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CeraLink™ – a new technology for DC link circuits

TDK Corporation presents the EPCOS CeraLink™, an innovative DC link capacitor for frequency converters. CeraLink™ is based on a PLZT ceramic material (lead lanthanum zirconate titanate) and covers a capacitance range from 1 µF to 100 µF at a rated voltage of 400 V DC. Another type has a rated voltage of 800 V DC and a capacitance of 5 µF.

The new CeraLink™ offers many benefits in the stabilization and filtering of DC link circuits of power converters – especially compared to conventional capacitor technologies: thanks to a low ESL value of less than 4 nH as well as a low ESR of less than 4 mΩ, the new capacitors are ideally suited for applications with high switching frequencies and rapid rise times. This includes converters for industrial and automotive electronics that operate with new fast-switching MOSFETS or IGBTs.

CeraLink™ can be produced with several commonly available terminal configurations, including low profile, SMD, solder pin and press-fit busbar types. Designs that can be integrated in semiconductor power modules are also possible. CeraLink™ is designed for temperatures between -40 and +125 °C (also up to +150 °C for short periods): thus making it suitable for SiC-based power modules as well. Compared to conventional MLCCs, CeraLink™ features a positive DC bias. Another benefit of the new capacitor is the very compact dimensions. Depending on the type, they range between 6.84 x 7.85 x 2.65 mm³ and 52.5 x 30.5 x 10.5 mm³.

Main applications

- Fast-switching power modules for industrial and automotive electronics

Main features and benefits

- Capacitances between 1 µF and 100 µF
- Rated voltages of 400 V DC or 800 V DC
- Compact dimensions
- High operating temperature of 125 °C, for short periods up to 150 °C

Key data

Terminal form	**Low profile**	**SMD**	**Solder pins**	**Press-fit busbar**
Capacitance [µF]	1	5	5 / 20	100
Rated voltage [V DC]	400	400	800 / 400	400
Dimensions [mm] without terminals	6.84 x 7.85 x 2.65	12.8 x 8.4 x 8.8	33 x 32 x 11.5	52.5 x 30.5 x 10.5