

FEATURES AND BENEFITS

- Ultra-low internal resistance
- Highest performance available
- Temperature monitoring
- Over 1,000,000 duty cycles

TYPICAL APPLICATIONS

- Grid/Power quality
- UPS/Backup for heavy machinery
- Wind turbine pitch systems



PRODUCT SPECIFICATIONS

ELECTRICAL

BMOD0094 P075 B02

Rated Capacitance ¹	94 F
Minimum Capacitance, initial ¹	94 F
Maximum ESR _{DC} , initial ¹	13 mΩ
Rated Voltage	75 V
Absolute Maximum Voltage ¹⁴	91 V
Maximum Continuous Current ($\Delta T = 15^{\circ}\text{C}$) ²	48 A _{RMS}
Maximum Continuous Current ($\Delta T = 40^{\circ}\text{C}$) ²	78 A _{RMS}
Maximum Peak Current, 1 second (non repetitive) ³	1,600 A
Leakage Current, maximum (B02 Suffix - Passive Balancing) ⁴	50 mA
Maximum Series Voltage	750 V

TEMPERATURE

Operating Temperature (Ambient temperature)	
Minimum	-40°C
Maximum	65°C
Storage Temperature (Stored uncharged)	
Minimum	-40°C
Maximum	70°C

PRODUCT SPECIFICATIONS (Cont'd)

PHYSICAL

BMOD0094 P075 B02

Mass, typical	25 kg
Power Terminals	M8/M10
Recommended Torque - Terminal	20/30 Nm
Vibration Specification	SAE J2380
Shock Specification	-
Environmental Protection	IP54
Cooling	Natural Convection

MONITORING / CELL VOLTAGE MANAGEMENT

Internal Temperature Sensor	RTD
Temperature Interface	Analog
Cell Voltage Monitoring	N/A
Connector	Harting
Cell Voltage Management	Passive

POWER & ENERGY

Usable Specific Power, P_d^5	2,100 W/kg
Impedance Match Specific Power, P_{max}^6	4,300 W/kg
Specific Energy, E_{max}^7	2.9 Wh/kg
Stored Energy ⁸	73.4 Wh

LIFE

High Temperature¹ (at Rated Voltage & Maximum Operating Temperature)	1,500 hours
Capacitance Change (% decrease from minimum initial value)	20%
ESR Change (% increase from maximum initial value)	100%
Room Temperature¹ (at Rated Voltage & 25°C)	15 years
Capacitance Change (% decrease from minimum initial value)	20%
ESR Change (% increase from maximum initial value)	100%

PRODUCT SPECIFICATIONS (Cont'd)

BMOD0094 P075 B02

Cycle Life ^{1,9}	1,000,000 cycles
Capacitance Change (% decrease from minimum initial value)	20%
ESR Change (% increase from maximum initial value)	100%
Test Current	100 A
Shelf Life ^{1,10} (Stored uncharged up to a maximum storage temperature)	2 years

SAFETY

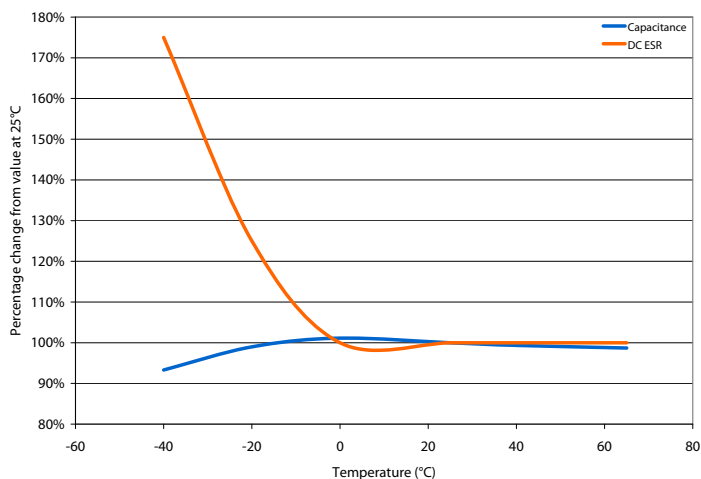
Short Circuit Current, typical (Current possible with short circuit from rated voltage. Do not use as an operating current.)	5,800 A
Factory High-Pot Test ¹³	2,500 V DC
Certifications	RoHS

TYPICAL CHARACTERISTICS

THERMAL CHARACTERISTICS

Thermal Resistance (R_{ma} , Module Case to Ambient), typical	N/A
Thermal Resistance (R_{ca} , All Cell Cases to Ambient), typical	0.50°C/W
Thermal Capacitance (C_{th}), typical ²	19,200 J/°C

ESR AND CAPACITANCE VS TEMPERATURE



NOTES

1. Capacitance and ESR_{DC} measured at 25°C per Document Number 1007239 available at www.maxwell.com.
2. Per Maxwell Document 1007239 available at www.maxwell.com.
3. Maximum Peak current (1 sec) = $\frac{\frac{1}{2} CV}{C \times ESR_{DC} + 1}$
4. After 72 hours at 25°C and rated voltage. Initial leakage current can be higher.
5. Per IEC 62391-2, $P_d = \frac{0.12V^2}{ESR_{DC} \times \text{mass}}$
6. $P_{\text{max}} = \frac{V^2}{4 \times ESR_{DC} \times \text{mass}}$
7. $E_{\text{max}} = \frac{\frac{1}{2} CV^2}{3,600 \times \text{mass}}$
8. $E_{\text{stored}} = \frac{\frac{1}{2} CV^2}{3,600}$
9. Cycle per Document Number 1007239 available at www.maxwell.com.
10. No more than 10% decrease in capacitance from minimum initial capacitance or 50% increase in ESR from maximum initial ESR.
11. Tested at 1 kV DC.
12. For a given application, sufficient cooling must be provided to keep cell case temperatures below 65°. See R_{th} .
13. Duration = 60 seconds. Not intended as an operating parameter.
14. Absolute maximum voltage non repeated, not to exceed 1 second.

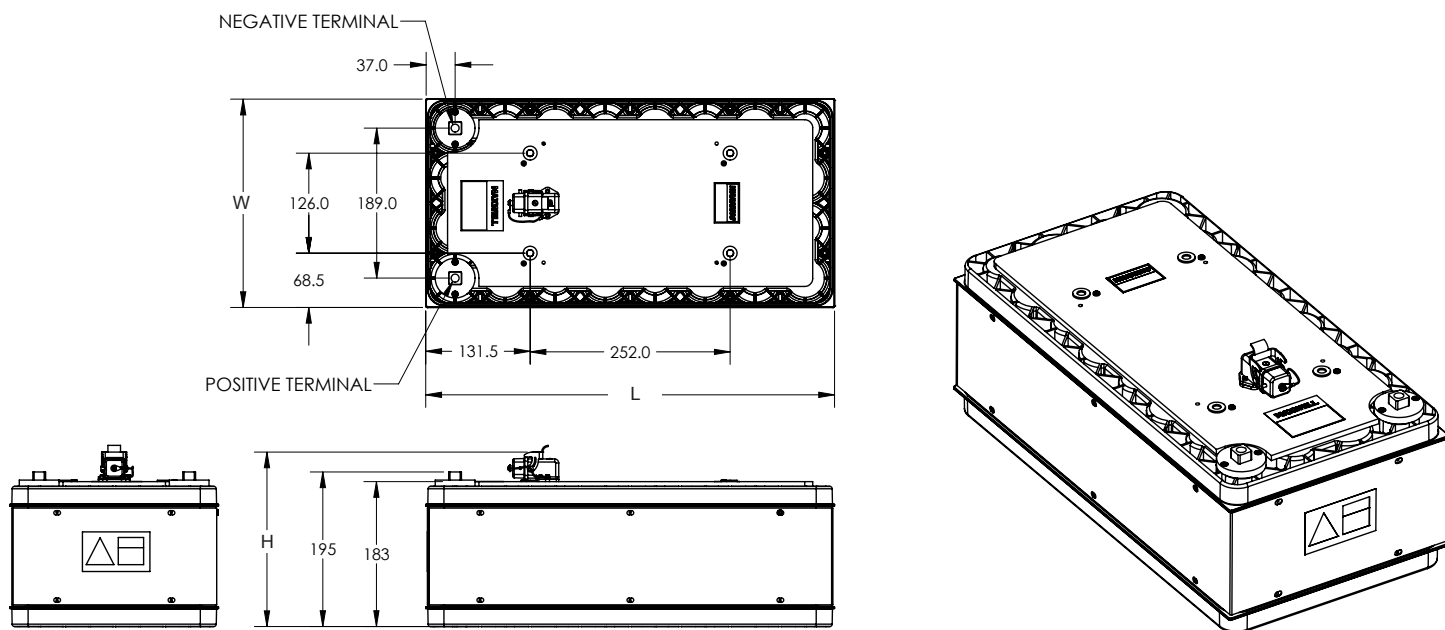
MOUNTING RECOMMENDATIONS

Please refer to the user manual for installation recommendations

MARKINGS

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

BMOD0094 P075



Part Description	Dimensions (mm)			Package Quantity
	L ($\pm 0.3\text{mm}$)	W ($\pm 0.2\text{mm}$)	H ($\pm 0.7\text{mm}$)	
BMOD0094 P075 B02	515	263	220	1

Product dimensions are for reference only unless otherwise identified. Product dimensions and specifications may change without notice. Please contact Maxwell Technologies directly for any technical specifications critical to application. All products featured on this datasheet are covered by the following U.S. patents and their respective foreign counterparts: 7307830, 7203056, 7027290, 7.352.558, 7.295.423, 7.090.946, 7.508.651, 7.492.571, 7.342.770, 6.643.119, 7.384.433, 7.147.674, 7.317.609, 7.495.349, 7.102.877.



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