitance MLCC to decouple the noise signals (the loss may not be the main concern) for that reason, a high loss / high capacitance type of MLCC is selected. On the other hand, when an application requires impedance matching or tuning in a resonance circuit, particularly under higher frequency, a low loss NPO is the first choice.

Recently, power efficiency and energy saving have attracted more people's attention as factors for various applications. Typical examples include power supplies, DC-AC inverters, DC-DC converters, and chargers etc., and more and more devices are used outdoors and therefore face environmental temperature variations. These trends have driven the low loss NPO to extend its capacitance and rated voltage in order to meet these basic requirements with the extra benefits of better capacitance stability over temperature, higher frequency application and greater energy efficiency than the Class II MLCC.

Yageo is launching the new NPO range including the 0402/1nF/100V, 0603/1nF/250V, 0603/10nF/100V, 0805/10nF/250V, 1206/10nF/630V, and 1206/100nF/100V etc. As the dielectric constant of the NPO is about one-hundredth of X5R, the processing technology to manufacture, for example the 10nF NPO, is roughly equivalent to an 1uF X5R with the same case size and rated voltage. Yageo expects that the advanced technologies of the NPO will offer better solutions in order to provide customers with product value.

For more information or to request datasheets, contact your Diverse Electronics representative or email sales@diverseelectronics.com.



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