BMOD0083 P048
BMOD0110 P048
BMOD0165 P048

TYPICAL FEATURES AND BENEFITS

- Ultra-low internal resistance
- Highest power performance available
- Lowest time constant
- 48.6 V operating voltage
- Individually balanced cells
- Over 1,000,000 duty cycles
- Voltage and temperature sensor output included
- Compact, rugged, fully enclosed splash-proof design

TYPICAL APPLICATIONS

- Transportation
- Automotive
- Industrial
- UPS
- Telecommunication

PRODUCT SPECIFICATIONS

CAPACITANCE	BMOD0083	BMOD0110	BMOD0165
Nominal capacitance	80 F	110 F	165 F
Tolerance capacitance	+20% / -5%	+20% / -5%	+20% / -5%
VOLTAGE			
Rated voltage	48.6 V DC	48.6 V DC	48.6 V DC
Surge voltage	50.4 V DC	50.4 V DC	50.4 V DC
Maximum operating voltage	750 V DC	750 V DC	750 V DC
Isolation voltage	2,500 V DC	2,500 V DC	2,500 V DC
RESISTANCE			
ESR, DC Max., room temperature	12.3 mΩ	8.1 mΩ	7.1 mΩ
Resistance tolerance	Max.	Max.	Max.
Thermal resistance (Rth)	0.39°C/W	0.30°C/W	0.25v
TEMPERATURE			
Operating temperature range	-40°C to +65°C	-40°C to +65°C	-40°C to +65°C
Storage temperature range	-40°C to +70°C	-40°C to +70°C	-40°C to +70°C
Temperature characteristics			
Capacitance change % at 25° C (at -40°C)	± 5%	± 5%	± 5%
Internal resistance change % at 25° C (at -40°C)	± 150%	± 150%	± 150%
POWER			
Pd	2,000 W/kg	2,900 W/kg	3,200 W/kg
Pmax	5,400 W/kg	8,800 W/kg	7,900 W/kg
ENERGY			
Emax	2.48 Wh/kg	3.01 Wh/kg	3.81 Wh/kg
LIFESPAN			
Endurance After 1,500 hours application of rated voltage at 65°C. Within % of initial specified value.			
Capacitance change	<20% decrease	<20% decrease	<20% decrease
Internal resistance change	<60% increase	<60% increase	<60% increase

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PRODUCT SPECIFICATIONS (cont.)

	BMOD0083	BMOD0110	BMOD0165
Life test At rated voltage and 25°C.	10 years	10 years	10 years
Capacitance change % of rated value	30% decrease	30% decrease	30% decrease
Internal resistance % of rated value	150% increase	150% increase	150% increase
Shelf Life	After 1,500 hours storage at 65°C without load shall meet specification for endurance.		
LIFE CYCLE			
Cycles Between specified voltage and half rated voltage under constant current at 25°C.	1,000,000	1,000,000	1,000,000
Capacitance change	30% decrease	30% decrease	30% decrease
Internal resistance	150% increase	150% increase	150% increase
CURRENT			
Leakage current After 72 hours at 25°C. Initial leakage current can be higher.	3 mA	4.2mA	5.2 mA
Short circuit current (Isc) **CAUTION:** C urrent possible with short circuit from UR. Do not use as an operating current.	4,700 A	6,000 A	6,900 A
Maximum continuous current	115 A	125 A	150 A
Maximum peak current, 1 sec 1 second, 10% duty cycle	1,080 A	1,410 A	1,850 A
CONNECTION			
Terminal	+ M8 x1.25/ - M10 x1.5	+ M8 x1.25/ - M10 x1.5	+ M8 x1.25/ - M10 x1.5
MONITORING			
Balancing	VMS (Voltage Management System)	VMS (Voltage Management System)	VMS (Voltage Management System)
Fan voltage	N/A	N/A	N/A
Thermal monitoring	NTC	NTC	NTC
SIZE			
Dimensions	See drawing	See drawing	See drawing
Volume	8.5 L	9.7 L	12.6 L
Weight	11 kg	12 kg	14.2 kg
RATINGS			
Environmental resistance	IP65	IP65	IP65
Vibration resistance	SAE J2380	SAE J2380	SAE J2380

ADDITIONAL TECHNICAL INFORMATION

Capacitance and ESR, DC measured per document no. 1007239, available at www.maxwell.com.

I_c = leakage current after 72 hours at 25°C

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

R_{th} = thermal resistance

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

$$Pmax = \frac{\frac{V^2}{4R\ (1khz)}}{mass}$$

$$Emax = \frac{\frac{1}{2}\ CV^2}{3{,}600 \times mass}$$

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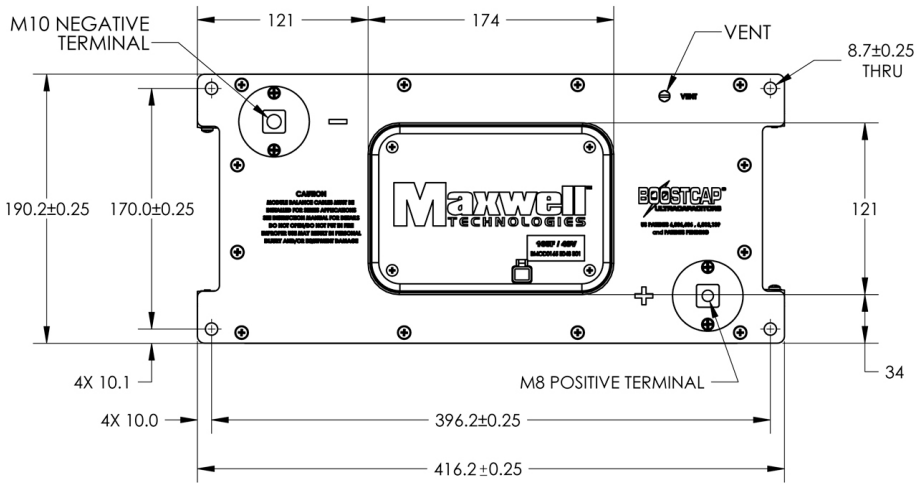

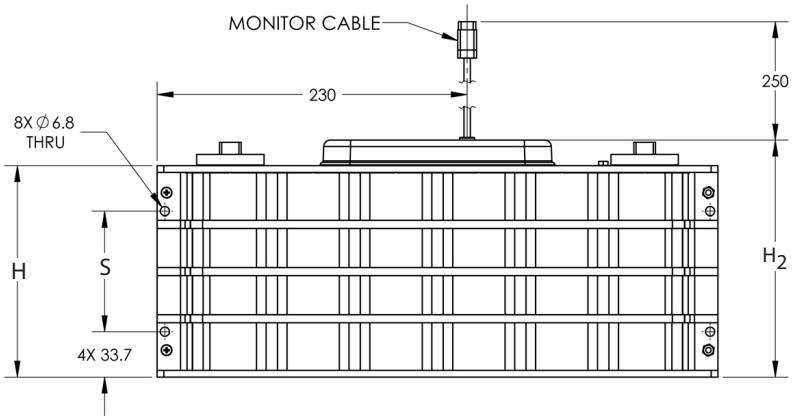

DIMENSIONS (mm)

Part number	L (±0.25mm)	W (±0.25mm)	H (±0.25mm)	H_2 (±0.25mm)	s (±0.5mm)
BMOD0083 P048	416.2	190.2	103.2	126	53.7
BMOD0110 P048	416.2	190.2	120.2	143	70.7
BMOD0165 P048	416.2	190.2	156.7	180	89.3

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.

MOUNTING RECOMMENDATIONS

Modules can be secured at 8 locations, 4 front face and/or 4 bottom face, at provided holes for M8 bolt. Follow user manual instructions for terminal, balance and output connections.

MARKINGS

Modules 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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