

Ceramic capacitors

CeraLink™ with higher rated voltage

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TDK Corporation has extended the CeraLink™ series with two low-profile (LP) types designed for a rated voltage of 900 V DC. The SMT capacitors have a capacitance of 0.25 μF and feature different terminations: the B58031I9254M062 type with L-style termination has dimensions of 10.84 x 7.85 x 4 mm, while the B58031U9254M062 with J-style termination measures only 7.14 x 7.85 x 4 mm.

The new capacitors supplement the existing LP portfolio which until now has included types for 500 V DC (1 μF) and 700 V DC (0.5 μF). Thanks to their compact design and high permissible continuous operating temperature of 150 °C, all LP types can, for example, also be embedded directly into IGBT modules as snubber capacitors.

Another advantage of the CeraLink capacitors based on PLZT (lead lanthanum zirconate titanate) ceramic is their extremely low ESR and ESL values. For example, these components feature a minimum ESR value of 12 m Ω and an ESL value of just 2.5 nH. These capacitors are therefore well suited to converter topologies based on fast-switching semiconductors such as GaN or SiC. Voltage overshoots and ringing when switching are significantly lower than with conventional capacitor technologies. Another feature of the LP types is the high steady state ripple current of up to 11.4 A_{RMS} .

If higher capacitances are required, CeraLink types with solder pin terminations are available. They are designed for rated voltages of 500 V or 700 V DC and offer capacitances of 20 μF (500 V DC) or 10 μF (700 V DC). The ESL value of these types is typically around 3.5 nH.

Main applications

- Fast-switching converters

Main features and benefits

- Types available with rated voltages of 500 V DC, 700 V DC and now also 900 V DC
- Low ESR and ESL

Key data of CeraLink LP series

Type	Rated voltage [V DC]	ESR [mΩ] *	ESL [nH]	Current (max.) ** [A _{RMS}]
B58031I5105M062 (L-style)	500	12	2.5	11.4
B58031U5105M062 (J-style)				
B58031I7504M062 (L-style)	700	29		
B58031U7504M062 (J-style)				
B58031I9254M062 (L-style)	900	45		5.1
B58031U9254M062 (J-style)				

* 25 °C, 1 MHz, zero power. Significant decrease of up to 80% in operation due to self-heating.

** 100 kHz, T_A = 85 °C

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* which are 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 2016, TDK posted total sales of USD 10.2 billion and employed about 92,000 people worldwide.

* The product portfolio includes ceramic, aluminum electrolytic and film capacitors, ferrites, inductors, high-frequency components and modules, piezo and protection components, and sensors.

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