PRELIMINARY DATA SHEET

SkelMod 171V5.8F

+ 171V DC nominal voltage
+ 5.8 F capacitance
+ IP54 protection

General Specifications

Electrical	Value	Unit
Product code		
Rated voltage	171	V
Absolute maximum voltage	180	V
Rated capacitance	5.8	F
DC 5s ESR rated	150	mΩ
Maximum series voltage	750	V
Rated maximum peak current (for 1 s duration) [1, 9]	265	A
Typical short circuit current (For informational purposes - do not use as operating current.)	1.14	kA
Maximum stored energy [2]	23.5	Wh
Cells in total	60	pcs
Capacitance of individual cells	350	F
High-pot capability	2500	VDC

Ultracapacitor management system

Connector	M4
Cell voltage monitoring	At terminal and voltage center tap
Cell voltage management	Passive

Temperature and Life

Operating temperature range*	Value	Unit
Minimum	-40	°C
Maximum	+65	°C

Storage temperature range (uncharged)	Value	Unit
Minimum	-40	°C
Maximum	+50	°C

Life	Value	Unit
Lifetime @ V_R and maximum operating temperature	1500	Hours
Storage life @ RT, uncharged	10	Years
Projected cycle life @ RT, between V_R and V_R / 2	1,000,000	Cycles

Capacitance decrease 20% from rated value; resistance increase 100% from rated value

Power & energy

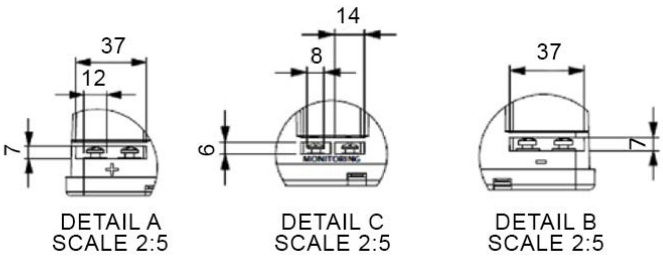
Specific Practical Power, $P_{specific}$ [7]	9.372	kW/kg
Max stored Energy, E_{stored} [2]	23.5	Wh
Specific Energy, $E_{specific}$ [3]	4.5	Wh/kg

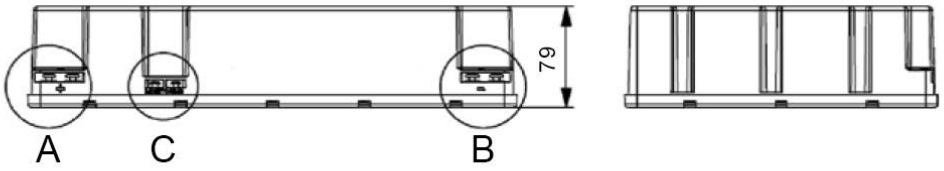
Thermal

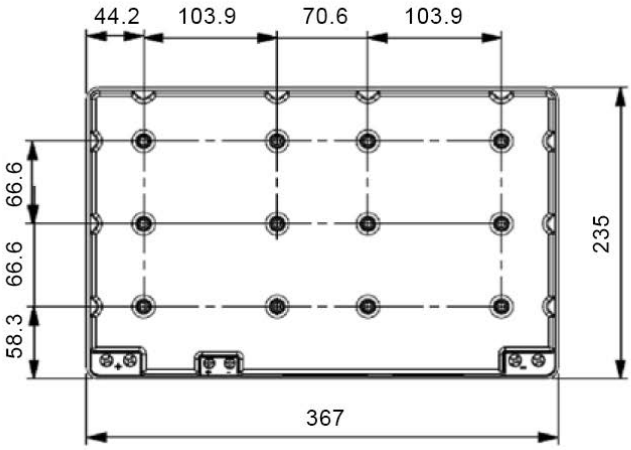
	Value	Unit
Thermal resistance (R_{ca}), typical	1.10	°C/W
Thermal capacitance (C_{th}), typical	4.80	kJ/°C
Max continuous current [10], ΔT = 15°C	9.5	A_{RMS}
Max continuous current [10], ΔT = 40°C	15.5	A_{RMS}

Physical parameters

	Value / Unit
Mass, typical	5.2 kg
Dimensions, L (max), W (max), H (max)	367 x 234 x 79.4 mm
Vibration	IEC60068-2-6
Shock	IEC60068-2-29
Environmental protection	IP54
High-pot capability (duration 60 sec.)	5600 VDC
Recommended torque on power terminals, M5 Thread	4 Nm







(9) The stated maximum peak current should not be exceeded during use. If the limit is to be exceeded by the customer, Skeleton must be consulted beforehand and give approval for the exceeded power load.

(10) These values of current refer to begin of life conditions of the product, for system design 200% ESR should be considered.

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

+ All information provided on this data sheet and all subsequent supercapacitors sales and testing are subject to Standard Terms of Service (ToS) available on www.skeletontech.com, document General Terms of Sale for Skeleton Technologies GmbH

(1) Maximum peak current (1 sec) = $\frac{½\,CV}{C \times ESR + 1s}$ (2) $E_{stored} = \frac{½\,CV^2}{3600}$ (3) $E_{specific} = \frac{E_{stored}}{mass}$

(4) $P_{density} = \frac{P_{max}}{volume}$ (5) $E_{density} = \frac{E_{stored}}{volume}$ (6) $P_{max} = \frac{V^2}{4 \times ESR}$

(7) $P_{specific} = \frac{P_{max}}{mass}$ (8) $R_{th} = \frac{\Delta T}{DC\ 1s\ ESR \times I^2}$