DATASHEET 160V MODULE

FEATURES AND BENEFITS*

- Up to 10 year DC life
- 160V DC working voltage
- Resistive cell balancing
- Compact and light weight package
- Screw terminals

TYPICAL APPLICATIONS

- Wind turbine pitch control
- Small UPS systems
- Small industrial systems

PRODUCT SPECIFICATIONS

ELECTRICAL	BMOD0006 E160 B02
Rated Capacitance[1]	5.8 F
Minimum Capacitance, initial[1]	5.8 F
Maximum Capacitance, initial[1]	7 F
Maximum ESR_{DC}, initial[1]	240 mΩ
Test Current for Capacitance and ESR_{DC}[1]	35 A
Rated Voltage	160 V
Absolute Maximum Voltage[2]	170 V
Absolute Maximum Current	170 A
Leakage Current at 25°C, maximum[3]	25 mA
Maximum Series Voltage	750 V
Capacitance of Individual Cells[9]	350 F
Maximum Stored Energy, Individual Cell[9]	0.35 Wh
Number of Cells	60
TEMPERATURE	
Operating Temperature (Cell Case Temperature)	
Minimum	-40°C
Maximum	65°C
Storage Temperature (Stored Uncharged)	
Minimum	-40°C
Maximum	70°C
PHYSICAL	
Mass, typical	5.2 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

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

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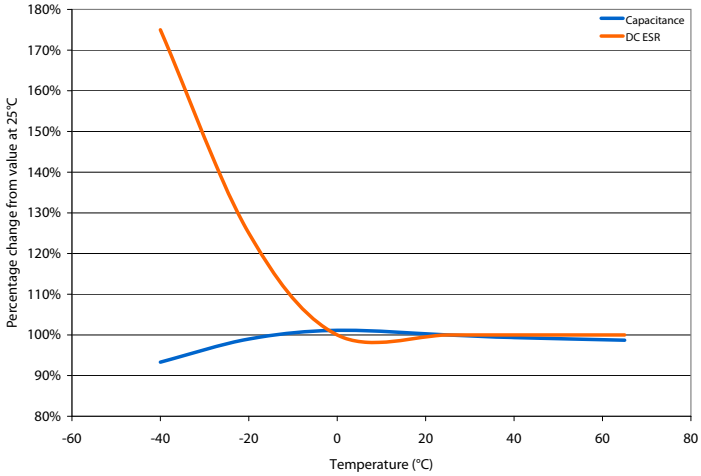
PRODUCT SPECIFICATIONS (Cont'd)

MONITORING / CELL VOLTAGE MANAGEMENT	BMOD0006 E160 B02
Internal Temperature Sensor	N/A
Temperature Interface	N/A
Cell Voltage Monitoring	Voltage Center Tap
Connector	M4
Cell Voltage Management	Passive
POWER AND ENERGY	
Usable Specific Power, P_d [4]	2,500 W/kg
Impedance Match Specific Power, P_{max} [5]	5,100 W/kg
Specific Energy, E_{max} [6]	4 Wh/kg
Stored Energy, E_{stored} [7]	21 Wh
SAFETY	
Short Circuit Current, typical (Current possible with short circuit from rated voltage. Do not use as an operating current.)	670 A
Certifications	RoHS
High-Pot Capability[10]	5,600 VDC

TYPICAL CHARACTERISTICS

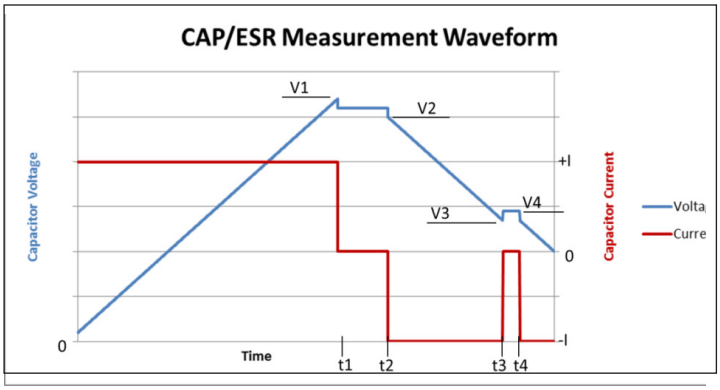
THERMAL CHARACTERISTICS	
Thermal Resistance (R_{ca}, All Cell Cases to Ambient), typical[8]	1.1°C/W
Thermal Capacitance (C_{th}), typical	4,800 J/°C
Maximum Continuous Current (ΔT = 15 °C)[8]	7 A_{RMS}
Maximum Continuous Current (ΔT = 40 °C)[8]	12 A_{RMS}
LIFE	
DC Life at High Temperature[1] (held continuously at Rated Voltage and Maximum Operating Temperature)	1,500 hours
Capacitance Change (% decrease from minimum initial value)	20%
ESR Change (% increase from maximum initial value)	100%
Projected DC Life at 25°C[1] (held continuously at Rated Voltage)	10 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

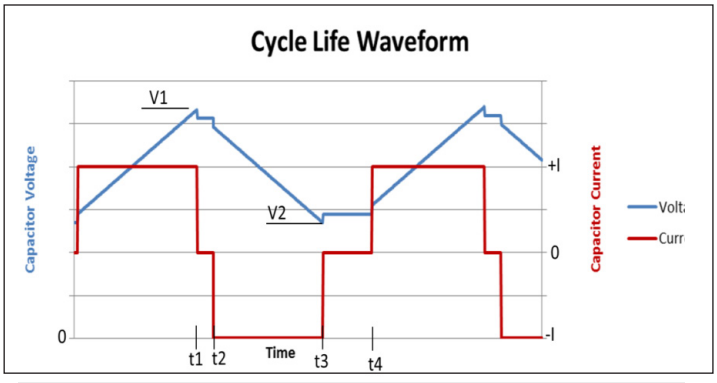


NOTES

1. Capacitance and ESR_{DC} 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. $E_{max} = \frac{½\ CV^2}{3{,}600 \times mass}$
7. $E_{stored} = \frac{½\ CV^2}{3{,}600}$
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 seconds Capacitance = I x (t3-t2)/(V2-V3)
$V3 = 0.5 \times V_{rated}$ t4 - t3 = 5 seconds ESR = (V4 - V3)/I



$V1 = V_{rated}$ t2 - t1 = 5 seconds (I=0)
$V2 = 0.5 \times V_{rated}$ t4 - t3 = 15 seconds (I=0)

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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.

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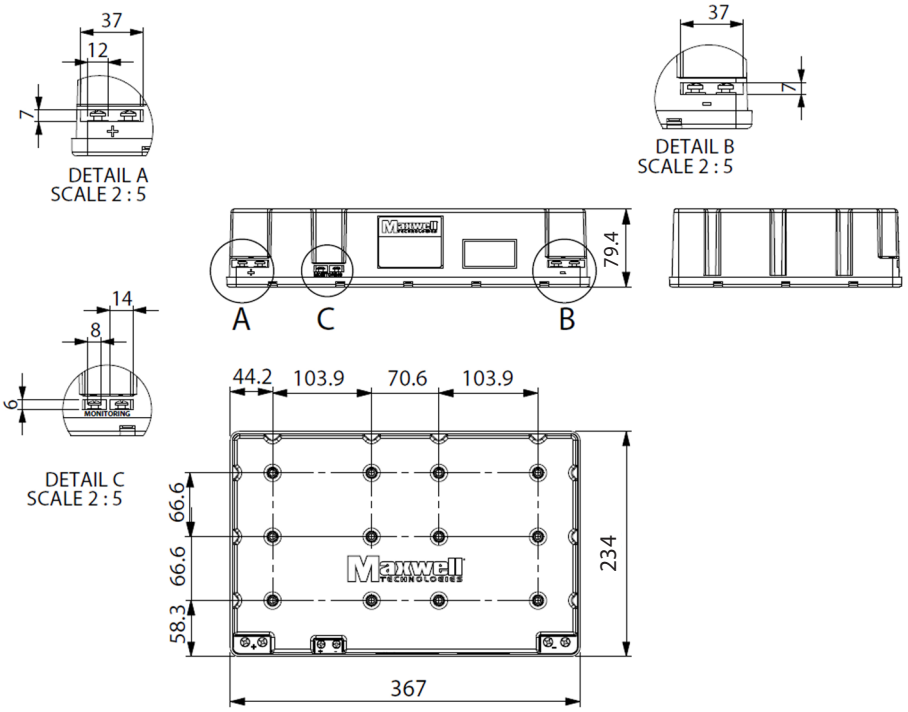

Part Description	Dimensions (mm) L (±0.7mm)	W (±0.7mm)	H (±0.7mm)	Package Quantity
BMOD0006 E160 B02	367.0	234.0	79.4	3

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 the following U.S. patents and their respective foreign counterparts: 6643119, 7295423, 7307830, 7342770, 7352558, 7384433, 7440258 , 7492571, 7508651, 7791860, 7791861, 7859826, 7883553, 7935155, 8072734, 8279580, and patents pending.

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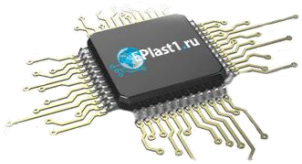
Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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