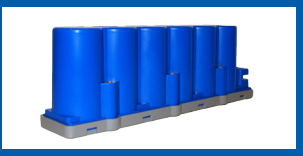
DATASHEET
16V ENERGY SERIES ULTRACAPACITOR MODULES

BMOD0058 E016 B02



FEATURES AND BENEFITS

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

TYPICAL APPLICATIONS

- Automotive subsystems
- Consumer electronics
- Portable power tools
- Renewable energy systems
- Short term UPS and telecom

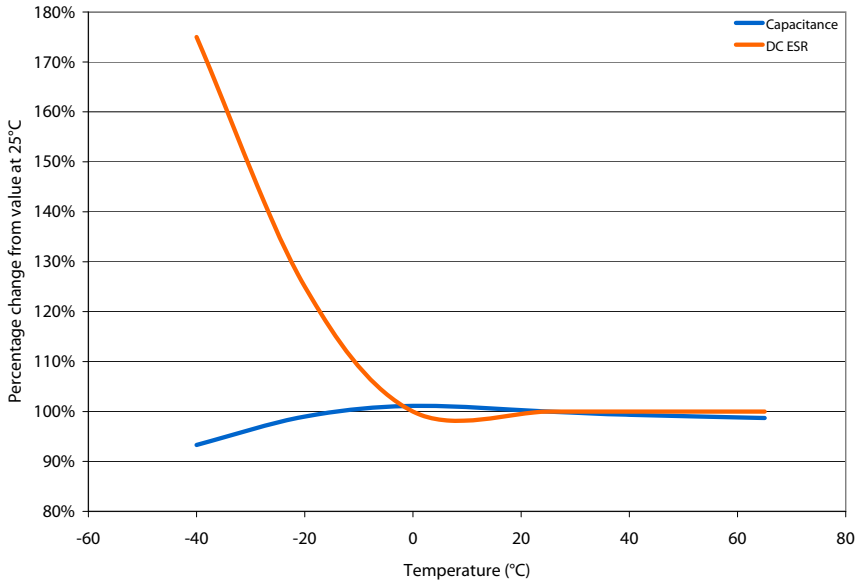
PRODUCT SPECIFICATIONS

ELECTRICAL	
Capacitance	
Nominal capacitance	58 F
Tolerance capacitance	- 0% / +20%
Voltage	
Rated voltage	16 V DC
Resistance	
ESR, DC (max., room temperature)	22 mΩ
ESR, AC (max., room temperature, 1kHz)	10 mΩ
Current	
Maximum continuous current	20 A
Maximum peak current, 1 sec.	204 A
Leakage current (After 72 hours at 25°C. Initial leakage current can be higher.)	50 mA
TEMPERATURE	
Operating temperature range (Cell case temperature)	-40°C to +65°C
Storage temperature range (Stored uncharged)	-40°C to + 70°C
POWER AND ENERGY	
Usable power density, Pd	2,220 W/kg
Usable power	1,400 W
Impedance match power density, Pmax	4,600 W/kg
Gravimetric energy density, Emax	3.3 Wh/kg
Energy available	2.1 Wh

DC LIFESPAN	
Endurance (at rated voltage and temperature)	2,000 hours
Capacitance change (% decrease from rated value)	≤20%
ESR change (% increase from rated value)	≤60%
Life Test (at rated voltage and 20°C)	10 years
Capacitance change (% decrease from rated value)	≤20%
ESR change (% increase from rated value)	≤100%
Cycle Test (Number of cycles)	500,000
Capacitance change (% decrease from rated value)	≤20%
ESR change (% increase from rated value)	≤100%
Shelf Life (Storage uncharged up to maximum storage temperature)	2 years
Capacitance change (% decrease from rated value)	10%
ESR change (% increase from rated value)	50%
CONNECTION	
Power output terminals	M5 Screw
Monitoring and control	N/A
Cell management	Passive
Maximum series voltage	640 V DC
PHYSICAL	
Dimensions	See drawing
Weight	0.63 kg
SAFETY	
Short circuit current (Current possible with short circuit from rated voltage. Do not use as an operating current.)	727 A
Certifications	RoHS
Surge voltage (voltage above this level can cause catastrophic failure)	16.8 V DC
Isolation voltage	2,500 V DC
ENVIRONMENTAL RATINGS	
Degrees of protection	IP54
Vibration resistance	IEC 60068-2-6
Shock resistance	IEC 60068-2-27, -29

TYPICAL CHARACTERISTICS

THERMAL CHARACTERISTICS



ADDITIONAL TECHNICAL INFORMATION

Capacitance and ESR, DC measured per document no. 1007239 available at www.maxwell.com.
Unless specified, all specifications are at 25°C.

Short circuit current (Isc) $= \frac{V_{RATED}}{ESR(DC)}$

Emax $= \frac{½\ CV^2}{3{,}600 \times mass}$

Pmax $= \frac{V^2}{4 \times ESR(DC) \times mass}$

Pd $= \frac{0.12V^2}{ESR(DC) \times mass}$

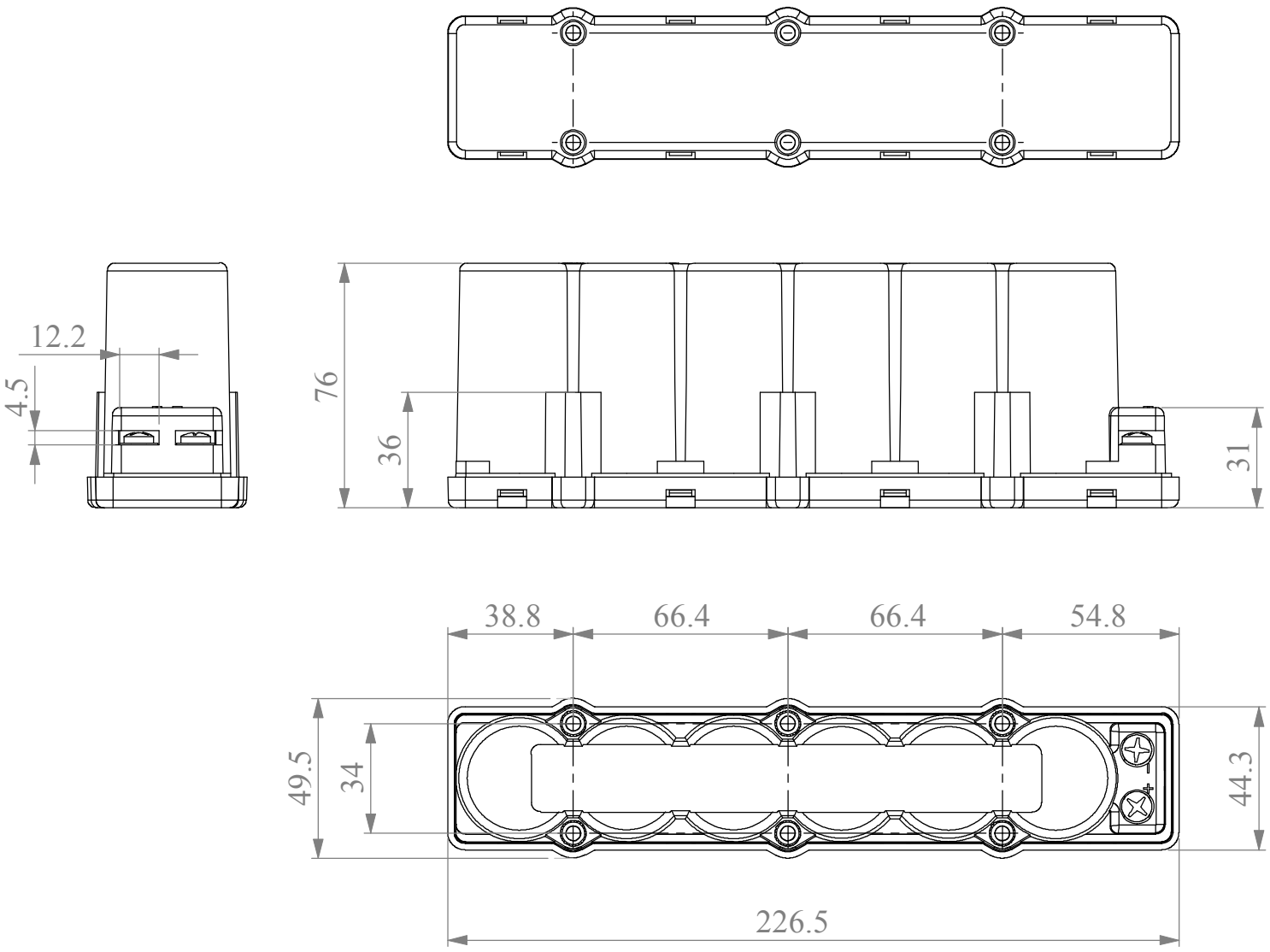
Maximum peak current (1 sec) $= \frac{½\ CV}{C \times ESR(DC) + 1}$

MOUNTING RECOMMENDATIONS

Do not reverse polarity. Mount with M4 screws, 40mm minimum length. Modules are designed to be connected into series or parallel strings. Clean terminals before mounting.

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.



Part Description	Dimensions (mm)			Package Quantity
	L (±0.5mm)	W (±0.5mm)	H (±0.5mm)	
BMOD0058 E016 B02	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.

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