SKELETON TECHNOLOGIES

PRELIMINARY DATA SHEET

SkelMod 171V 5.8F

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

TECHNICAL SPECIFICATIONS	VALUE	UNIT
Electrical		
Rated voltage	171	V
Absolute maximum voltage [1]	180	V
Rated capacitance [2]	5.8	F
DC 5s ESR rated [2]	150	mΩ
Maximum peak current 1 sec [3]	265	V
Short circuit current	1140	A
Maximum stored energy	23.5	Wh
Maximum series voltage	750	V
Capacitance of individual cells	3000	F
Number of cells	60	
High-pot capability [5]	2500	VDC
Life		
Life at 171 V and maximum operating temperature	1500 hours	
Shelf life @ RT, uncharged	10 years	
Projected cycle life @ RT between 171 V and 85.5 V	1 000 000 cycles	
Capacitance decrease 20% from rated value; resistance increase 100% from rated value		
Enviromental conditions		
Operating temperature range	-40 to +65	°C
Storage temperature, uncharged	-40 to +50	°C
Ultracapacitor Management System		
Connector	M4	
Cell voltage monitoring	At terminal and voltage center tap	
Cell voltage management	Passive	
Power & energy		
Impedance Match Specific Power, $P_{specific}$ [6]	9372	W/kg
Specific Energy, $E_{specific}$ [7]	4.5	Wh/kg
Stored Energy, E_{stored} [4]	23.5	Wh
Thermal characteristics		
Thermal resistance, $(R)_{ca}$, typical [8]	1.1	°C/W
Thermal capacitance (C_{th}), typical	4800	J/°C
Maximum continuous current (ΔT = 15 °C) [8]	9.5	A_{RMS}
Maximum Continuous Current (ΔT = 40 °C) [8]	15.5	A_{RMS}

Physical parameters

Weight	5.2	kg
Dimensions (L x W x H, ± 0.7mm)	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

Notes

1. Absolute maximum voltage, non-repeated. Not to exceed 1 second.
2. Current for capacitance and ESR_{DC} 100 A
3. Maximum peak current(1s)= $\frac{C \times {}^1/_2 \times V}{C \times ESR + 1\,s}$
4. $E_{stored} = \frac{1/2\ CV^2}{3600}$
5. Duration = 60 seconds.
   Not intended as an operating paratemer.
6. $P_{specific} = \frac{V^2}{4 \times ESR_{DC} \times mass}$
7. $E_{specific} = \frac{1/2\ CV^2}{3600 \times mass}$
8. $\Delta T = I_{RMS}^2 \times ESR \times R_{ca}$
9. Cycle life varies depending upon applications-specific characteristics. Actual results will vary.
10. Per United Nations material classification UN3499, all Skeleton Technologies ultracapacitors have less than 10 Wh capacity to meet the requirements of Special Provisions 361. Both individual ultrapacitors and modules composed of those ultracapacitors shipped by Skeleton Technologies can be transported without being treated as dangerous goods (hazardous materials) under transportation regulations.

Markings

Products are marked with the following information: rated capacitance, rated voltage, product name, name of manufacturer, positive and negative terminal, serial number.