

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 ¹ | 58 F |
| Minimum Capacitance, initial ¹ | 58 F |
| Maximum ESR _{DC} , initial ¹ | 22 mΩ |
| Rated Voltage | 16 V |
| Absolute Maximum Voltage ¹⁴ | 17 V |
| Maximum Continuous Current ($\Delta T = 15^\circ\text{C}$) ² | 12.0 A _{RMS} |
| Maximum Continuous Current ($\Delta T = 40^\circ\text{C}$) ² | 19 A _{RMS} |
| Maximum Peak Current, 1 second (non repetitive) ³ | 200 A |
| Leakage Current, maximum (B02 Suffix - Passive Balancing) ⁴ | 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 ⁸ | 2.1 Wh |

LIFE

| | |
|---|-------------|
| High Temperature ¹ (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 Temperature ¹ (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)

BMOD0058 E016 B02

| | |
|--|----------------|
| Cycle Life ^{1,9} | 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 ^{1,10} (Stored uncharged up to a maximum storage temperature) | 2 years |

SAFETY

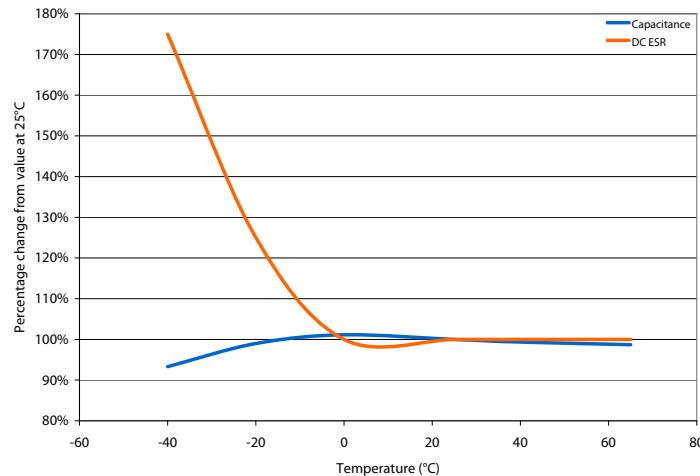
| | |
|---|--------------------------|
| Short Circuit Current, typical (Current possible with short circuit from rated voltage. Do not use as an operating current.) | 730 A |
| Factory High-Pot Test ¹³ | Not Required |
| Certifications | RoHS, UL810a (640 Volts) |

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 ² | 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.
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.

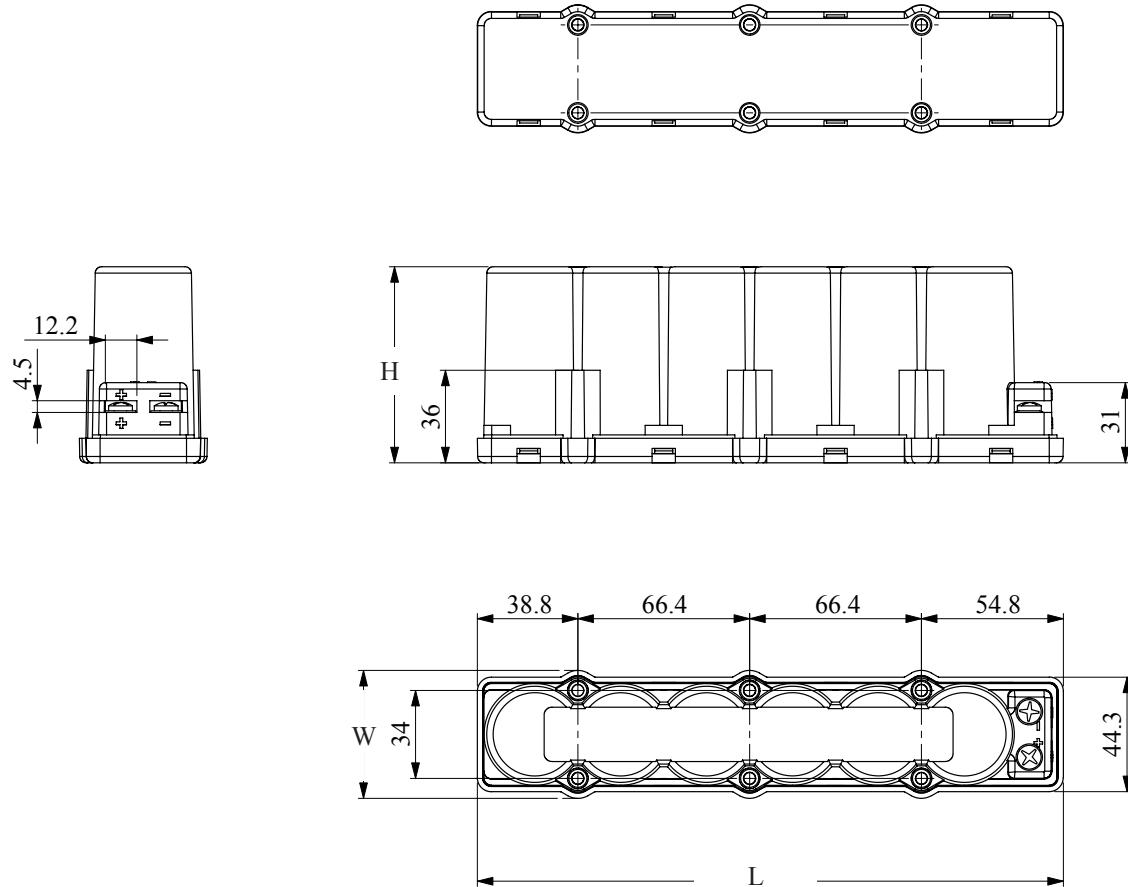
MOUNTING RECOMMENDATIONS

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 | L ($\pm 0.5\text{mm}$) | Dimensions (mm) W ($\pm 0.5\text{m}$) | H ($\pm 0.5\text{mm}$) | Package Quantity |
|------------------|--------------------------|--|--------------------------|------------------|
| 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.



Maxwell Technologies, Inc.
Global Headquarters
5271 Viewridge Court, Suite 100
San Diego, CA 92123
USA
Tel: +1 858 503 3300
Fax: +1 858 503 3301



Maxwell Technologies SA
CH-1728 Rossens
Switzerland
Tel: +41 (0)26 411 85 00
Fax: +41 (0)26 411 85 05



Maxwell Technologies, GmbH
Brucker Strasse 21
D-82205 Gilching
Germany
Tel: +49 (0)8105 24 16 16
Fax: +49 (0)8105 24 16 19



Maxwell Technologies, Inc.
Shanghai Representative Office
13E, CR Times Square
500 Zhangyang Road, Pudong
Shanghai 200122, P.R. China
Tel: +86 21 5836 8780
Fax: +86 21 5836 8790

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