

Ultra Kondensator

ETC-UC-650F

FEATURES AND BENEFITS

- » Shock and Vibration Technology
- » Up to 1,000,000 duty cycles
- » Up to 10 year DC life
- » Highest power and energy

TYPICAL APPLICATIONS

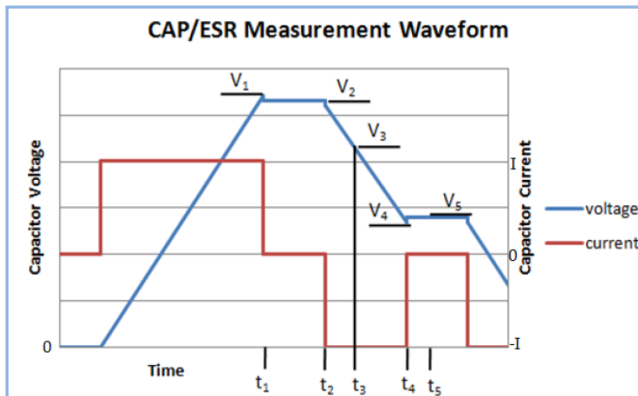
- » High shock and vibration environments
- » Automotive subsystems
- » Wind turbine pitch control
- » Hybrid vehicles
- » Rail
- » Heavy industrial equipment
- » UPS & telecom systems



Electrical	Rated Capacitance ¹	650 F
	Minimum Capacitance, initial ¹	650 F
	Typical Capacitance, initial ¹	690 F
	Maximum Capacitance, initial ¹	780 F
	Typical ESR _{DC} , initial ^{1,2}	1.0 mΩ
	Maximum ESR _{DC} , initial ¹ , rated value	1.5 mΩ
	Test Current for Capacitance and ESR _{DC}	50 A
	Rated Voltage	2.70 V
	Absolute Maximum Voltage ³	2.85 V
	Absolute Maximum Current ¹⁰	440 A
Power & Energy	Leakage Current at 25°C, maximum ^{2,4}	5 mA
	Self-discharge ⁵	≥2.16V
	Minimum Usable Specific Power, P_d^6	4.5 kW/kg
	Typical Usable Specific Power, $P_d^{2,6}$	6.7 kW/kg
	Minimum Impedance Match Specific Power, P_{max}^7	9.3 kW/kg
	Typical Impedance Match Specific Power, $P_{max}^{2,7}$	14.0 kW/kg
	Minimum Specific Energy, E_{max}^8	5.1 Wh/kg
	Typical Specific Energy, $E_{max}^{2,8}$	5.4 Wh/kg
	Minimum Stored Energy, E_{store}^9	0.65 Wh
	Typical Stored Energy, $E_{stor}^{2,9}$	0.70 Wh
Thermal	Thermal Resistance (R_{CA} , Case to Ambient), typic cycles	7.2 °C/W
	Thermal Capacitance (C_{th}), typical	206 J/°C
	Maximum Continuous Current ($\Delta T = 15^\circ C$) ¹¹	40 ARMS
Physical	Maximum Continuous Current ($\Delta T = 40^\circ C$) ¹¹	66 ARMS
	Vibration Specification	QC/T 741-2014
	Shock Specification	ISO 8568-2007
	Mass, typical	≤130g
Terminals	Threaded or Weldable	

Temperature	Operating temperature range (Cell case temperature)	
	Minimum	-40 °C
	Maximum	65 °C
	Stored temperature range (Stored uncharged)	
	Minimum	-40 °C
	Maximum	70 °C
Life	DC Life at High Temperature ¹ (held continuously at Rated Voltage & 65°C)	1500 h
	Capacitance Change (% decrease from rated value)	20%
	ESR Change (% increase from rated value)	100%
	Projected DC Life at 25°C ¹ (25°C, held continuously at Rated Voltage)	10years
	Capacitance Change (% decrease from rated value)	20%
	ESR Change (% increase from rated value)	100%
	Projected Cycle Life at 25°C ^{1,12,13}	1,000,000
	Capacitance Change (% decrease from rated value)	20%
	ESR Change (% increase from rated value)	100%
	Test Current	100A
Shelf Life ¹⁴ Stored uncharged at 25°C	4years	

Notes:



$$V1 = V_{\text{rated}} \quad t2 - t1 = 15 \text{ seconds} \quad \text{Capacitance} = I \times (t4 - t3) / (V3 - V4)$$

$$V3 = 80\% \times V_{\text{rated}} \quad t5 - t4 = 5 \text{ seconds} \quad \text{ESR} = (V5 - V4) / I$$

$$V4 = 0.5 \times V_{\text{rated}}$$

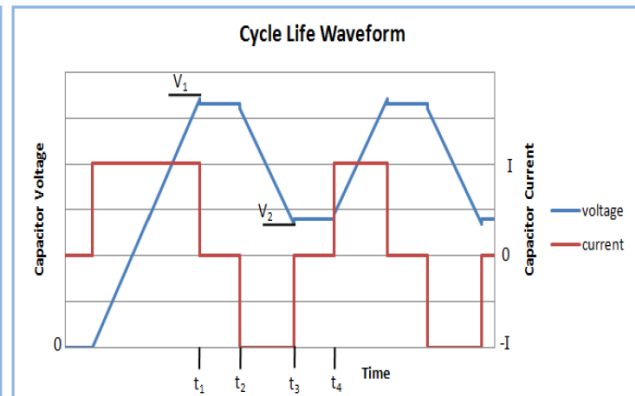
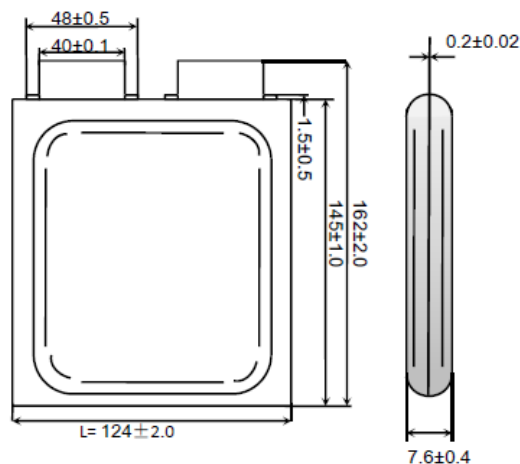
1. Capacitance and ESR DC measured at 25°C using specified test current per waveform above.
2. Typical values represent mean values of a production sample.
3. Absolute maximum voltage, non-repeated. Not to exceed 1 second.
4. After 72 hours at rated voltage. Initial leakage current can be higher.
5. Selfdischarge, Hold rated voltage for 1 hour, Open circuit the cell 72 hours, Measure and record the voltage of cell.
6. Per IEC62391-2, $P_d = 0.12 \text{ V}^2 / (\text{ESR}_{\text{DC}} \times \text{mass})$
7. $P_{\text{max}} = \text{V}^2 / (4 \times \text{ESR}_{\text{DC}} \times \text{mass})$

MOUNTING RECOMMENDATIONS

Do not reverse polarity. Welding without stored energy.

Ultracapacitors 2.7V/350F (Unit: mm)

SSLC2R70650P0



$$V1 = V_{\text{rated}} \quad t2 - t1 = 15 \text{ seconds}$$

$$V2 = 0.5 \times V_{\text{rated}} \quad t4 - t3 = 15 \text{ seconds}$$

8. $E_{\text{max}} = 0.5 \text{ CV}^2 / (3600 \times \text{mass})$
9. $E_{\text{stored}} = 0.5 \text{ C V}^2 / 3600$
10. $I_{\text{max}} (1 \text{ sec}) = 0.5 \text{ CV} / (\text{C} \times \text{ESR} + 1)$
11. $\Delta T = \text{IRMS}^2 \times \text{ESR} \times R_{\text{ca}}$
12. Cycle using specified test current per waveform above.
13. Cycle life varies depending upon application-specific characteristics. Actual results will vary.
14. Capacitance decrease 10% from rated value or ESR_{DC} decrease

MARKINGS

Products are marked with the following information: Rated capacitance, rated voltage, serial number, name of manufacturer, positive terminal, warning marking

Part Description	Dimensions (mm)		
	L (±2.0mm)	W (±2.0mm)	D (±0.4mm)
SSLC2R70650P0	162	124	7.6

Product dimensions are for reference only unless otherwise identified. Product dimensions and specifications may change without notice. Please contact Technologies directly for any technical specifications critical to application.

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