



## UltraCap<sup>®</sup>

Module  
450 F/ 14 V

**Series/Type:**

**Ordering code:** B48621A4455Q006

**Date:** March 2005

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**Features**

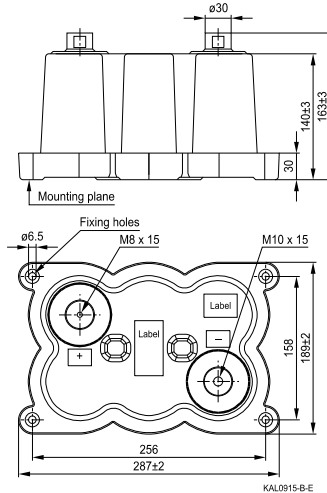
- Screw terminal M8 × 15 (plus), M10 × 15 (minus)
- Active cell voltage balancing
- Case material polyethylene, black
- Power type
- 6 serial single cells of 2700 F
- Maintenance-free
- Short-circuit-proof
- Low ESR due to laser-welded interconnections

**Options**

- Passive cell voltage balancing (by resistor)

**Note**

- Please pay attention to the safety, transport and waste disposal instructions in chapter "Cautions".

**Dimensional drawing**


Dimensions in mm

**Electrical specifications**

Rated capacitance	( $T_A = 25\text{ °C}$ ; DCC) <sup>1)</sup>	$C_R$	450	F
Tolerance of $C_R$			-10/+30	%
Rated voltage	( $T_A = 25\text{ °C}$ )	$V_R$	14	V
Capacity			1800	mAh
Specific power	(IEC 62391-2)		1.6	kW/kg
Specific power	(IEC 62391-2)		1.6	kW/l
Stored energy	( $V = V_R$ )	$E$	44100	J
Specific energy	( $V = V_R$ )		2.0	Wh/kg
Specific energy	( $V = V_R$ )		2.0	Wh/l
Surge voltage		$V_{\text{surge}}$	16	V
Maximum series resistance	( $T_A = 25\text{ °C}$ ; 1 kHz)	ESR	1.4	mΩ
Maximum series resistance	( $T_A = 25\text{ °C}$ ; 50 mHz)	ESR <sub>DC</sub>	2.4	mΩ
Weight			6.0	kg
Volume			6.2	l
Operating temperature range		$T_{\text{op}}$	-30/+70	°C
Storage temperature	( $V = 0\text{ V}$ )	$T_{\text{st}}$	-40/+70	°C
Lifetime (hours) <sup>2)</sup>	( $T_A = 25\text{ °C}$ ; $V = V_R$ )		90000	h
Lifetime (cycles) <sup>3)</sup>	( $T_A = 25\text{ °C}$ ; $I = 100\text{ A}$ )		500000	cycles

1) DCC: discharging with constant current.

 2) Requirements:  $|\Delta C/C_R| \leq 30\%$ ,  $\text{ESR} \leq 2$  times of specified limit,  $I_{\text{leak}} \leq 2$  times of initial value.

 3) Requirements:  $|\Delta C/C_R| \leq 30\%$ ,  $\text{ESR} \leq 2$  times of specified limit,  $I_{\text{leak}} \leq 2$  times of initial value (1 cycle: charging to  $V_R$ , 30 s rest, discharging to  $V_R/2$ , 30 s rest).