### Capacitors for Fast-Switching Semiconductors

TDK CeraLink capacitors are a highly compact solution for the snubber and DC links of fast switching converters based on SiC and GaN semiconductors. These capacitors are based on a PLZT ceramic material (lead lanthanum zirconate titanate). In contrast to conventional ceramic capacitors, CeraLink capacitors have their maximum capacitance at the application voltage, and this even increases proportionately to the share of the ripple voltage.

#### Two designs are currently available:
- **SMD low profile (LP) series** with capacitances from 0.25 µF up to 1 µF and rated voltages between 500 V DC and 900 V DC
- **Solder-pin (SP) series** with capacitances from 5 µF to 20 µF and rated voltages between 500 V DC and 900 V DC

Both types offer extremely low ESL values of below 3.5 nH.

The capacitors are designed for an operating temperature of -40° C to +125° C and can even withstand brief exposures up to +150° C.

#### Applications:
- Designed for 650V – 1300V semiconductor modules, industrial power converters and inverters.
- DC link/ snubber capacitors for power converters and inverters

#### Key Benefits:
- High capacitance density
- Supports further miniaturization of power electronics on the system level
- Low ESL
- Supports fast-switching semiconductors and high switching frequencies
- Low losses at high frequencies and high temperatures
- Low ESR
- High current rating
- High operating temperature (150°C)
- MLSC Design, no metalization cap

#### Part Numbers and Specifications

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Capacitance (µF)</th>
<th>Capacitance Tolerance (±)</th>
<th>Rated Voltage (VDC)</th>
<th>Semiconductor Rating (VDC)</th>
<th>Operating Temperature Range (ºC)</th>
<th>Package Type</th>
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<tbody>
<tr>
<td>B58031I5105M62</td>
<td>1</td>
<td>20%</td>
<td>500</td>
<td>650</td>
<td>-40 to 150</td>
<td>Surface Mount - L Leads</td>
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<td>900</td>
<td>-40 to 150</td>
<td>Surface Mount - L Leads</td>
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<td>-40 to 150</td>
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<td>900</td>
<td>1300</td>
<td>-40 to 150</td>
<td>Solder Pins</td>
</tr>
</tbody>
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Where to use CeraLink?

DC-link capacitor or Snubber capacitor for Industry and Automotive Applications

Application, Frequency and Semicon Technology

Outstanding ESR Performance at High Temperatures

Equivalent series resistance E_{sr} at U_{dc}

Specified value of E_{sr} at 25°C

Above 85°C the E_{sr} falls below 20% of the specified value

Capacitance Characteristics

The capacitance density of the CeraLink material increases with increasing AC voltage.

The characteristic make the CeraLinkTM an ideal component for DC Link and snubber applications, where a large amount of capacitance is needed when voltage peaks occur.