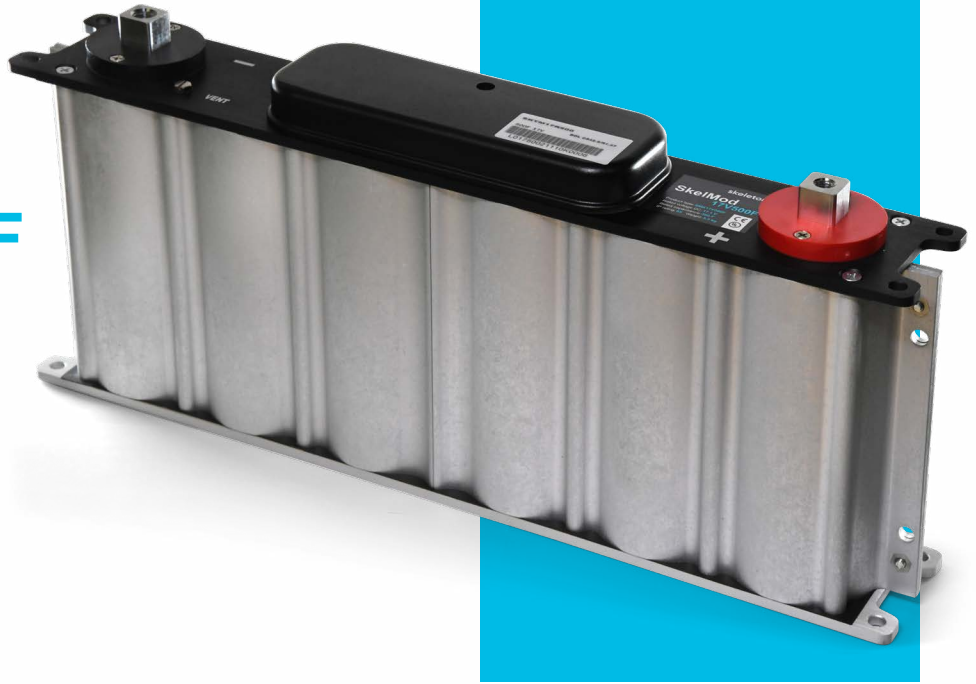


# SkelMod

## 17V500F

- + 17V DC nominal voltage
- + Ultra-low ESR
- + 750V series voltage
- + High power density
- + Passive balancing
- + High power output



General Specifications	Value	Unit
<b>Electrical</b>		
Product code	6730097	
Rated voltage	17	V
Surge voltage <sup>1</sup>	18	V
Rated capacitance <sup>2</sup>	500	F
Initial capacitance	525	F
DC 1s ESR rated	1.86	mΩ
Maximum series voltage	750	V
Rated maximum peak current (for 1 s duration) <sup>1,9</sup>	2202	A
Maximum stored energy	20	Wh
Typical short circuit current (For informational purposes - do not use as operating current.)	9.14	kA
Cells in total	6	pcs
Cell type	SCK3000	F
High-pot capability	2500	VDC

### Supercapacitor management system

Passive balancing

Temperature and Life	Value	Unit
<b>Operating temperature range*</b>		
Minimum	-40	°C
Maximum	+65	°C
<b>Storage temperature range (uncharged)</b>		
Minimum	-40	°C
Maximum	+50	°C

### Life

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

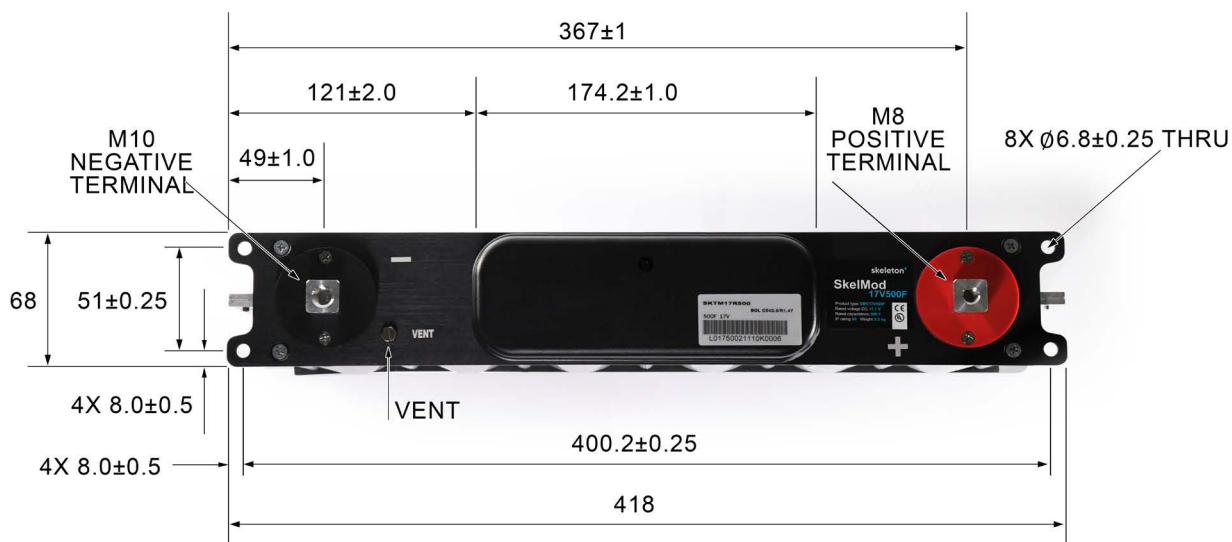
Specific Practical Power, $P_{\text{specific}}^7$	7.06	kW/kg
Max stored Energy, $E_{\text{stored}}^2$	20.0	Wh
Specific Energy, $E_{\text{specific}}^3$	3.6	Wh/kg

## Physical parameters

	Value	Unit
Mass, typical	5.5	kg
Dimensions, L x W x H	418 x 68 x 179 mm	
Power terminals	M8	
Recommended torque - terminal	20/30	Nm
Vibration specification	SAE J2380	
Shock specification	SAE J2464	
Environmental protection	IP54	
Cooling	Natural convection	

## Thermal

	Value	Unit
Thermal resistance ( $R_{ca}$ ), typical	0.7	°C/W
Thermal capacitance ( $C_{th}$ ), typical	4300	J/°C
Max continuous current <sup>10</sup> , $\Delta T = 15^\circ C$	112	$A_{RMS}$
Max continuous current <sup>10</sup> , $\Delta T = 30^\circ C$	159	$A_{RMS}$
Max continuous current <sup>10</sup> , $\Delta T = 40^\circ C$	183	$A_{RMS}$



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

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

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

(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](http://www.skeletontech.com), document General Terms of Sale for Skeleton Technologies GmbH