

## FEATURES AND BENEFITS TYPICAL APPLICATIONS

- 160V DC working voltage
- Passive balancing
- Wind pitch control
- Short-term UPS
- Renewable energy systems



## PRODUCT SPECIFICATIONS

### ELECTRICAL

### BMOD0006 E160 B02

|   |                       |
|---|-----------------------|
| Rated Capacitance <sup>1</sup>  | 5.8 F                 |
| Minimum Capacitance, initial <sup>1</sup>                             | 5.8 F                 |
| Maximum ESR <sub>DC</sub> initial <sup>1</sup>                        | 240 mΩ                |
| Rated Voltage   | 160 V                 |
| Absolute Maximum Voltage <sup>11</sup>                                | 170 V                 |
| Maximum Continuous Current ( $\Delta T = 15\text{ °C}$ ) <sup>2</sup> | 7.0 A <sub>RMS</sub>  |
| Maximum Continuous Current ( $\Delta T = 40\text{ °C}$ ) <sup>2</sup> | 13.0 A <sub>RMS</sub> |
| Maximum Peak Current, 1 second (non-repetitive) <sup>3</sup>          | 200 A                 |
| Leakage Current, maximum (Passive Balancing) <sup>4</sup>             | 25 mA                 |
| Maximum Series Voltage  | 660 V                 |

### TEMPERATURE

|   |       |
|---|-------|
| Operating Temperature (Ambient Temperature) |       |
| Minimum                                     | -40°C |
| Maximum <sup>12</sup>                       | 65°C  |
| Storage Temperature (Stored Uncharged)      |       |
| Minimum                                     | -40°C |
| Maximum                                     | 70°C  |

### PHYSICAL

|   |                    |
|---|--------------------|
| Mass, typical                               | 5.1 kg             |
| Power Terminals                             | M5 Thread          |
| Recommended Torque - Terminal               | 4.0 Nm             |
| Vibration Specification                     | IEC60068-2-6       |
| Shock Specification                         | IEC60068-2-27,-29  |
| Environmental Protection (except terminals) | IP54               |
| Cooling                                     | Natural Convection |

## PRODUCT SPECIFICATIONS (Cont'd)

## MONITORING / CELL VOLTAGE MANAGEMENT

## BMOD0006 E160 B02

|                                   |                    |
|-----------------------------------|--------------------|
| Internal Temperature Sensor       | N/A                |
| Temperature Interface             | N/A                |
| Cell Voltage Monitoring Connector | Voltage Center Tap |
| Cell Voltage Management           | M4                 |
|                                   | Passive            |

## POWER AND ENERGY

|   |           |
|---|-----------|
| Usable Specific Power, $P_d^5$              | 2700 W/kg |
| Impedance Match Specific Power, $P_{max}^6$ | 5600 W/kg |
| Specific Energy, $E_{max}^7$                | 4.0 Wh/kg |
| Stored Energy, $E_{Stored}$                 | 20.6 Wh   |

## LIFE

|  |            |
|--|------------|
| High Temperature <sup>12</sup><br>(at Rated Voltage and Maximum Operating Temperature) | 1500 hours |
| Capacitance Change (% decrease from minimum initial value)                             | 20%        |
| ESR Change (% increase from maximum initial value)                                     | 100%       |
| Room Temperature <sup>1</sup><br>(at Rated Voltage and 25 °C)                          | 10 years   |
| Capacitance Change (% decrease from minimum initial value)                             | 20%        |
| ESR Change (% increase from maximum initial value)                                     | 100%       |
| Shelf Life <sup>1,10</sup><br>(Stored uncharged up to maximum storage temperature)     | 2 years    |

## SAFETY

|  |           |
|--|-----------|
| Short Circuit Current, typical<br>(Current possible with short circuit from rated voltage.<br>Do not use as an operating current.) | 730 A     |
| High-Pot Test <sup>13</sup>  | 5600 V DC |
| Certifications   | RoHS      |

TYPICAL CHARACTERISTICS

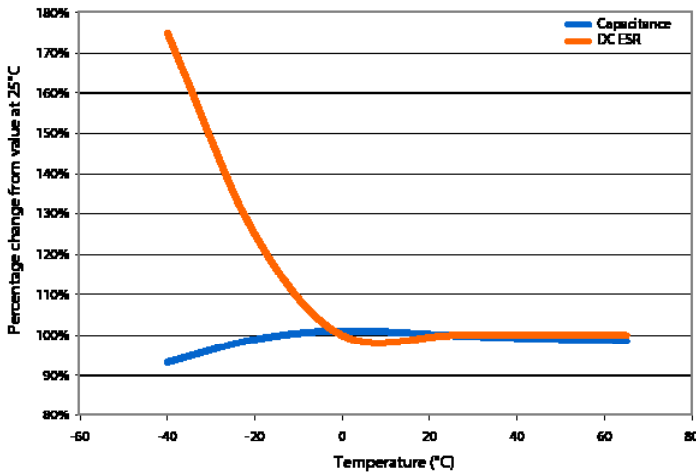
THERMAL CHARACTERISTICS

BMOD0006 E160 B02

Thermal Resistance ( $R_{ma}$  Module Case to Ambient), typical  
 Thermal Resistance ( $R_{ca}$  All Cell Cases to Ambient), typical  
 Thermal Capacitance ( $C_{th}$ ), typical<sup>2</sup>

N/A  
 1.1°C/W  
 4,800 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](http://www.maxwell.com)
2. Per Maxwell Document 1007239 available at [www.maxwell.com](http://www.maxwell.com).
3. Maximum Peak current (1 sec) =  $\frac{1/2 CV}{C \times ESR_{DC} + 1}$
4. After 72 hours at 25 °C and rated voltage. Initial leakage current can be higher.
5. Per IEC 62391-2,  $P_d = \frac{0.12V^2}{ESR_{DC} \times Mass}$
6.  $P_{max} = \frac{V^2}{4 \times ESR_{DC} \times Mass}$
7.  $E_{max} = \frac{1/2 CV^2}{3,600 \times Mass}$

8.  $E_{stored} = \frac{1/2 CV^2}{3,600}$
9. Cycle per Document Number 1007239 available at [www.maxwell.com](http://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. Absolute maximum voltage non repeated, not to exceed 1 second.
12. For a given application, sufficient cooling must be provided to keep cell case temperatures below 65°C. See  $R_{ca}$ .
13. Duration = 60 seconds. Not intended as an operating parameter.

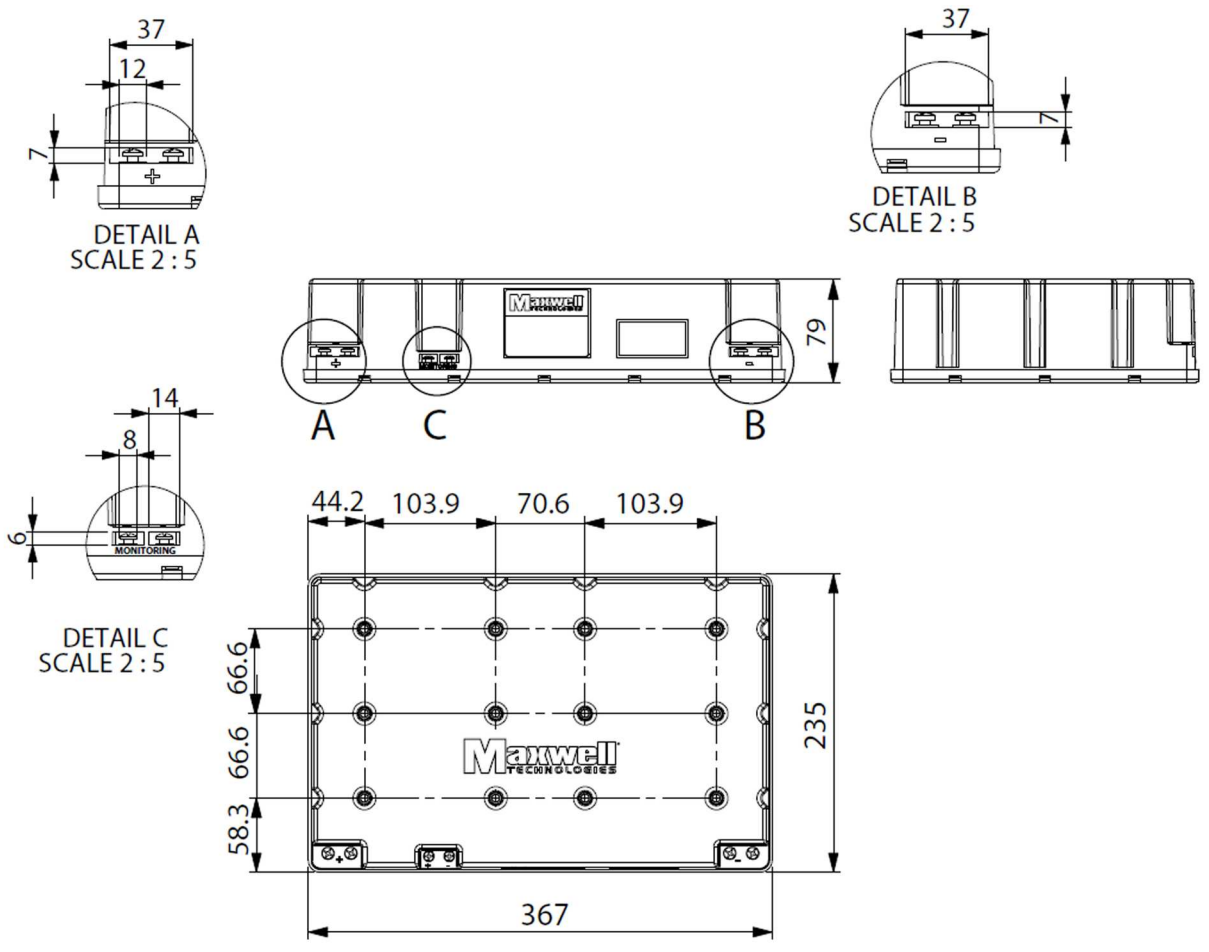
MOUNTING RECOMMENDATIONS

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.

**BMOD0006 E160 B02**



| Part Description  | Dimensions (mm) |            |            | Package Quantity |
|-------------------|-----------------|------------|------------|------------------|
|                   | L (±0.5mm)      | W (±0.2mm) | H (±0.7mm) |                  |
| BMOD0006 E160 B02 | 367             | 235        | 79         | 3                |

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 U.S. patents and their respective foreign counterparts. Patent information can be found at [www.maxwell.com](http://www.maxwell.com).



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