

Type CDHC Snap-In Hybrid Carboncap Power Ultracapacitors

Large Cylindrical Type



The snap mount hybrid ultracapacitors are designed for board mountable power backup applications. The best applications for these type of ultracapacitors have low power, low energy, and low charge/discharge cycle rates. The main feature of these ultracapacitors is the ability to be rapidly charged preferably followed by a slow discharge. Applications include solar lighting, LED lighting, and portable devices.

Highlights

- Rapid charge
- Circuit board mountable
- Standard snap-In design

Specifications

| | |
|-----------------------------|---|
| Operating Temperature Range | -40 °C to +60 °C |
| Storage Temperature Range | -40 °C to +65 °C |
| Rated Voltage Range | 2.3 Vdc, 2.50 Vdc rated surge (do not discharge below 1 Vdc) |
| Capacitance Range | 220 F to 1000 F |
| Capacitance Tolerance | -5% / +10% |
| Life at Room Temperature | 10 years at rated voltage and 25 °C Capacitance change ≤20% ESR change ≤100% |
| Life Test | 1000 h @ rated voltage and +50 °C Capacitance change ≤30% decrease ESR change ≤100% increase |
| Cycle Test | >10,000 cycles (rated to half rated voltage at +25 °C) Capacitance change ≤20% decrease ESR change ≤100% increase |
| Shelf Life | 1000 h without voltage at +60 °C Capacitance change ≤20% decrease ESR change ≤100% increase |
| RoHS Compliant | |

Ratings

| Part Number | CDHC221K2R3SR | CDHC301K2R3SR | CDHC821K2R3SR | CDHC102K2R3SR |
|---|---------------|---------------|---------------|---------------|
| Terminal Configuration | Snap In | Snap In | Snap In | Snap In |
| Capacitance (F) (Discharge w constant current at 25°C) | 220 | 300 | 820 | 1000 |
| ESR, DC (mΩ), Max | 40 | 25 | 12 | 14 |
| ESR, AC @ 1kHz (mΩ), Max | 25 | 15 | 6 | 7 |
| Current - Max Peak (A) (1 s discharge rate to 50% of rated Voltage) | 26 | 41 | 87 | 77 |
| Leakage current (mA), Max after 72 h at +25 °C | 0.20 | 0.55 | 0.50 | 0.70 |
| Usable Power Density, Pd (kW/kg) (Per IEC 62391-2) | 0.63 | 0.94 | 0.76 | 0.50 |
| Impedance match power, (kW/kg) | 2.1 | 3.3 | 3.1 | 2.1 |
| Gravimetric energy density, Emax (Wh/kg) | 5.2 | 6.6 | 7 | 5.2 |
| Energy available (Wh) (At rated voltage) | 0.13 | 0.18 | 0.49 | 0.60 |
| Weight (kg) | 0.025 | 0.027 | 0.07 | 0.115 |
| Maximum Continuous Current (Arms) (ΔT=20°C) | 5 | 5.5 | 7.5 | 8 |
| Short circuit current (A) | 92 | 153 | 383 | 329 |

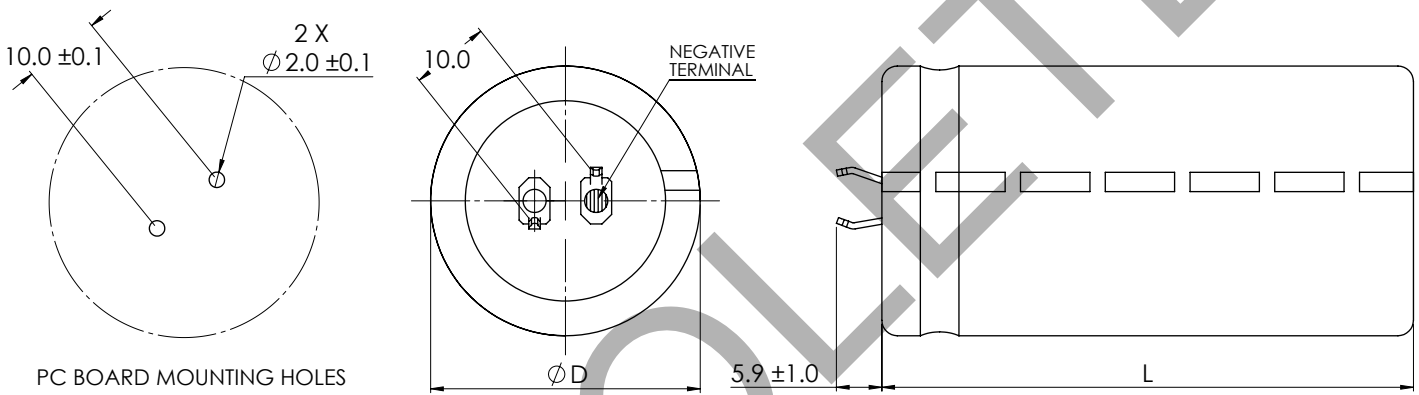
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Part Numbering System

| | | | | |
|---|--|--|--|--|
| CDHC Type | 221 Capacitance (F) | K Tolerance (%) | 2R3 Voltage (V) | SR Configuration |
| CDHC - Carbon Double Layer Hybrid Cell | 221 = 220 | K = -5 / +10% | 2R3 = 2.3 | SR = snap-in, 2 pins |

Outline Drawing and Dimensions



| Snap Mount Hybrid Type Part Number | Dimensions (mm) | |
|---------------------------------------|-----------------|-----------------|
| | D (+1/-0mm) | L (± 2 mm) |
| CDHC221K2R3SR | 22 | 45 |
| CDHC301K2R3SR | 22 | 45 |
| CDHC821K2R3SR | 27 | 80 |
| CDHC102K2R3SR | 35 | 88 |

Do not reverse polarity.

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OBSOLETE