BCAP0310 P250
BCAP0350 E250

The BC Series ultracapacitor product line gives industrial customers a wide range of choices to meet their energy storage and power delivery requirements. The 350F Energy cell provides higher energy for longer discharge applications, while the 310F Power cell provides higher power for fast discharge applications. The cells are specifically engineered to provide cost effective solutions for automotive subsystems, UPS, renewable energy and portable consumer products.

In addition to meeting or exceeding demanding industrial application requirements for both watt-hours of energy storage and watts of power delivery per kilogram, all of these products will perform reliably for more than 500,000 discharge-recharge cycles.

The proprietary architecture and material science of the BOOSTCAP® products enable continued leadership in controlling costs, flexibility in product offerings and allow application specific performance tailoring.

TYPICAL FEATURES AND BENEFITS

- Dimensions similar to EN 60086-2 & EN 60285
- Ultra-low internal resistance
- UL recognized
- Resistant against reverse polarity
- 500,000 cycles
- 10 year life capability
- Round, double ended design

EXAMPLE APPLICATIONS

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

PRODUCT SPECIFICATIONS

CAPACITANCE	BCAP0310	BCAP0350
Nominal capacitance	310 F	350 F
Capacitance tolerance	±20%	±20%
VOLTAGE		
Rated voltage	2.5 V DC	2.5 V DC
Surge voltage	2.7 V DC	2.7 V DC
RESISTANCE		
ESR, DC	2.2 mΩ	3.2 mΩ
ESR, 1khz	1.1 mΩ	1.6 mΩ
Thermal resistance (Rth)	10.9 C/W	10.9 C/W
Resistance tolerance	Max.	Max.
TEMPERATURE		
Operating temperature range	-40°C to +65°C	
Storage temperature range	-40°C to +70°C	
Temperature characteristics		
Capacitance change	Within 5% of initial measured value at 25°C (at -40°C)	
Internal resistance change	Within 150% of initial measured value at 25°C (at -40°C)	
POWER Maximum peak current calculations: IMAX = nominal capacitance x 0.5 (rated voltage) / 1 sec.		
Pd	5,600 W/kg	3,900 W/kg
Pmax	23,600 W/kg	16,275 W/kg

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PRODUCT SPECIFICATIONS (cont.)

ENERGY	BCAP0310	BCAP0350
Energy density (Emax)	4.48 Wh/kg	5.1 Wh/kg
LIFESPAN		
Shelf life	After 1,000 hours storage at 65°C without load shall meet specification for endurance	
Endurance After 1,000 hours application of rated voltage at 65°C. Within % of initial specified value.		
Capacitance change	Within 20% of initial value	
Internal resistance change	Within 25% of initial value	
Life test After 10 years at rated voltage and 25°C. Within % of initial specified value.		
Capacitance change	Within 30% of initial value	
Internal resistance	Within 100% of initial value	
CYCLES Capacitors cycled between specified voltage and half rated voltage under constant current at 25°C (500,000 cycles).		
Capacitance change	Within 20% of initial value	
Internal resistance	Within 100% of initial value	
CURRENT		
Leakage current (Ic) After 72 hours at 25°C. Initial leakage current can be higher.	0.45 mA	1 mA
Maximum continuous current Assuming 15°C temperature rise above ambient temperature.	20 A	20 A
Short circuit current (Isc)	1,500 A	1,500 A
CONNECTION		
Terminal	Tab	Tab
SIZE		
Dimensions	See drawings.	
Mass	60g	60g

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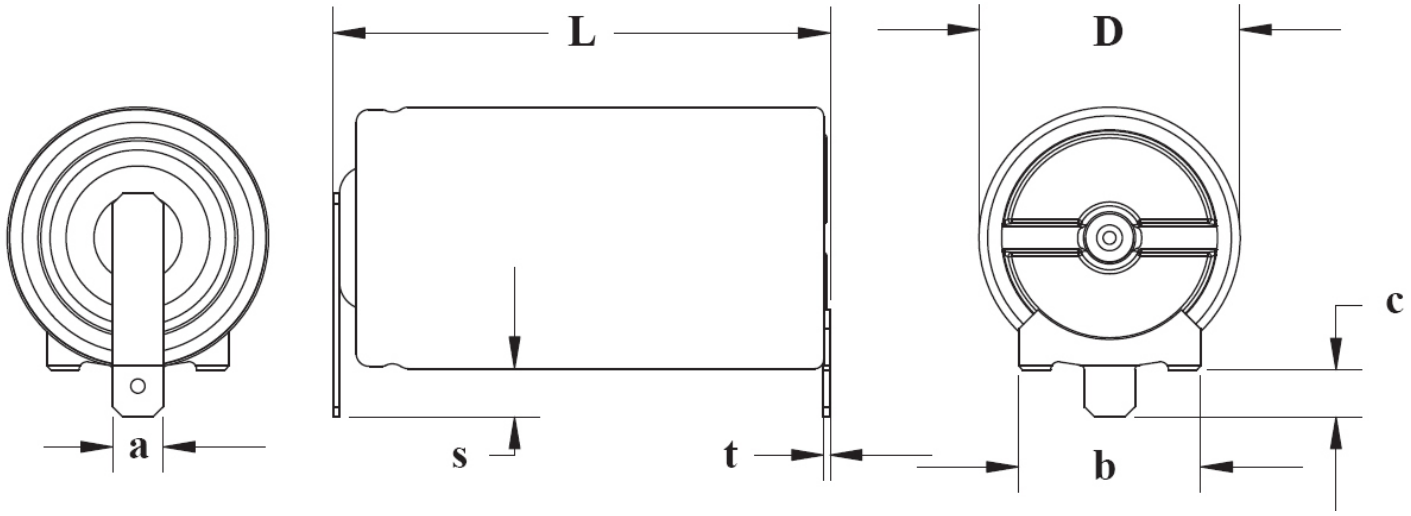
DIMENSIONS (mm)



Part Description	Vol (L)	Size (mm)						
		L	D	a	b	c	s	t
BCAP0310 P250	0.053	62	33	6.4	22.9	5.9	6.2	0.8
BCAP0350 E250	0.05	62	33	6.4	22.9	5.9	6.9	0.8

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.

MARKINGS

Modules are marked with the following information: Rated capacitance, rated voltage, part number, manufacturer, positive and negative terminal, warning marking, UL symbol, lot number.

MOUNTING RECOMMENDATIONS

Solder tabs to PCB. See application note for further information and slot spacing recommendations.

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 (maximum peak current)

R_{th} = thermal resistance

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

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

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

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