

## FEATURES AND BENEFITS

- 16 V DC working voltage
- Individually balanced cells
- Compact, lightweight system
- Screw terminals

## TYPICAL APPLICATIONS

- Automotive subsystems
- Consumer electronics
- Portable power tools
- Renewable energy systems
- Short term UPS & telecom
- Wind pitch control



## PRODUCT SPECIFICATIONS

### ELECTRICAL

BMOD0058 E016 B02

Rated Capacitance <sup>1</sup>	58 F
Minimum Capacitance, initial <sup>1</sup>	58 F
Maximum ESR <sub>DC</sub> , initial <sup>1</sup>	22 mΩ
Rated Voltage	16 V
Absolute Maximum Voltage <sup>14</sup>	17 V
Maximum Continuous Current ( $\Delta T = 15^{\circ}\text{C}$ ) <sup>2</sup>	12.0 A <sub>RMS</sub>
Maximum Continuous Current ( $\Delta T = 40^{\circ}\text{C}$ ) <sup>2</sup>	19 A <sub>RMS</sub>
Maximum Peak Current, 1 second (non repetitive) <sup>3</sup>	200 A
Leakage Current, maximum (B02 Suffix - Passive Balancing) <sup>4</sup>	25 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

**BMOD0058 E016 B02**

Mass, typical	0.63 kg
Power Terminals	M5 Thread
Recommended Torque - Terminal	4 Nm
Vibration Specification	IEC60068-2-6
Shock Specification	IEC60068-2-27, -29
Environmental Protection	IP54
Cooling	Natural Convection

### MONITORING / CELL VOLTAGE MANAGEMENT

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

### POWER & ENERGY

Usable Specific Power, $P_d^5$	2,200 W/kg
Impedance Match Specific Power, $P_{max}^6$	4,600 W/kg
Specific Energy, $E_{max}^7$	3.3 Wh/kg
Stored Energy <sup>8</sup>	2.1 Wh

### LIFE

<b>High Temperature<sup>1</sup></b> (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%
<b>Room Temperature<sup>1</sup></b> (at Rated Voltage & 25°C)	10 years
Capacitance Change (% decrease from minimum initial value)	20%
ESR Change (% increase from maximum initial value)	100%

## PRODUCT SPECIFICATIONS (Cont'd)

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Cycle Life <sup>1,9</sup>	500,000 cycles
Capacitance Change (% decrease from minimum initial value)	20%
ESR Change (% increase from maximum initial value)	100%
Test Current	35 A
Shelf Life <sup>1,10</sup> (Stored uncharged up to a maximum storage temperature)	2 years

## SAFETY

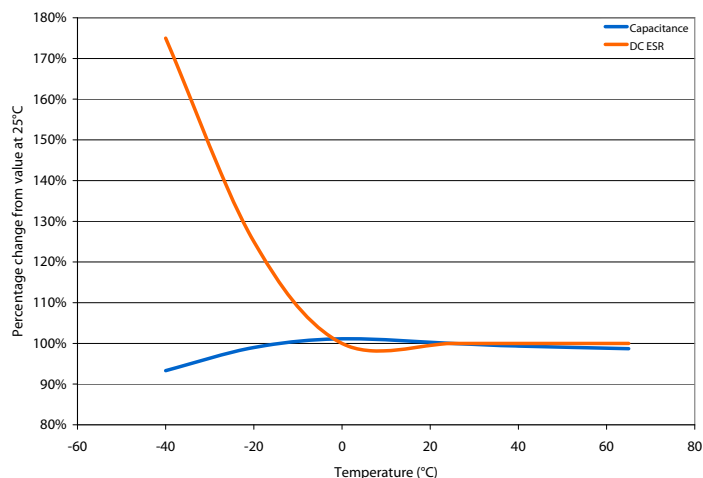
Short Circuit Current, typical (Current possible with short circuit from rated voltage. Do not use as an operating current.)	730 A
Factory High-Pot Test <sup>13</sup>	Not Required
Certifications	RoHS, UL810a (640 Volts)

## 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	4.8°C/W
Thermal Capacitance ( $C_{th}$ ), typical <sup>2</sup>	420 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) =  $\frac{\frac{1}{2} CV}{C \times ESR_{DC} + 1}$
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.  $P_{max} = \frac{V^2}{4 \times ESR_{DC} \times \text{mass}}$
7.  $E_{max} = \frac{\frac{1}{2} CV^2}{3,600 \times \text{mass}}$
8.  $E_{stored} = \frac{\frac{1}{2} CV^2}{3,600}$
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. 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.

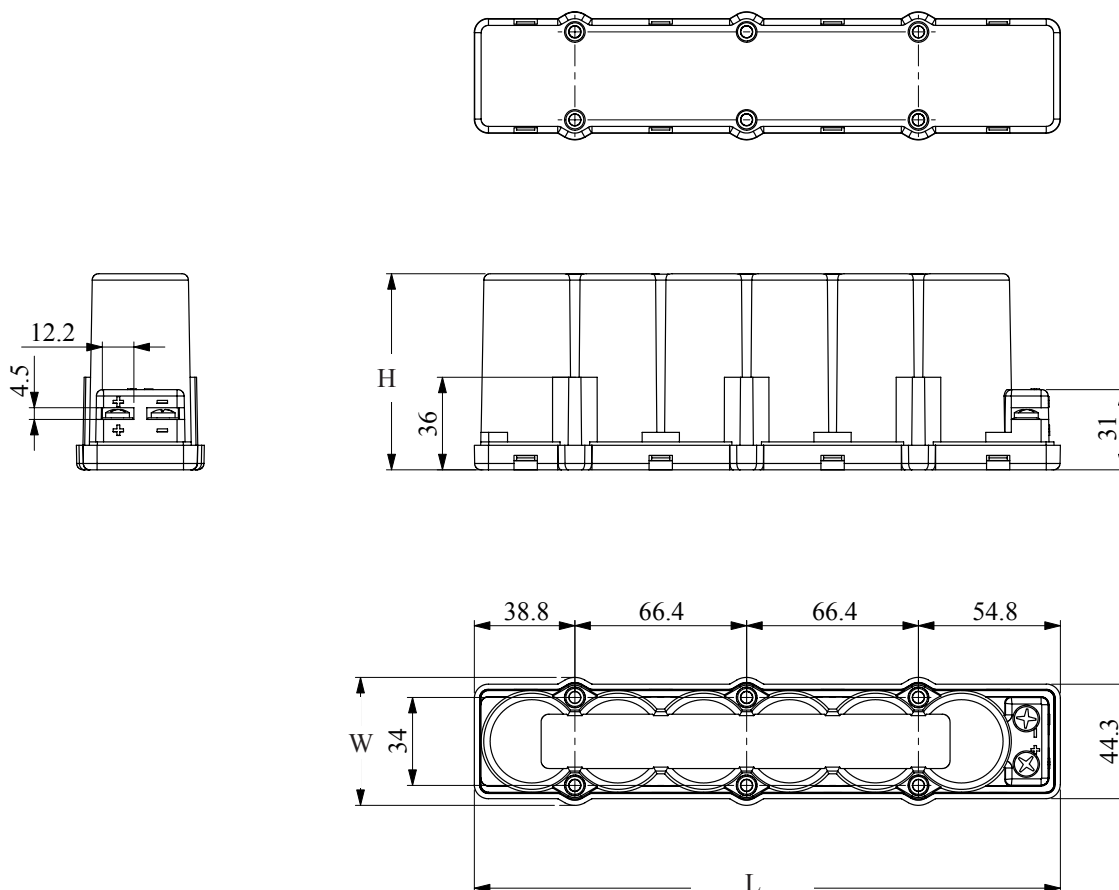
## MOUNTING RECOMMENDATIONS

Recommended mounting screw M4. Maximum torque on mounting screws 4 Nm. All 6 mounting locations must be utilized to meet vibration specifications.

## MARKINGS

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

## BMOD0058 E016



Part Description	Dimensions (mm)			Package Quantity
	L (±0.5mm)	W (±0.5mm)	H (±0.5mm)	
BMOD0058 E016	226.5	49.5	76.0	10

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, 7180726, 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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