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[Cornell Dubilier Electronics](#)

[CDHC301K2R3SR](#)

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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

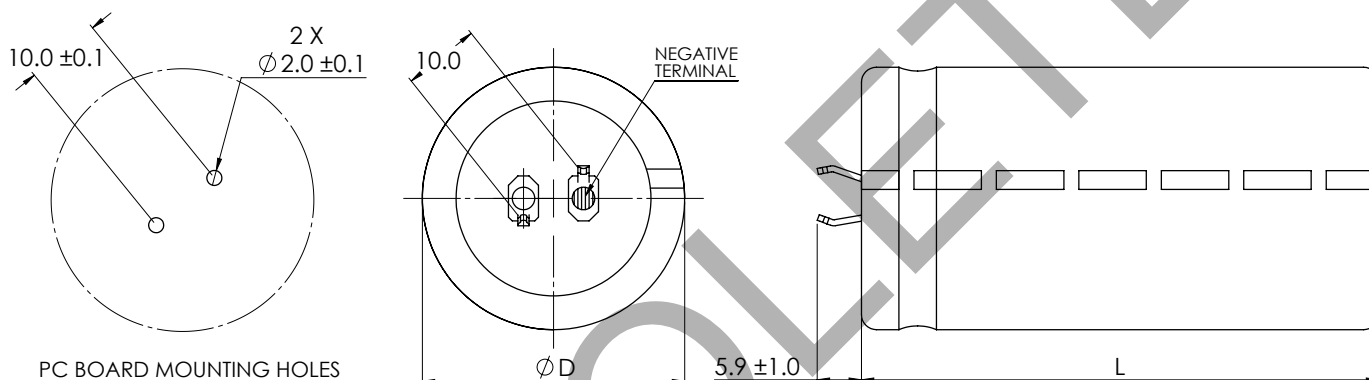
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Part Numbering System

CDHC	221	K	2R3	SR
Type	Capacitance (F)	Tolerance (%)	Voltage (V)	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 (±2mm)
CDHC221K2R3SR	22	45
CDHC301K2R3SR	22	45
CDHC821K2R3SR	27	80
CDHC102K2R3SR	35	88

Do not reverse polarity.

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