DATASHEET
BC POWER SERIES RADIAL D CELL 310F ULTRACAPACITOR

BCAP0310 P270 T10

FEATURES AND BENEFITS

- Round, radial mounting design for easy surface mount assembly
- Over 500,000 duty cycles
- 10 year life capability
- Ultra-low internal resistance

APPLICATIONS

- Automotive subsystems
- Industrial power back up
- Portable power tools
- Renewable energy systems

PRODUCT SPECIFICATIONS

CAPACITANCE	
Nominal capacitance	310 F
Capacitance tolerance	+20% / -0%
VOLTAGE	
Rated voltage	2.7 V DC
Surge voltage	2.85 V DC
Isolation voltage	N/A
RESISTANCE	
ESR, DC	2.2mΩ
Resistance tolerance	Max.
Thermal resistance (Rth)	10.9°C/W
TEMPERATURE	
Operating temperature range	-40°C to +65°C
Storage temperature range	-40°C to +70°C
Temperature characteristics	
Capacitance change	± 5% of value at 25°C
Internal resistance	± 150% of value at 25°C
POWER	
Pd	6,400 W/kg
ENERGY	
Emax	5.06 Wh/kg
LIFESPAN	
Endurance After 1,000 hours application of rated voltage at 65°C.	
Capacitance change	<20% decrease
Internal resistance	<25% increase
Life test After 10 years at rated voltage and 25°C.	
Capacitance change	≤20% decrease
Internal resistance	≤100% increase
CYCLES	
Cycles - Capacitors cycles between specified voltage and half rated voltage under constant current at 25°C (500,000 cycles)	
Capacitance change	≤20% decrease
Internal resistance	≤100% increase

CURRENT	
Leakage current After 72 hours at 25°C. Initial leakage current can be higher.	0.45 mA
Short circuit current (Isc) **CAUTION:** Current possible with short circuit from U_R. Do not use as an operating current.	1,220 A
Maximum continuous current	30 A
Maximum peak current, 1 sec	240 A
CONNECTION	
Terminal	Radial
SIZE	
Dimensions	See drawing
Volume	0.053 L
Mass	62g

MOUNTING RECOMMENDATIONS

Solder tabs to PCB. See application note for further information and slot spacing recommendations. For proper mounting, the use of a holder or spacer between the cell and the PCB is required.

MARKINGS

Parts are marked with the following information: Rated capacitance, rated voltage, product number, name of manufacturer, positive and negative terminal, warning marking, serial number.

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) = $\frac{V_{RATED}}{ESR}$

R_{th} = thermal resistance

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

$$Pmax = \frac{\frac{V^2}{4R\ (1khz)}}{mass} \qquad Pd = \frac{\frac{0.12V^2}{R\ (DC)}}{mass}$$

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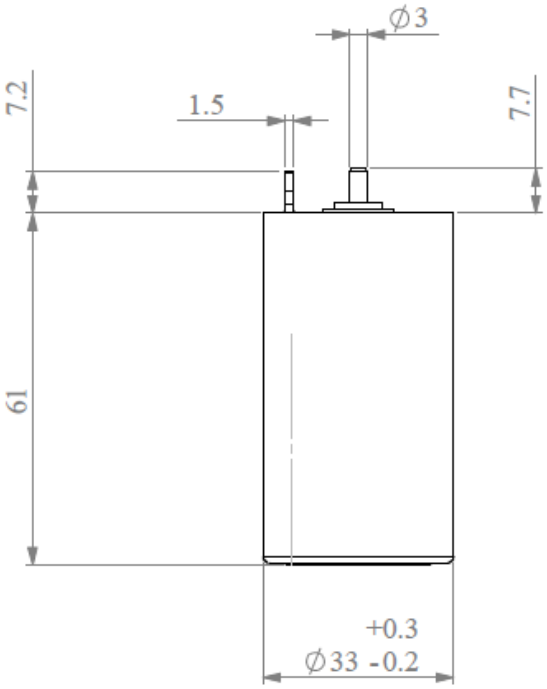
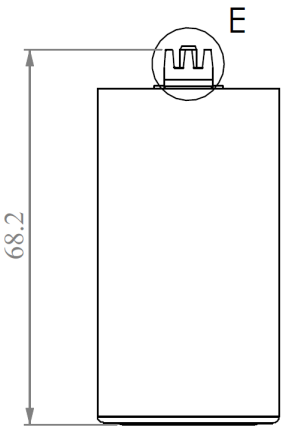
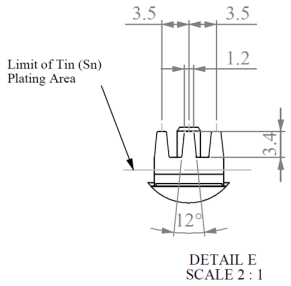
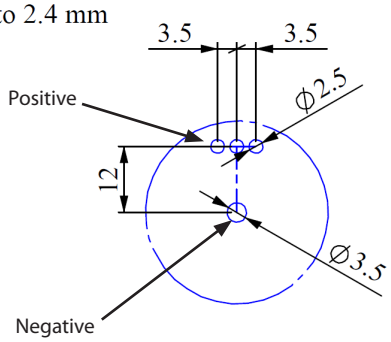
PRODUCT SPECIFICATIONS

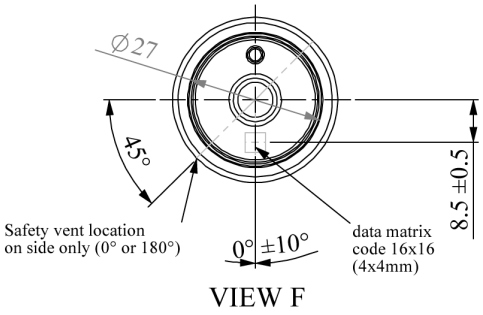






Board drillings
Board thickness : 1.5 to 2.4 mm





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.

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