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

TYPICAL APPLICATIONS

- Automotive subsystems
- Smart meter
- Back up power for SSD and NV-DIMM
- Consumer electronics
- Wireless transmissions
- NASA space qualified

PRODUCT SPECIFICATIONS

ELECTRICAL	PC10, PC10-90, PC10-270	PC10HT, PC10HT-90, PC10HT-270
Rated Capacitance[1]	10 F	10 F
Minimum Capacitance, initial[1]	9 F	9 F
Maximum $ESR_{DC,}$ initial[1]	180 mΩ	180 mΩ
Rated Voltage	2.50 V	2.20 V
Absolute Maximum Voltage[11]	2.70 V	2.70 V
Maximum Continuous Current ($\Delta T = 15°C$)[2]	2.4 A_{RMS}	2.4 A_{RMS}
Maximum Continuous Current ($\Delta T = 40°C$)[2]	3.8 A_{RMS}	3.8 A_{RMS}
Maximum Peak Current, 1 second (non repetitive)[3]	4.5 A	3.9 A
Leakage Current, maximum [4]	0.040 mA	0.040 mA
TEMPERATURE		
Operating temperature range (Cell case temperature)		
Minimum	-40°C	-40°C
Maximum	70°C	85°C
Storage temperature range (Stored uncharged)		
Minimum	-40°C	-40°C
Maximum	85°C	85°C
PHYSICAL		
Mass, typical	6.3 g	6.3 g
Terminals	Wire Leads	Wire Leads
Vibration	ISO16750-3, Table 14	ISO16750-3, Table 14
Shock	-	-

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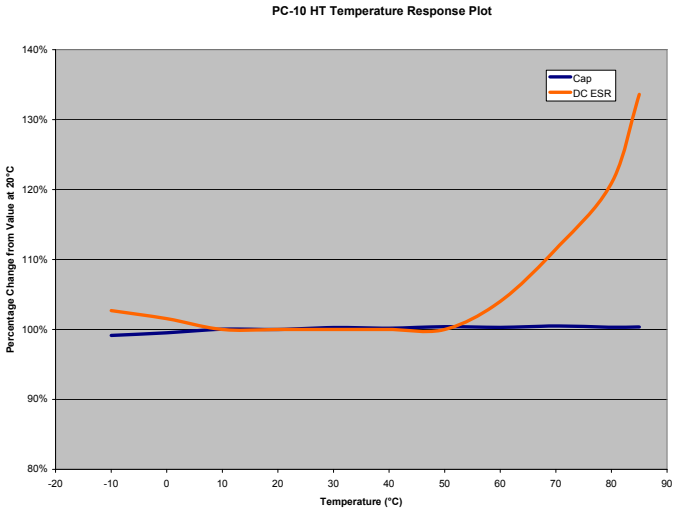
PRODUCT SPECIFICATIONS (Cont'd)

POWER & ENERGY	PC10, PC10-90, PC10-270	PC10HT, PC10HT-90, PC10HT-270
Usable Specific Power, P_d [5]	660 W/kg	510 W/kg
Impedance Match Specific Power, P_{max} [6]	1,400 W/kg	1,100 W/kg
Specific Energy, E_{max} [7]	1.4 Wh/kg	1.1 Wh/kg
Stored Energy[8]	0.009 Wh	0.007 Wh
LIFE		
High Temperature[1] (at Rated Voltage & Maximum Operating Temperature)	3,000 hours	1,000 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]	500,000 cycles	500,000 cycles
Capacitance Change (% decrease from minimum initial value)	20%	20%
ESR Change (% increase from maximum initial value)	100%	100%
Test Current	1.0 A	1.0 A
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.)	14 A	12 A
Certifications	UL810a, RoHS	UL810a, RoHS

TYPICAL CHARACTERISTICS

THERMAL CHARACTERISTICS	PC10, PC10-90, PC10-270	PC10HT, PC10HT-90, PC10HT-270
Thermal Resistance (Rth, Case to Ambient), typical[2]	15°C/W	15°C/W
Thermal Capacitance (C_{th}), typical [2]	3.6 J/°C	3.6 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. $E_{stored} = \frac{½\ CV^2}{3{,}600}$
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. Absolute maximum voltage non repeated, not to exceed 1 second.

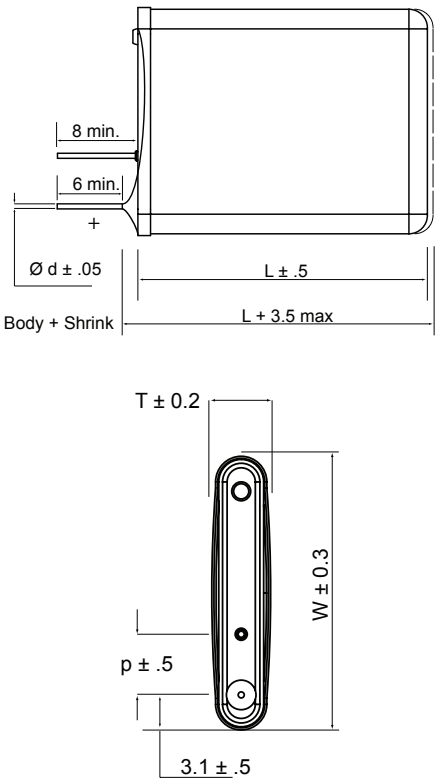
MOUNTING RECOMMENDATIONS

Do not reverse polarity. Please refer to document number 1008238, available at maxwell.com for soldering recommendations.

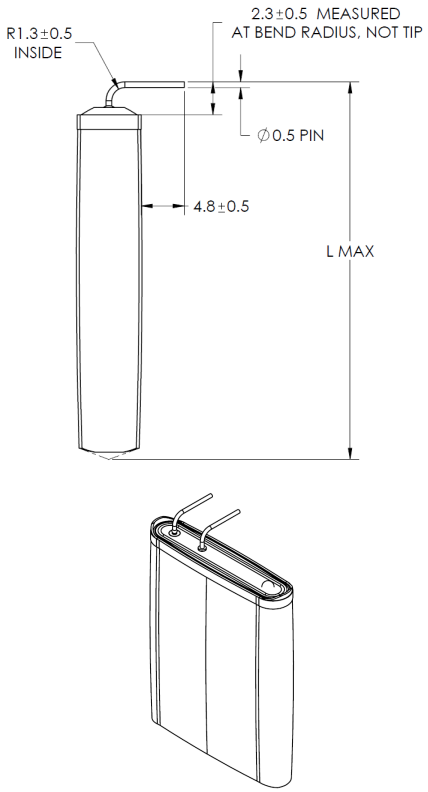
MARKINGS

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

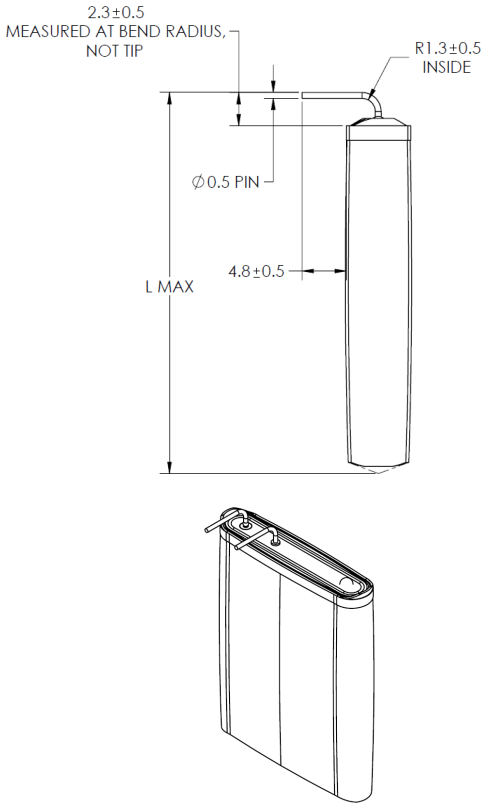
PC10, PC10HT



PC10-90, PC10HT-90



PC10-270, PC10HT-270



Part Description	Dimensions (mm) L (mm)	W (mm)	T (mm)	d (mm)	p (mm)	Package Quantity
PC10, PC10HT	29.6	23.6	4.8	0.5	5.1	2,000
PC10-90, PC10HT-90	35.9	23.6	4.8	0.5	5.1	2,000
PC10-270, PC10HT-270	35.9	23.6	4.8	0.5	5.1	2,000

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: 6.842.330, 7.116.545, 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.

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