Datasheet 125V Heavy Transportation Modules

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
Rated Capacitance[1]	63 F
Minimum Capacitance, initial[1]	63 F
Maximum ESR $_{DC,}$ initial[1]	18 mΩ
Rated Voltage	125 V
Absolute Maximum Voltage[15]	136 V
Maximum Continuous Current (ΔT = 15°C)[2]	140 A_{RMS}
Maximum Continuous Current (ΔT = 40°C)[2]	240 A_{RMS}
Maximum Peak Current, 1 second (non repetitive)[3]	1,800 A
Leakage Current, maximum (VMS 2.0)[4]	10 mA
Maximum Series Voltage	1,500 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	BMOD0063 P125 B04/B08
Mass, typical[13]	60.5 kg
Power Terminals	Radsok
Recommended Torque - Terminal	N/A
Vibration Specification	ISO16750-3 Table 14
Shock Specification	SAE J2464
Environmental Protection	IP65
Cooling	Forced Air
MONITORING / CELL VOLTAGE MANAGEMENT	
Temperature Interface	Serial Data (CAN)
Cell Voltage Monitoring	Group Voltage (CAN)
Connector	Deutsch DTM
Cell Voltage Management	VMS 2.0
POWER & ENERGY	
Usable Specific Power, P_d[5]	1,700 W/kg
Impedance Match Specific Power, P_{max}[6]	3,600 W/kg
Specific Energy, E_{max}[7]	2.3 Wh/kg
Stored Energy[8]	136.7 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%
Cycle Life[1,9]	1,000,000 cycles
Capacitance Change (% decrease from minimum initial value)	20%
ESR Change (% increase from maximum initial value)	100%
Test Current	100 A
Shelf Life[1,10] (Stored uncharged up to a maximum storage temperature)	2 years

PRODUCT SPECIFICATIONS (Cont'd)

BMOD0063 P125 B04/B08

SAFETY

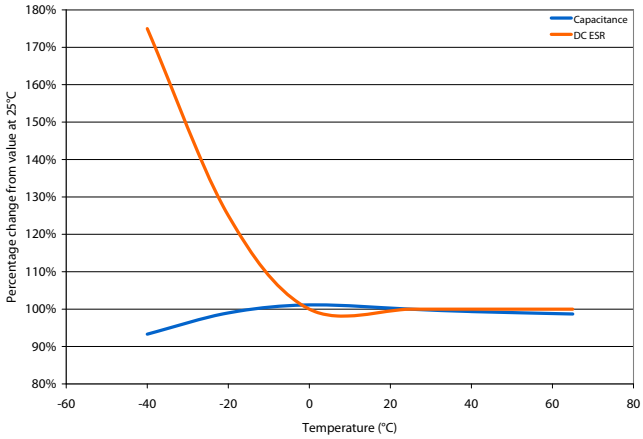
Short Circuit Current, typical (Current possible with short circuit from rated voltage. Do not use as an operating current.)	6,900 A
Factory High-Pot Test[14]	4,000 V DC
Certifications	RoHS eMark 72/245/EEC (B08 only) UN10.03 (B08 only)

TYPICAL CHARACTERISTICS

THERMAL CHARACTERISTICS

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

ESR AND CAPACITANCE VS TEMPERATURE



Datasheet 125V Heavy Transportation Modules

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. $E_{stored} = \frac{½\ CV^2}{3{,}600}$
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. 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

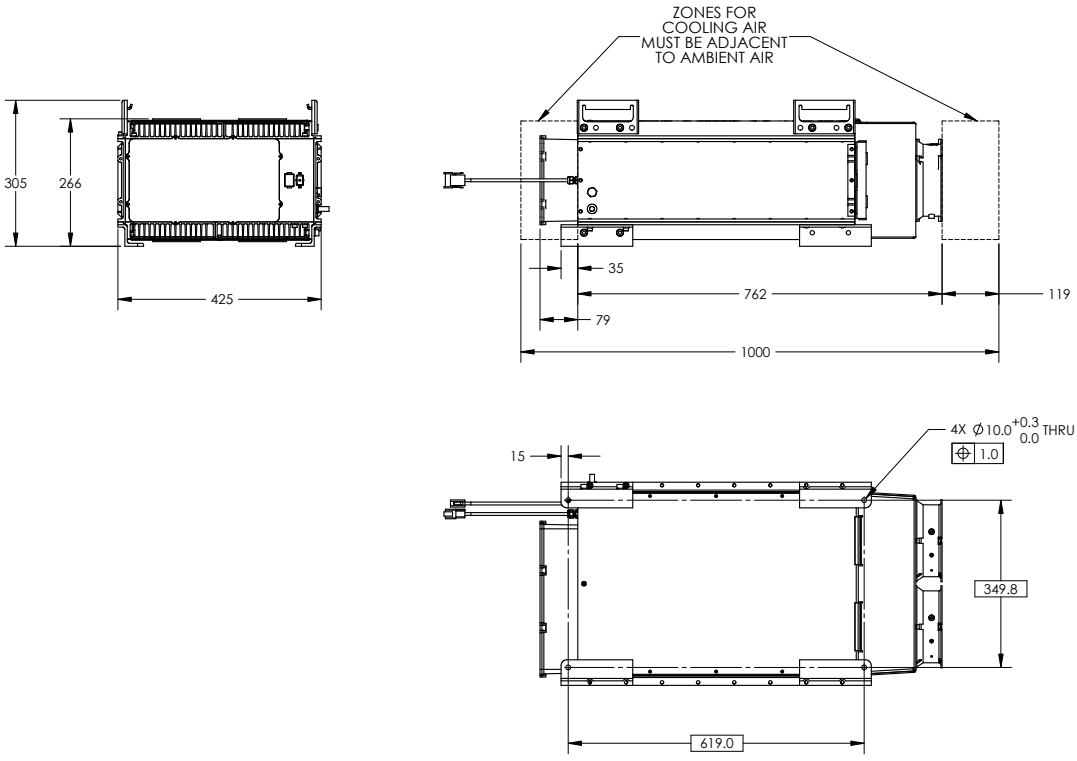
Please refer to the user manual for installation recommendations.

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.

Datasheet 125V Heavy Transportation Modules

BMOD0063 P125 Bxx



Part Description	Dimensions (mm) L (±0.5mm)	W (±0.2mm)	H (±0.7mm)	Package Quantity
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.

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
129036	FAN KIT, 24V, E-Mark

Component Distributors, Inc.
Corporate
2601 Blake Street, Suite 200
Denver, CO 80205
Toll-Free: 1-800-777-7334

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