

**FEATURES AND BENEFITS\***

- Up to 14 year DC life
- 56V DC working voltage
- Resistive cell balancing
- Overvoltage outputs
- High power density
- 4U, half-rack package
- UL registered

**TYPICAL APPLICATIONS**

- UPS systems

**PRODUCT SPECIFICATIONS****ELECTRICAL****BMOD0130 P056 B03**

Rated Capacitance <sup>1</sup>	130 F
Minimum Capacitance, initial <sup>1</sup>	130 F
Maximum Capacitance, initial <sup>1</sup>	156 F
Maximum ESR <sub>DC</sub> , initial <sup>1</sup>	8.1 mΩ
Test Current for Capacitance and ESR <sub>DC</sub> <sup>1</sup>	100 A
Rated Voltage	56 V
Absolute Maximum Voltage <sup>2</sup>	62 V
Absolute Maximum Current	1,900 A
Leakage Current at 25°C, maximum <sup>3</sup>	120 mA
Maximum Series Voltage	750 V
Capacitance of Individual Cells <sup>9</sup>	3,000 F
Stored Energy, Individual Cell <sup>9</sup>	3.0 Wh
Number of Cells	23

**TEMPERATURE**

Operating Temperature (Cell case temperature)	
Minimum	-40°C
Maximum	40°C
Storage Temperature (Stored uncharged)	
Minimum	-40°C
Maximum	70°C

\*Results may vary. Additional terms and conditions, including the limited warranty, apply at the time of purchase. See the warranty details and enclosed information for applicable operating and use requirements.

## PRODUCT SPECIFICATIONS (Cont'd)

## PHYSICAL

BMOD0130 P056 B03

Mass, typical	18 kg
Power Terminals	M8/M10
Recommended Torque - Terminal	20/30 Nm
Vibration Specification	Telcordia GR-63-CORE Zone 4
Shock Specification	N/A
Environmental Protection	IP30
Cooling	Natural Convection

## MONITORING / CELL VOLTAGE MANAGEMENT

Internal Temperature Sensor	N/A
Temperature Interface	N/A
Cell Voltage Monitoring	Overvoltage Alarm
Connector	Deutsch DTM
Cell Voltage Management	Passive

## POWER &amp; ENERGY

Usable Specific Power, $P_d^4$	2,600 W/kg
Impedance Match Specific Power, $P_{max}^5$	5,400 W/kg
Specific Energy, $E_{max}^6$	3.1 Wh/kg
Stored Energy <sup>7</sup>	57 Wh

## SAFETY

Short Circuit Current, typical (Current possible with short circuit from rated voltage. Do not use as an operating current.)	6,900 A
Certifications	RoHS, UL810a (750 V)
High-Pot Capability <sup>10</sup>	4,000 V DC

## TYPICAL CHARACTERISTICS

## THERMAL CHARACTERISTICS

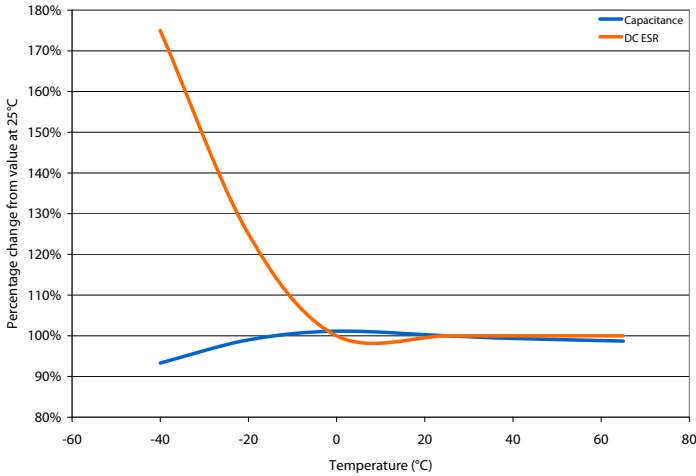
BMOD0130 P056 B03

Thermal Resistance ( $R_{ca}$ , All Cell Cases to Ambient), typical <sup>8</sup>	0.50°C/W
Thermal Capacitance ( $C_{th}$ ), typical	16,000 J/°C
Maximum Continuous Current ( $\Delta T = 15^\circ\text{C}$ ) <sup>8</sup>	61 A, RMS
Maximum Continuous Current ( $\Delta T = 40^\circ\text{C}$ ) <sup>8</sup>	99 A, RMS

## LIFE

DC Life at High Temperature <sup>1</sup> (held continuously at Rated Voltage & Maximum Operating Temperature)	8 years
Capacitance Change (% decrease from minimum initial value)	20%
ESR Change (% increase from maximum initial value)	100%
Projected DC Life at 25°C <sup>1</sup> (held continuously at Rated Voltage)	14 years
Capacitance Change (% decrease from minimum initial value)	20%
ESR Change (% increase from maximum initial value)	100%
Shelf Life (Stored uncharged at 25°C)	4 years

ESR AND CAPACITANCE VS TEMPERATURE



NOTES

1. Capacitance and ESR<sub>DC</sub> measured at 25°C using specified test current per waveform below.
2. Absolute maximum voltage, non-repeated. Not to exceed 1 second.
3. After 72 hours at rated voltage. Initial leakage current can be higher.

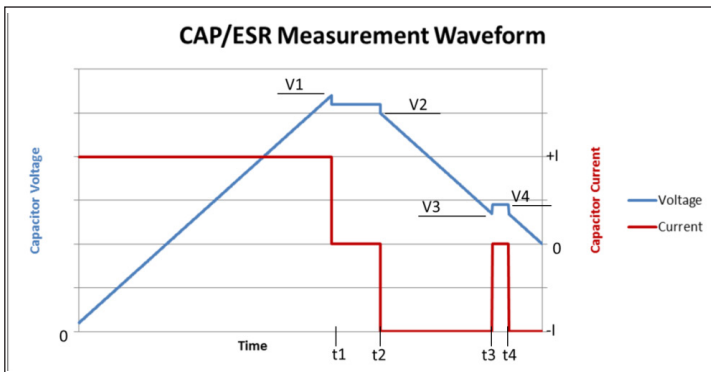
4. Per IEC 62391-2,  $P_d = \frac{0.12V^2}{ESR_{DC} \times mass}$

5.  $P_{max} = \frac{V^2}{4 \times ESR_{DC} \times mass}$

6.  $E_{max} = \frac{1/2 CV^2}{3,600 \times mass}$

7.  $E_{stored} = \frac{1/2 CV^2}{3,600}$

8.  $\Delta T = I_{RMS}^2 \times ESR \times R_{ca}$
9. Per United Nations material classification UN3499, all Maxwell ultracapacitors have less than 10 Wh capacity to meet the requirements of Special Provisions 361. Both individual ultracapacitors and modules composed of those ultracapacitors shipped by Maxwell can be transported without being treated as dangerous goods (hazardous materials) under transportation regulations.
10. Duration = 60 seconds. Not intended as an operating parameter.



$V1 = V_{rated}$        $t2 - t1 = 15 \text{ seconds}$        $Capacitance = I \times (t3 - t2) / (V2 - V3)$   
 $V3 = 0.5 \times V_{rated}$        $t4 - t3 = 5 \text{ seconds}$        $ESR = (V4 - V3) / I$

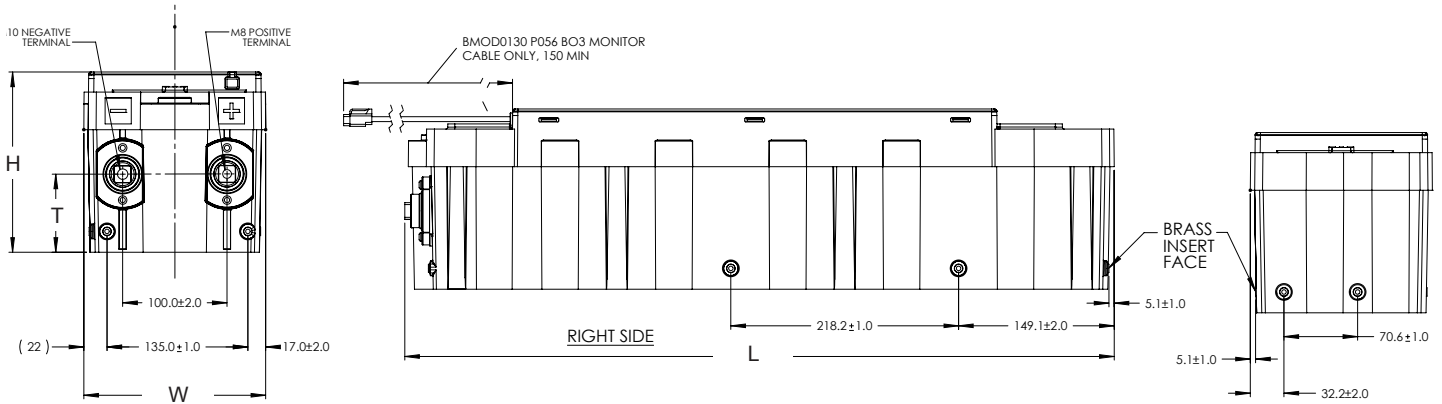
**MOUNTING RECOMMENDATIONS**

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.

**BMOD0130 P056 B03**



Part Description	Dimensions (mm)				Package Quantity
	L (max)	W (max)	H (max)	T (±2mm)	
BMOD0130 P056 B03	683	177	175	74.9	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: 6643119, 7295423, 7342770, 7352558, 7384433, 7440258, 7492571, 7508651, 7791860, 7791861, 7859826, 7883553, 7935155, 8072734, 8098481, 8279580, and patents pending.



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