Halogen-free leaded multilayer ceramic capacitors for automotive and general-purpose applications

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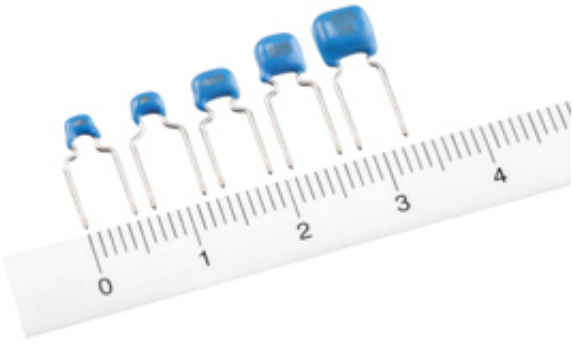

TDK Corporation presents two new series of leaded MLCCs, which are halogen-free according to IEC 61249-2-21 and expand the company's lineup of products that offer minimal impact to the environment over the entire life cycle. The new components will be available in two specifications: the commercial-grade FG series and the automotive-grade FA series. Unlike conventional products, the new series do not use halogen as a flame retardant in the external resin coating, thus supporting the design of environmentally friendly applications. Mass production will be launched in April 2015.

The commercial-grade FG series covers a wide rated voltage range of 6.3 V to 630 V, and a capacitance range of 1 pF to 100 µF, while the automotive-grade FA series is available with rated voltages from 25 V to 630 V and rated capacitance values from 100 pF to 22 µF. The lineup of the FA series features MLCCs with NP0 and X8R temperature characteristics, which are designed for high temperature environments of up to +150 °C. In addition, this series is qualified to AEC-Q200.

The use of leaded MLCCs in automotive electronics is growing. Modern cars can incorporate as many as 100 small electric motors or more in order to satisfy the growing demands for more safety and driving comfort. Leaded MLCCs with welded or crimped connections are widely used in order to suppress EMI caused by these motors. Noise countermeasures for such compact electric motors are bound to become even more important in future, and TDK is continuously expanding its lineup of suitable components.

Main applications

- EMI suppression in various automotive electric motors
- Resonance circuits in keyless entry systems
- Bypass capacitor, smoothing capacitor and similar in SMPS
- Snubber circuits and PFC input filters

Main features and benefits

- Halogen-free to support the design of environmentally friendly applications
- Wide rated voltage range from 6.3 V to 630 V
- Broad rated capacitance range from 1 pF to 100 µF
- Designed for harsh environmental conditions with temperature of up to +150 °C

- Automotive-grade series is qualified to AEC-Q200 (automotive-grade FA series)

Key data

Commercial-grade FG series *	Dimensions [mm]	Rated voltage [V]	Capacitance [F]
FG18/FG28	4.0 x 5.5 x 2.5	10 to 250	1 pF to 22 µF
FG14/FG24	4.5 x 5.5 x 3.0	10 to 450	100 pF to 47 µF
FG16/FG26	5.5 x 6.0 x 3.5	6.3 to 630	100 pF to 100 µF
FG11/FG20	5.5 x 7.0 x 4.0	6.3 to 630	15 nF to 47 µF
FG22	7.5 x 8.0 x 4.5	6.3 to 630	47 nF to 100 µF

*Third character of the type designation indicates lead spacing: "1" = 2.5 mm, "2" = 5 mm

Automotive-grade FA series *	Dimensions [mm]	Rated voltage[V]	Capacitance [F]
FA18/FA28	4.0 x 5.5 x 2.5	25 to 250	100 pF to 1 µF
FA14/FA24	4.5 x 5.5 x 3.0	25 to 450	100 pF to 4.7 µF
FA16/FA26	5.5 x 6.0 x 3.5	25 to 630	100 pF to 10 µF
FA11/FA20	5.5 x 7.0 x 4.0	25 to 630	15 nF to 10 µF
FA22	7.5 x 8.0 x 4.5	25 to 630	47 nF to 22 µF

*Third character of the type designation indicates lead spacing: "1" = 2.5 mm, "2" = 5 mm

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