



# UltraCap<sup>®</sup>

Module  
9 F/ 28 V

**Series/Type:**  
**Ordering code:** B48611A5903Q012  
**Date:** March 2005

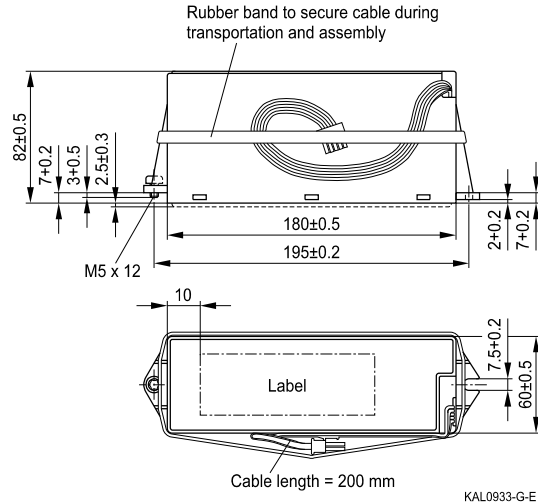
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**Features**

- Cable connector
- Passive cell voltage balancing
- Case material polyethylene, black
- Power type
- 12 serial single cells of 110 F
- Maintenance-free
- Short-circuit-proof
- Fast-acting blowout fuse 20 A

**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>	$C_R$	9	F
Tolerance of $C_R$			-10/+30	%
Rated voltage	( $T_A = 25\text{ °C}$ )	$V_R$	28	V
Capacity			70	mAh
Specific power	(IEC 62391-2)		1.0	kW/kg
Specific power	(IEC 62391-2)		0.9	kW/l
Stored energy	( $V = V_R$ )	E	3528	J
Specific energy	( $V = V_R$ )		1.3	Wh/kg
Specific energy	( $V = V_R$ )		1.1	Wh/l
Surge voltage		$V_{\text{surge}}$	32	V
Maximum series resistance	( $T_A = 25\text{ °C}$ ; 1 kHz)	ESR	60	mΩ
Maximum series resistance	( $T_A = 25\text{ °C}$ ; 50 mHz)	$ESR_{DC}$	120	mΩ
Weight			0.75	kg
Volume			0.9	l
Operating temperature range		$T_{op}$	-30/+70	°C
Storage temperature	( $V = 0\text{ V}$ )	$T_{st}$	-40/+70	°C
Lifetime (hours) <sup>2)</sup>	( $T_A = 25\text{ °C}$ ; $V = V_R$ )		90000	h
Lifetime (cycles) <sup>3)</sup>	( $T_A = 25\text{ °C}$ ; $I = 10\text{ A}$ )		500000	cycles

1) DCC: discharging with constant current.

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

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