

DATA SHEET

SkelCap
ULTRACAPACITOR

- + Capacitance 300 F
- + Extreme power density
- + Durable and safe aluminum casings
- + PCB solderable terminals
- + High cycle life >1,000,000 cycles
- + RoHS & UL810A compliant
- + In accordance with AEC-Q200



Note: Polarity of the cell is stated as following: center terminal for "-", can and 3-pillar PCB frame for "+".

GENERAL SPECIFICATIONS	VALUE	UNIT
Rated voltage V_R	2.85	V
Surge voltage V_s	3.0	V
Specific energy	5.3	Wh/kg
Nominal specific power	32	kW/kg
Practical specific power	20	kW/kg

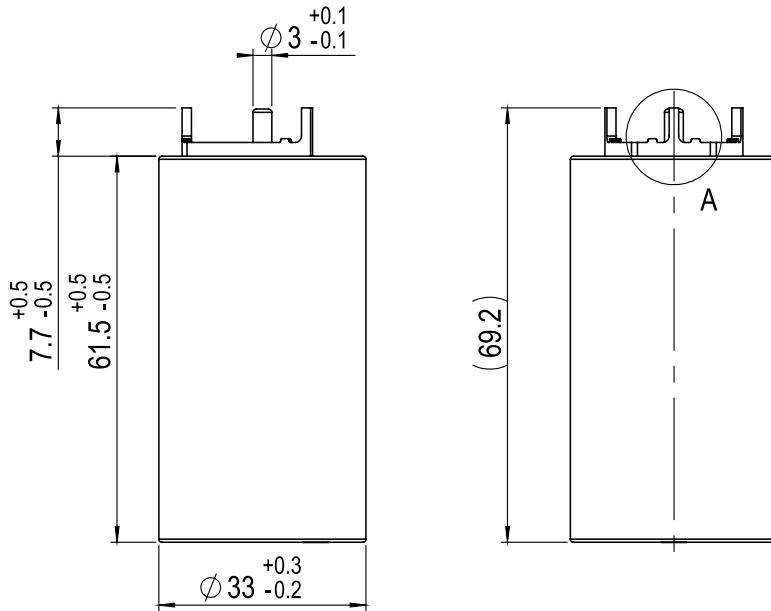
TEMPERATURE AND LIFE	VALUE	UNIT
Operating temperature range		
Minimum	-40	°C
Maximum	+65	°C
Storage temperature range (uncharged)		
Minimum	-40	°C
Maximum	+50	°C
Life		
Lifetime at V_R and +65 °C	1500	Hours
Capacitance decrease 20% against rated value;		
1s ESR increase 100% against rated value		
Storage life @ RT, uncharged	10	Years
Cyclelife @ RT, between V_R and $V_R/2$	1,000,000	Cycles

GENERAL	VALUE	UNIT
V_{Rated}	2.85	V
Rated capacitance	300	F
DC 10ms ESR, rated	1.00	mΩ
DC 1s ESR, rated	1.60	mΩ
Maximum peak current, for 1 second ¹	0.3	kA
Leakage current (at 2.85 V, 25 °C and 72 h, max)	1.5	mA

SAFETY	VALUE	UNIT
Short circuit current	3	kA
ENERGY	VALUE	UNIT
Energy ²	0.34	Wh
Specific energy ³	5.3	Wh/kg
Energy density ⁴	6.4	Wh/L
POWER*	VALUE	UNIT
Nominal power*, calculated from 10 ms ESR (for comparison)		
Specific power, matched Impedance ⁶	32	kW/kg
Power density, matched Impedance ⁷	39	kW/L
Practical power*, calculated from 1 s ESR (for engineering)		
Power, matched impedance ⁵	1.3	kW
Specific power, matched Impedance ⁶	20	kW/kg
Power density, matched impedance ⁷	24	kW/L
STANDARDS AND CERTIFICATIONS		
Vibration Specification	ISO 16750-3 Table 12	
Shock Resistance	IEC60068-2-27 Shock Test	
Certifications	RoHS	
Standards	REACH, UL810A, AEC-Q200	
THERMAL*	VALUE	UNIT
Thermal resistance, R_{ca} , typical	10.8	°C/W
Thermal capacitance, C_{th} , typical	60	J/°C
Max continuous current, $\Delta T = 15^{\circ}C^8$	37	A
Max continuous current, $\Delta T = 40^{\circ}C^8$	61	A
PHYSICAL PARAMETERS	VALUE	UNIT
Mass. Typical	0.064	kg
Volume	0.053	L
Diameter	33	mm
Length	61.5	mm

$$(1) \text{ Maximum peak current (1 sec)} = \frac{\frac{1}{2} CV}{C \times \text{ESR} + 1s} \quad (2) E_{\text{stored}} = \frac{\frac{1}{2} CV^2}{3,600} \quad (3) E_{\text{max}} = \frac{\frac{1}{2} CV^2}{3,600 \times \text{mass}} \quad (4) E_{\text{max}} = \frac{\frac{1}{2} CV^2}{3,600 \times \text{volume}}$$

$$(5) P_{\text{max}} = \frac{V^2}{4 \times \text{ESR}} \quad (6) P_{\text{max}} = \frac{V^2}{4 \times \text{ESR} \times \text{mass}} \quad (7) P_{\text{max}} = \frac{V^2}{4 \times \text{ESR} \times \text{volume}} \quad (8) I_{\text{max}} = \sqrt{\frac{\Delta T}{\text{ESR} \times R_{\text{th}}}}$$



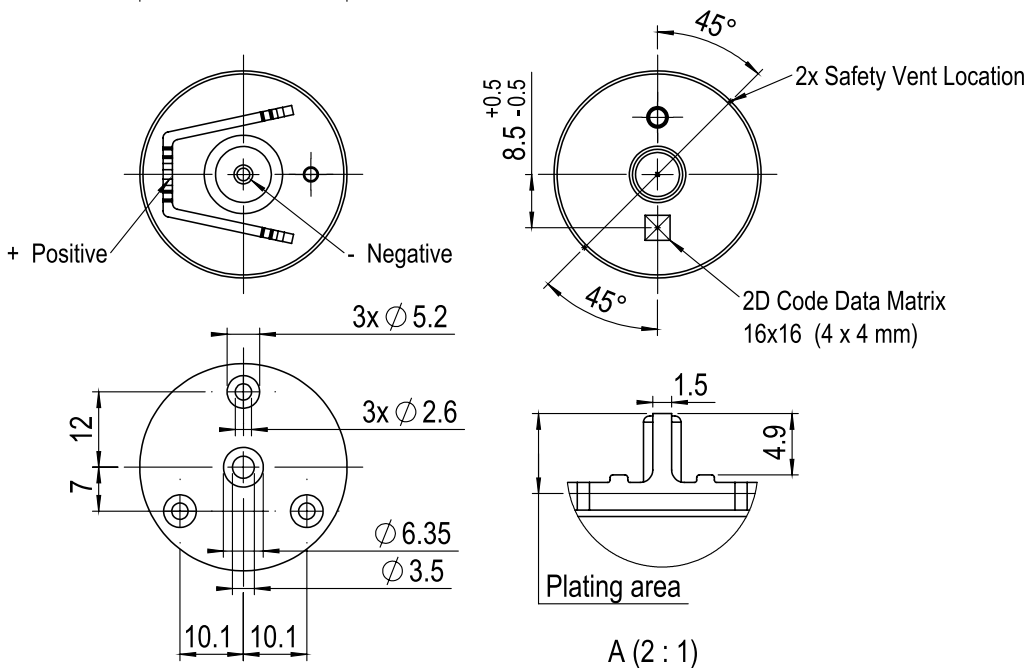
*Power values calculated using DC 10ms ESR \approx AC 100Hz.

Standard markings

- + Name of Manufacturer, Part number, Serial number, Rated voltage
- + Rated capacitance, Negative and positive terminals, Warning marking
- + Total energy in watt-hours

Notes

- + Testing instructions available on www.skeletontech.com
- + All information provided on this data sheet and all subsequent ultra-capacitors sales and testing are subject to Standard Terms of Service (ToS) available on www.skeletontech.com, document *General Terms of Sale for Skeleton Technologies OÜ*.



Board drillings
Board thickness: 1.5-3.2 mm

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