

**PC10**      **PC10HT**  
**PC10-90**    **PC10HT-90**  
**PC10-270**   **PC10HT-270**



Now containing Maxwell Technologies patented electrode

### FEATURES AND BENEFITS

- Over 500,000 duty cycles with 10 year life capability
- Hermetically sealed, stainless steel construction
- Low profile prismatic design
- Higher energy vs electrolytic capacitors
- Higher power vs batteries
- compliant

### TYPICAL APPLICATIONS

- Automatic meter readers
- Automatic subsystems
- Back up power for SSD and NV-DIMM
- Digital cameras and consumer electronics
- Wireless transmissions
- NASA space qualified

## PRODUCT SPECIFICATIONS

	PC10, PC10-90, PC10-270	PC10HT, PC10HT-90, PC10HT-270
<b>ELECTRICAL</b>		
<b>Capacitance</b>		
Nominal Capacitance	10 F	10 F
Tolerance capacitance	-10% / +20%	-10% / +20%
<b>Voltage</b>		
Rated Voltage	2.5 V	2.2 V
<b>Resistance</b>		
ESR, DC (max., room temperature)	0.18 Ω	0.18 Ω
ESR, AC (max., room temperature, 1kHz)	130 mΩ	130 mΩ
<b>Current</b>		
Maximum continuous current	2.5 A	2.5 A
Maximum peak current, 1 sec.	12.5 A	12.5 A
Leakage current (After 72 hours at 25°C. Initial leakage current can be higher.)	0.04 mA	0.04 mA
<b>TEMPERATURE</b>		
Operating temperature range (Cell case temperature)	-40°C to +70°C	-40°C to +85°C
Storage temperature range (Stored uncharged)	-40°C to +85°C	-40°C to +85°C
<b>POWER AND ENERGY</b>		
Usable power density, Pd	660 W/kg	510 W/kg
Usable power	3.6 W	3.2 W
Impedance match power, Pmax	1,900 W/kg	1,470 W/kg
Gravimetric energy density, Emax	1.38 Wh/kg	1.07 Wh/kg
Energy available	8.7 mW	6.7 mW

PRODUCT SPECIFICATIONS (cont.)

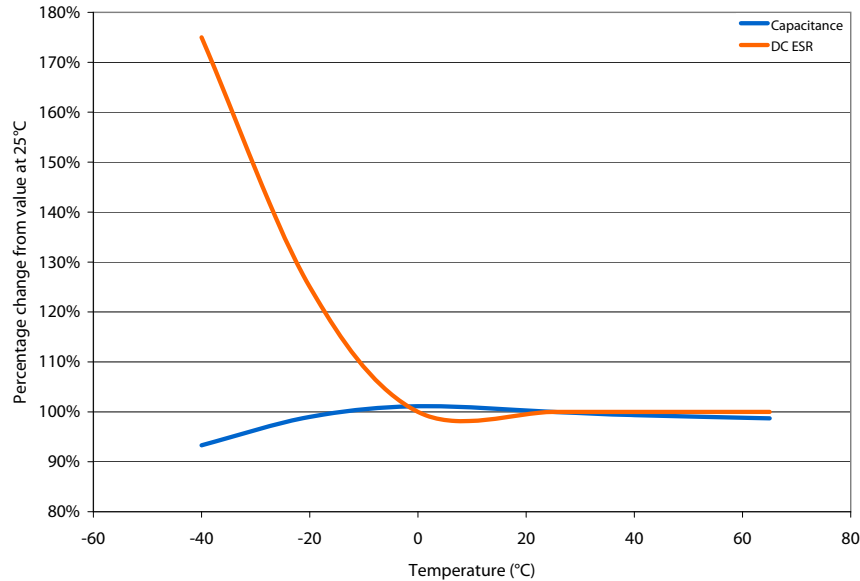
	PC10, PC10-90, PC10-270	PC10HT, PC10HT-90, PC10HT-270
<b>DC LIFESPAN</b>		
<b>Endurance</b> (at rated voltage and temperature)	3,000 hours	1,500 hours
<b>Capacitance change</b> (% decrease from rated value)	≤20%	≤20%
<b>ESR change</b> (% increase from rated value)	≤100%	≤100%
<b>Life Test</b> (at rated voltage and 20°C)	10 years	10 years
<b>Capacitance change</b> (% decrease from rated value)	≤20%	≤20%
<b>ESR change</b> (% increase from rated value)	≤100%	≤100%
<b>Cycle Test</b> (Number of cycles)	500,000	500,000
<b>Capacitance change</b> (% decrease from rated value)	≤20%	≤20%
<b>ESR change</b> (% increase from rated value)	≤100%	≤100%
<b>Shelf Life</b>	3 years	3 years
<b>Capacitance change</b> (% decrease change from rated value)	≤10%	≤10%
<b>ESR change</b> (% increase change from rated value)	≤50%	≤50%
<b>CONNECTION</b>		
<b>Power output terminals</b>	Straight lead (PC10) 90° bent lead (PC10-90) 270° bent lead (PC10-270)	Straight lead (PC10HT) 90° bent lead (PC10HT-90) 270° bent lead (PC10HT-270)
<b>Monitoring and control</b>	N/A	N/A
<b>Cell management</b>	N/A	N/A
<b>PHYSICAL</b>		
<b>Dimensions</b>	See drawings	See drawings
<b>Weight</b>	6.3g	6.3g
<b>SAFETY</b>		
<b>Short circuit current</b> (Current possible with short circuit from rated voltage. Do not use as an operating current.)	13.9 A	12.2 A
<b>Certifications</b>	UL810A	UL810A
<b>Surge voltage</b> (Voltage above this level can cause catastrophic failure.)	2.7 V	2.3 V

## TYPICAL CHARACTERISTICS

PC10, PC10-90, PC10-270

PC10HT, PC10HT-90, PC10HT-270

### THERMAL CHARACTERISTICS



## ADDITIONAL TECHNICAL INFORMATION

Capacitance and ESR, DC measured per document no. 1007239 available at [www.maxwell.com](http://www.maxwell.com). Unless specified, all specifications are at 25°C.

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

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

$$\text{Pmax} = \frac{V^2}{4 \times \text{ESR(DC)} \times \text{mass}}$$

$$\text{Pd} = \frac{0.12V^2}{\text{ESR(DC)} \times \text{mass}}$$

$$\text{Maximum peak current (1 sec)} = \frac{\frac{1}{2} CV}{C \times \text{ESR(DC)} + 1}$$

## MOUNTING RECOMMENDATIONS

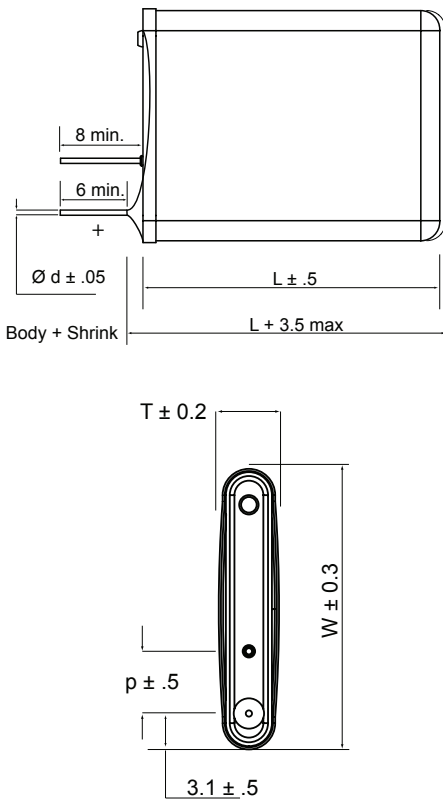
All leads are tinned from 1.5mm of capacitor body. It is recommended that parts stay within protective packaging until ready to use. Parts may be soldered or wave soldered. Request supplemental information related to mounting instructions if necessary. Components should not be operated outside recommended limits.

## MARKINGS

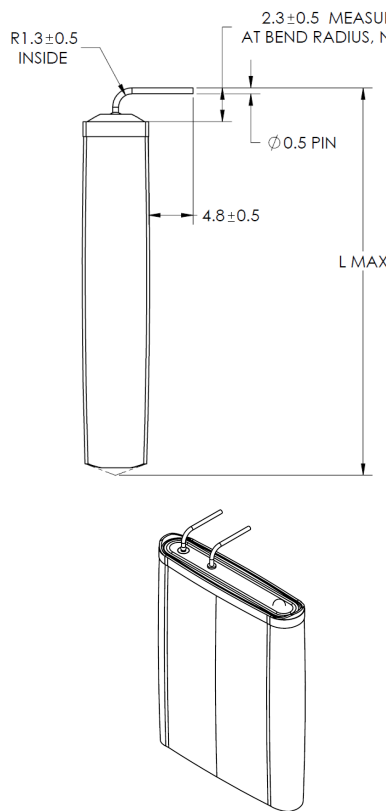
Products are marked with the following information: Rated capacitance, rated voltage, product number, name of manufacturer, positive and negative terminal, warning marking, serial number.

**DIMENSIONS**

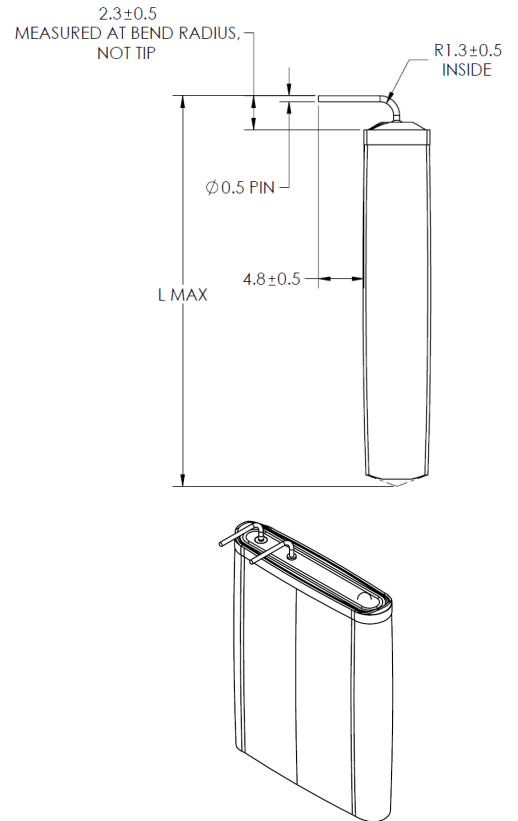
**PC10, PC10HT**



**PC10-90, PC10HT-90**



**PC10-270, PC10HT-270**



Part Description	Vol (l)	Dimensions (mm)					Package quantity
		L	W	T	d	p	
<b>PC10, PC10HT</b>	0.003	29.6	23.6	4.8	0.5	5.1	1920
<b>PC10-90, PC10HT-90</b>	0.003	35.9	23.6	4.8	0.5	5.1	1824
<b>PC10-270, PC10HT-270</b>	0.003	35.9	23.6	4.8	0.5	5.1	1824

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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