

Product Brief 2019

CeraLink[®] Capacitors

For Automotive and Industrial Applications

As DC link, filter or snubber capacitors for

- Electrical vehicles and PHEV's
 - Onboard chargers (OBC)
 - DC/DC converters
 - Powertrain converters
 - Electric HV pumps
 - HV compressors
 - HV heating systems
- Traction
- Charging systems
- X-Ray generators
- Solar and wind power supplies
- Emulators and test benches
- Downhole drilling/mining
- Drives

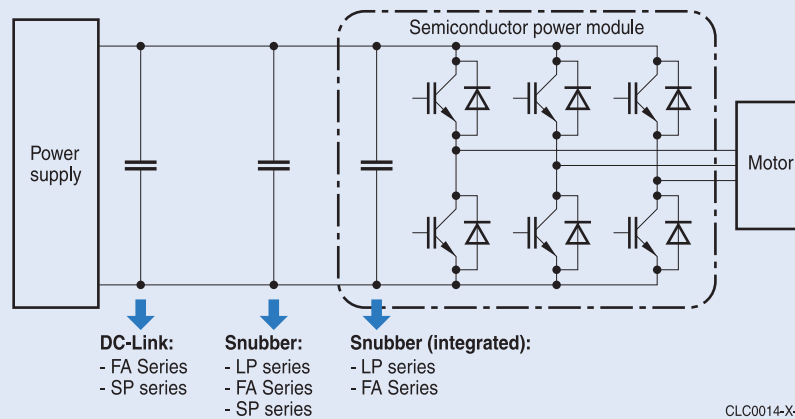


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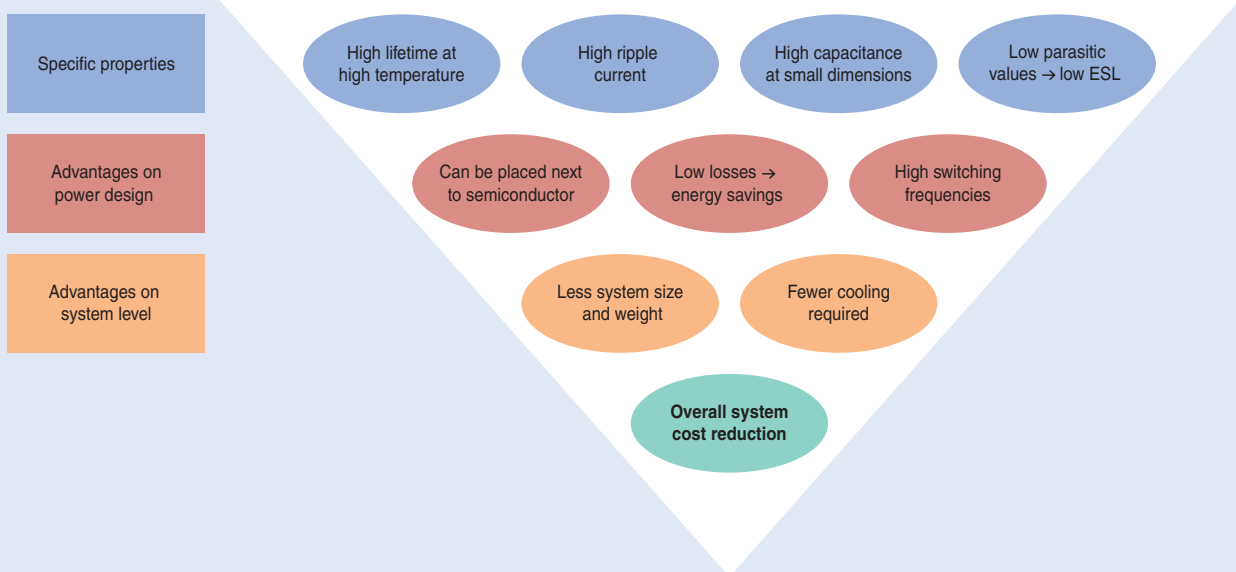
Introduction

CeraLink is a family of very compact capacitors for stabilizing voltages in the DC link. They are therefore suitable for use as either snubber or DC link capacitors. These products are based on PLZT ceramics and are designed to provide engineers with compact components optimized for fast switching converters, converters with very tight space requirements and converters that need to withstand high operating temperatures. The basic component is a ceramic chip which either is manufactured with lead frames (LP series) or which can be combined modularly to form capacitors with higher capacitance values (FA and SP series).

Main applications

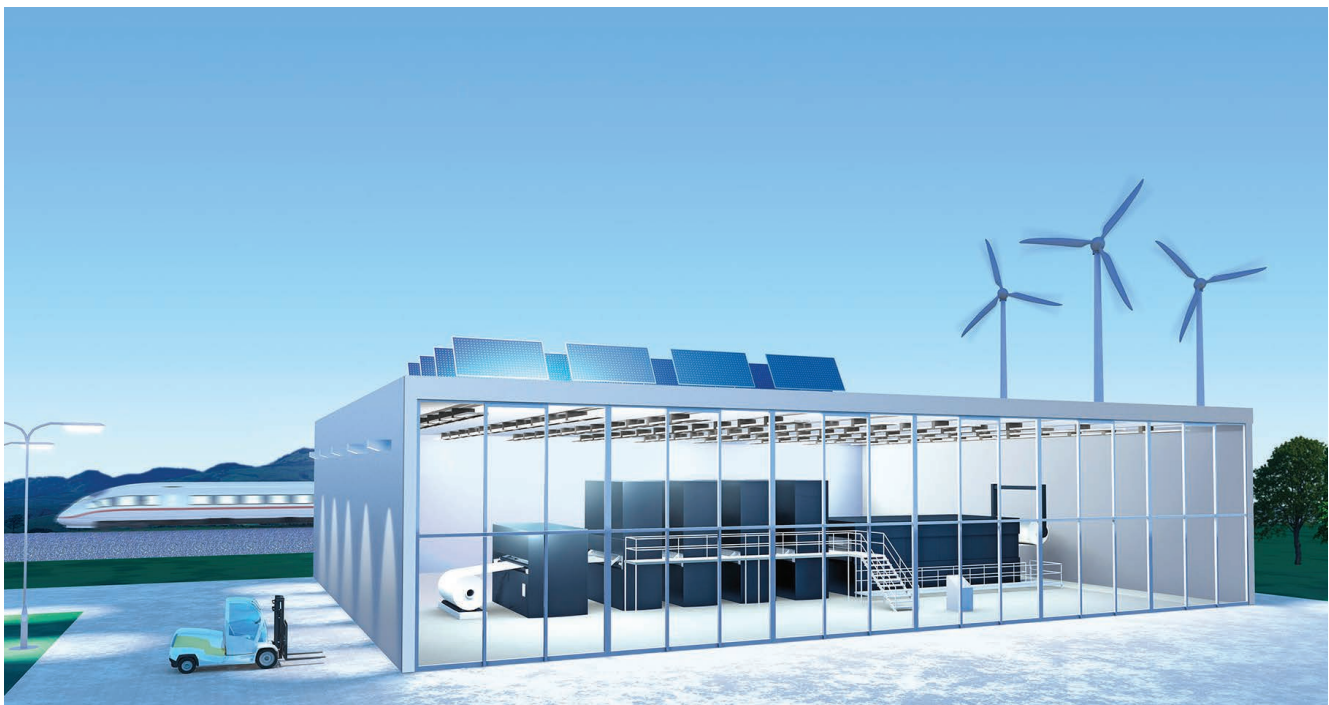


Cost reduction on power system by CeraLink capacitors



CeraLink Capacitors

Features and key benefits	
Compact design	Anti-ferroelectric PLZT ceramic offers high capacity density at operating conditions.
Ultra low ESL	ESL values down to 2 nH.
Ripple current	Best in class: Ripple current handling ability per volume.
Robust construction	Lead frame absorbs mechanical stress caused by board bending. Multi Layer Serial Design (MLSC) reduces risk of short circuits.
Automotive qualification	Qualified based on AEC-Q200.
High operating temperature	Approves high lifetime at high temperature up to +150 °C.
Supports high voltage	900 V capacitors available, ideal for 1200 or 1300 V semiconductors.
Thermal stabilization	Self-balancing capacitor banks: Lowest current through the hottest capacitor.



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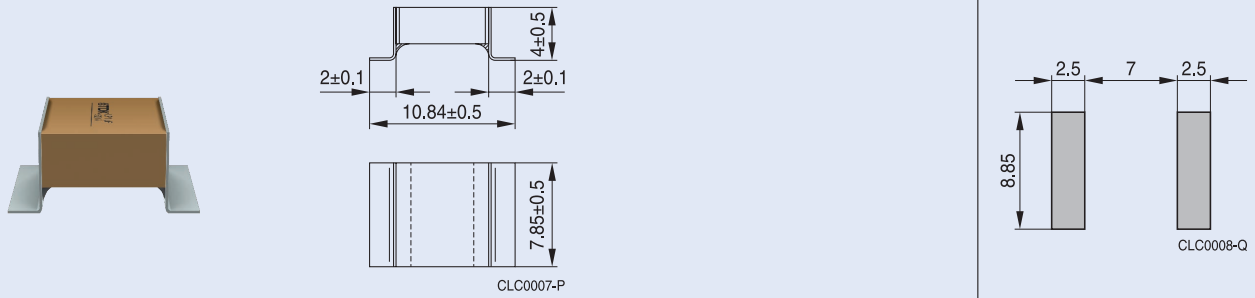
Technical specification										
Types	Ordering code	$C_{nom, typ}$ μF	V_{op} V	V_R V	V_{WS} V	I_{op1} @ 100 kHz, 85 °C A_{RMS}	I_{op2} @ 100 kHz, 105 °C A_{RMS}	ESL nH	Approx. weight g	Packing
Low profile series – LP (L leads)										
	B58031I5105M062	1	400	500	650	11	10	3	1.3	Taped on reel
	B58031I7504M062	0.5	600	700	1000	7	6			Taped on reel
	B58031I9254M062	0.25	800	900	1300	5	5			Taped on reel
Low profile series – LP (J leads)										
	B58031U5105M062	1	400	500	650	11	10	3	1.3	Taped on reel
	B58031U7504M062	0.5	600	700	1000	7	6			Taped on reel
	B58031U9254M062	0.25	800	900	1300	5	5			Taped on reel
Solder pin series – SP										
	B58033I5206M001	20	400	500	650	41	32	4	31	Tube
	B58033I7106M001	10	600	700	1000	33	27			Tube
	B58033I9505M001	5	800	900	1300	26	24			Tube
Flex assembly series										
FA2 	B58035U5205M062	2	400	500	650	17	14	3	2.3	Taped on reel
	B58035U7105M062	1	600	700	1000	12	11			Taped on reel
	B58035U9504M062	0.5	800	900	1300	8	7			Taped on reel
FA3 	B58035U5305M062	3	400	500	650	20	17	3	3.5	Taped on reel
	B58035U7155M062	1.5	600	700	1000	16	13			Taped on reel
	B58035U9754M062	0.75	800	900	1300	11	9			Taped on reel
FA10 	B58035U5106M001	10	400	500	650	47	38	2	11.5	Cardboard box
	B58035U7505M001	5	600	700	1000	39	30			Cardboard box
	B58035U9255M001	2.5	800	900	1300	32	23			Cardboard box

Symbol and terms	
$C_{nom, typ}$ (@ V_{op} , quasistatic, +25 °C)	Typical nominal capacitance
V_R	Rated voltage, reference DC voltage for the reliability tests
V_{op}	Operating voltage, optimized DC voltage in terms of capacitance value
V_{WS}	Withstand voltage, 100% end-of-line test for ≥ 7 seconds

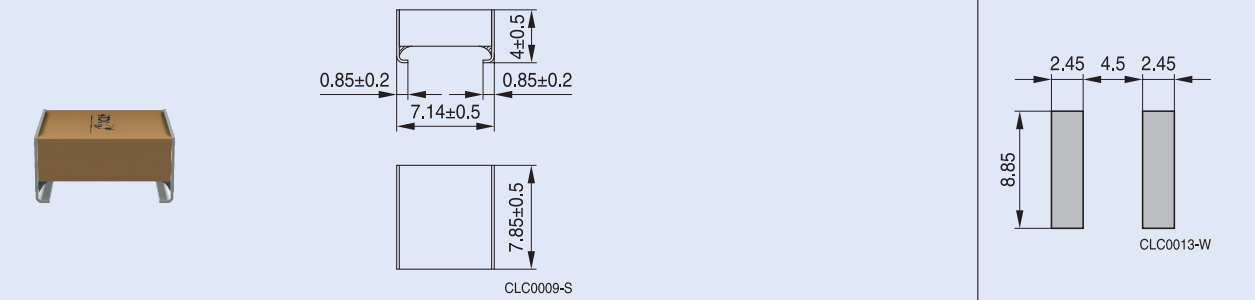
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Dimensional drawings and recommended solder pad layout

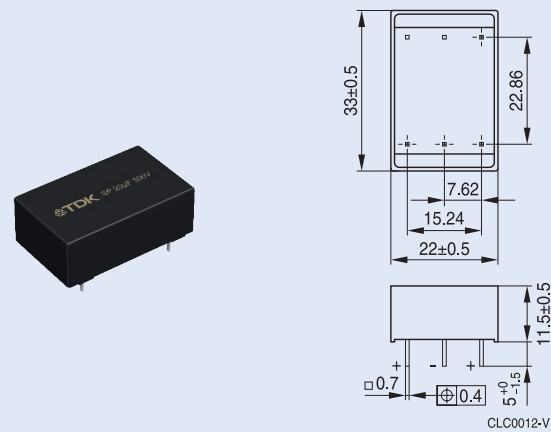
LP series (L leads)



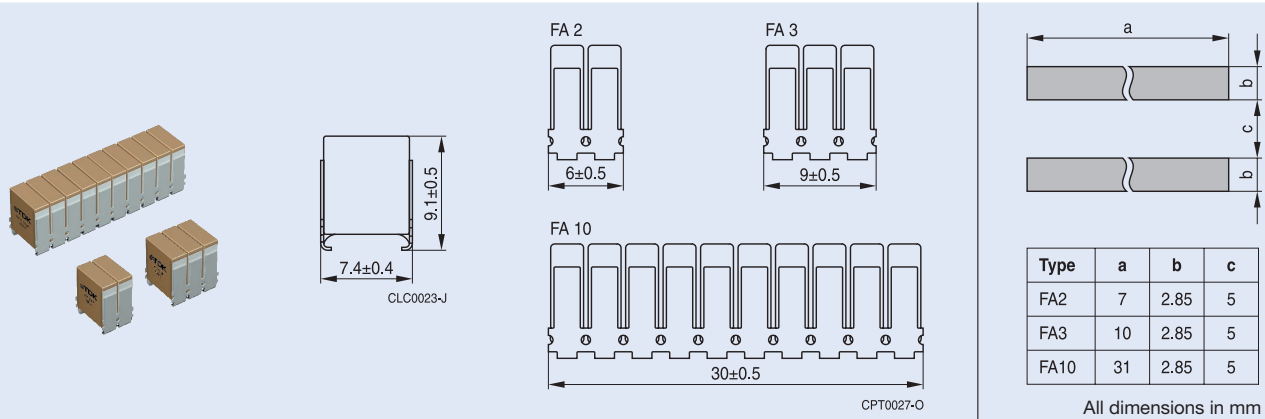
LP series (J leads)



SP series



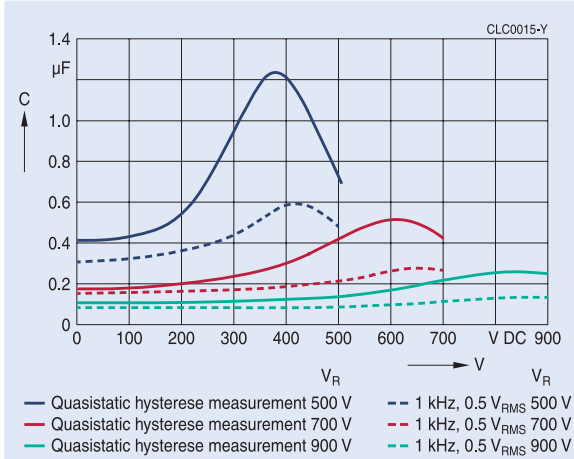
FA series



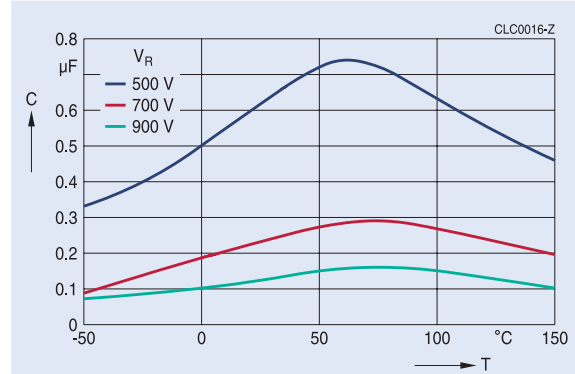
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Example of technical characteristics LP series

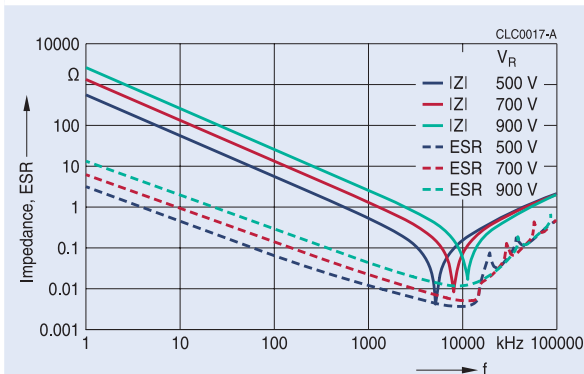
Capacitance versus DC voltage (@ 25 °C)



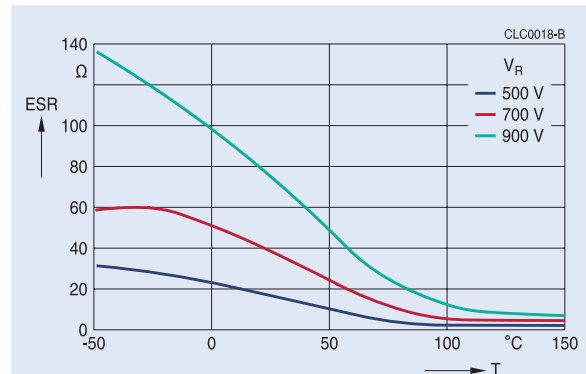
C @ V_{op}, 1 kHz, 0.5 V_{RMS}



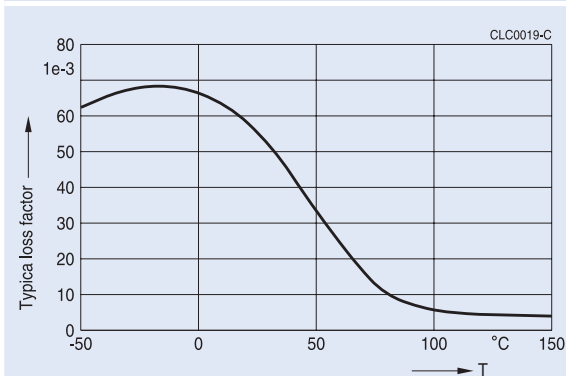
Impedance and ESR versus frequency @ 0 V_{DC}, 25 °C, 0.5 V_{RMS}



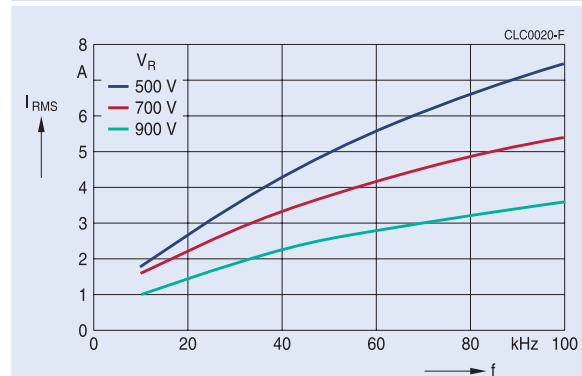
ESR @ V_{op}, 1 kHz, 0.5 V_{RMS}



Loss factor versus temperature @ V_{op}, 1 kHz, 0.5 V_{RMS}



Permissible current @ V_{op}, 85 °C



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