BOOSTCAP® ULTRACAPACITOR

FEATURES AND BENEFITS

- CAN bus digital monitoring and communications
- Highest power performance available
- Over 1,000,000 duty cycles
- Temperature and voltage monitoring
- Ultra-low resistance

TYPICAL APPLICATIONS

- Buses
- Electric trains and trolleys
- Heavy duty transportation
- Cranes, RTGS
- Utility vehicles
- Mining equipment

PRODUCT SPECIFICATIONS

ELECTRICAL	BMOD0063 P125 B04/B08	BMOD0063 P125 B03
Rated Capacitance[1]	63 F	63 F
Minimum Capacitance, initial[1]	63 F	63 F
Maximum ESR $_{DC,}$ initial[1]	18 mΩ	18 mΩ
Rated Voltage	128 V	128 V
Absolute Maximum Voltage[15]	136 V	136 V
Maximum Continuous Current (ΔT = 15°C)[2]	140 A_{RMS}	140 A_{RMS}
Maximum Continuous Current (ΔT = 40°C)[2]	240 A_{RMS}	240 A_{RMS}
Maximum Peak Current, 1 second [3]	1,900 A	1,900 A
Leakage Current, maximum (VMS 2.0)[4]	10 mA	10 mA
Leakage Current, maximum (Passive Balancing)[4]	N/A	N/A
Maximum Series Voltage	1,500 V	1,500 V
TEMPERATURE		
Operating Temperature (Ambient temperature)		
Minimum	-40°C	-40°C
Maximum	65°C	65°C
Storage Temperature (Stored uncharged)		
Minimum	-40°C	-40°C
Maximum	70°C	70°C

Maxwell® TECHNOLOGIES

PRODUCT SPECIFICATIONS (Cont'd)

PHYSICAL	BMOD0063 P125 B04/B08	BMOD0063 P125 B03
Mass, typical[13]	60.5 kg	60.5 kg
Power Terminals	Radsok	Radsok
Recommended Torque - Terminal	N/A	N/A
Vibration Specification	ISO16750-3 Table 14	ISO16750-3 Table 14
Shock Specification	SAE J2464	SAE J2464
Environmental Protection	IP65	IP65
Cooling	Forced Air	Forced Air
MONITORING / CELL VOLTAGE MANAGEMENT		
Internal Temperature Sensor	RTD	RTD
Temperature Interface	Serial Data (CAN)	Analog
Cell Voltage Monitoring	Group Voltage (CAN)	Analog
Connector	Deutsch DTM	5 Pin
Cell Voltage Management	VMS 2.0	VMS 2.0
POWER & ENERGY		
Usable Specific Power, P_d[5]	1,800 W/kg	1,800 W/kg
Impedance Match Specific Power, P_{max}[6]	3,800 W/kg	3,800 W/kg
Specific Energy, E_{max}[7]	2.4 Wh/kg	2.4 Wh/kg
Stored Energy[8]	143.4 Wh	143.4 Wh
LIFE		
High Temperature[1] (at Rated Voltage & Maximum Operating Temperature)	1,500 hours	1,500 hours
Capacitance Change (% decrease from minimum initial value)	20%	20%
ESR Change (% increase from maximum initial value)	100%	100%
Room Temperature[1] (at Rated Voltage & 25°C)	10 years	10 years
Capacitance Change (% decrease from minimum initial value)	20%	20%
ESR Change (% increase from maximum initial value)	100%	100%
Cycle Life[1,9]	1,000,000 cycles	1,000,000 cycles
Capacitance Change (% decrease from minimum initial value)	20%	20%
ESR Change (% increase from maximum initial value)	100%	100%
Test Current	100 A	100 A

PRODUCT SPECIFICATIONS (Cont'd)

	BMOD0063 P125 B04/B08	BMOD0063 P125 B03
Shelf Life[1,10] (Stored uncharged up to a maximum storage temperature)	2 years	2 years

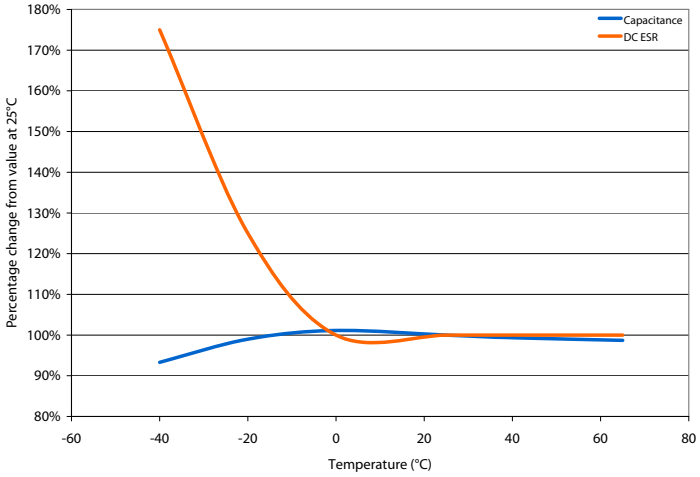
SAFETY

Short Circuit Current, typical (Current possible with short circuit from rated voltage. Do not use as an operating current.)	7,100 A	7,100 A
Factory High-Pot Test[14]	4,000 V DC	4,000 V DC
Certifications	RoHS, eMark 72/245/EEC, UN10.03 (B08 only)	RoHS

TYPICAL CHARACTERISTICS

THERMAL CHARACTERISTICS

Thermal Resistance ($R_{cm,}$ One Cell Case to Module Case), typical[2]	1°C/W	1°C/W
Thermal Resistance ($R_{ma,}$ Modulel Case to Ambient), typical	0.01°C/W	0.01°C/W
Thermal Resistance ($R_{ca,}$ All Cell Cases to Ambient), typical	0.04°C/W	0.04°C/W
Thermal Capacitance (C_{th}), typical [2]	33,370 J/°C	33,370 J/°C



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) = $\frac{½\ CV}{C \times ESR_{DC} + 1}$
4. After 72 hours at 25°C and rated voltage. Initial leakage current can be higher.
5. Per IEC 62391-2, $P_d = \frac{0.12V^2}{ESR_{DC} \times mass}$
6. $P_{max} = \frac{V^2}{4 \times ESR_{DC} \times mass}$
7. $E_{max} = \frac{½\ CV^2}{3{,}600 \times mass}$
8. $E_{stored} = ½\ CV^2$
9. Cycle per Document Number 10007239 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. Without fan. With fan, mass is 63.4 kg.
14. Duration = 60 seconds. Not intended as an operating parameter.
15. Absolute maximum voltage non repeated, not to exceed 1 second.

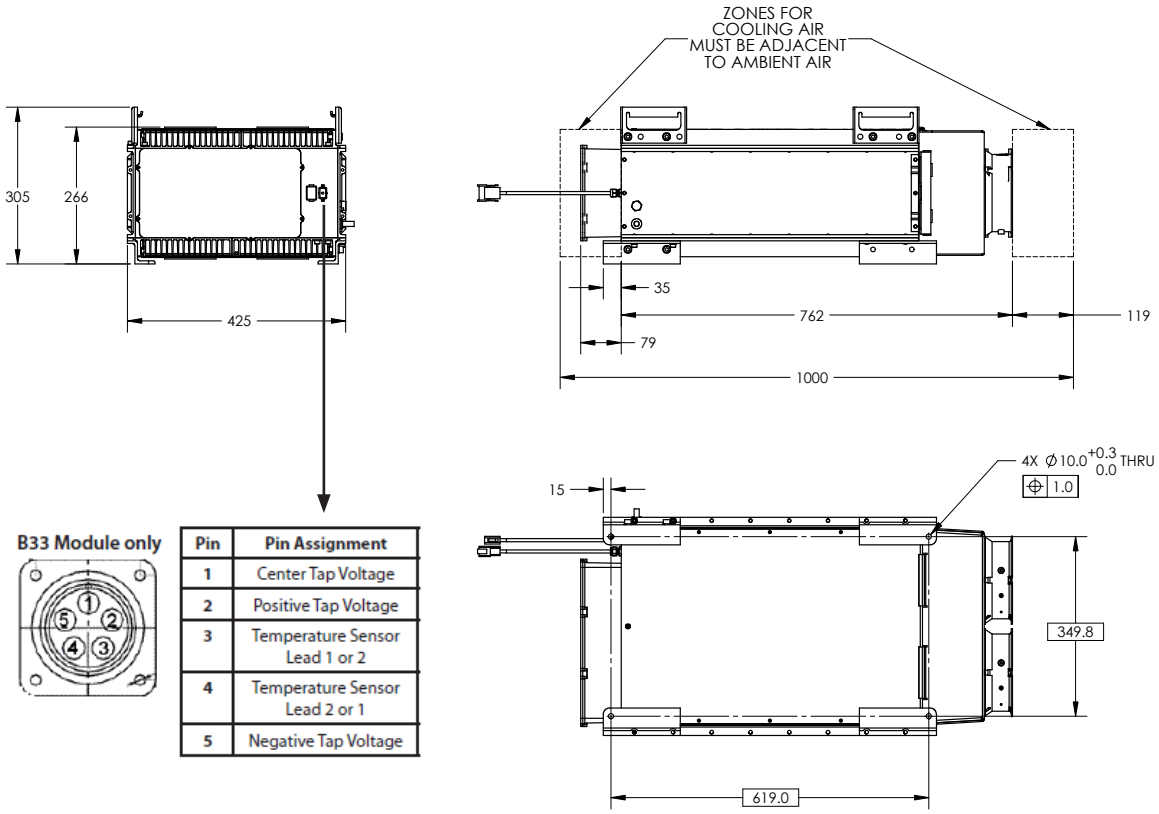
MOUNTING RECOMMENDATIONS

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.

BMOD0063 P125 Bxx



B33 Module only

Pin	Pin Assignment
1	Center Tap Voltage
2	Positive Tap Voltage
3	Temperature Sensor Lead 1 or 2
4	Temperature Sensor Lead 2 or 1
5	Negative Tap Voltage

Part Description	Dimensions (mm) L (±0.5mm)	W (±0.2mm)	H (±0.7mm)	Package Quantity
BMOD0063 P125 B03	762	425	265	1
BMOD0063 P125 B04/08	619	425	265	1

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: 7511942, 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.

ORDERING INFORMATION

Base Module

109120B	BMOD0063 P125 B04 63F/125V Module with CAN Comm.
109024B	BMOD0063 P125 B08 63F/125V e-mark Module with CAN Comm.
109121B	BMOD0063 P125 B03 Standard Module with analog monitoring

Power Connection Kit

109131	Power Connection Kit, 90DEG
109132	Power Connection Kit, STRAIGHT

Communication Kit

109133	CAN SIGNAL, Deutsch

Fan Kit

109134	FAN KIT, 24V Standard
109093	FAN KIT, 24V, E-Mark

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