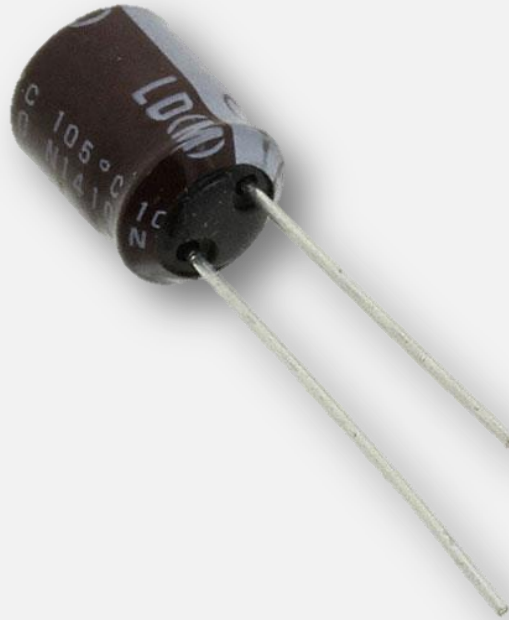


Tech Topics



ULD Series



Nichicon Advantages

Wide Voltage Range

Long Life

High Reliability



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Wide Voltage Range

Higher voltages range from 160V to 450V

Expanded

Lower voltages range from 10V to 100V



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Long Life

10,000 hour life for 10V to 100V at 105C

20,000 hour life for 160V to 450V at 105C



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High Reliability

Ripple current up to 520 mA at 105C, 120 Hz

Temperature -25C to +105C for 10V to 100V, and 450V

Temperature -40C to + 105C for 160V to 400V



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Applications and Focus Markets

Power Supplies

LED Drivers

Smart Meters

Inverters and Power Converters



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In Review

Wide Voltage Range
Long Life Assurance
High Reliability



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Additional Information



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New Products Product Upgrades Vertical Markets



nichicon Tech Topics

October 2010

In This Issue

- Electric Double Layer Capacitors (EDLC)
- The Newest FPCAP-LW
- Markets
- Applications

UW Series Electric Double-Layer Capacitor (EDLC)

For many years, rechargeable batteries were the only solution for temporary memory backup of data or timing clocks in various electronic devices. They have also been used as an emergency or short-term secondary power source during the events when the primary power source was not sufficient. Recent advances in capacitor development have made the electric double-layer capacitor (EDLC) a viable alternative.

There are many advantages to the EDLC:

Advantage #1: Longer Life
Rechargeable batteries typically have 500 to 1000 life cycles. After being charged and discharged a few hundred times, the capacity of the batteries starts to decrease. Eventually, they will lose most of their storage capacity. An EDLC can be charged and discharged for more than a million times without any reduction in its storage capacity. If an EDLC can be used in conjunction with the battery, it can increase the battery's life.

Advantage #2: Faster Charging Times
Since a rechargeable battery stores energy by chemical reactions, it generally takes much longer to recharge, usually about an hour. Whereas the EDLC stores energy by the movement of ions, it usually takes from 0.1 to 30 seconds. Therefore, if equipment needs rapid energy, the EDLC is a much better choice.

Advantage #3: Lighter and Safer
Rechargeable batteries usually contain heavy and harmful metals like lead and cadmium. As the size increases, they could weigh more than twice that of an EDLC of the same volume. EDLCs don't contain harmful metals and are environmentally friendly.

Advantage #4: No Limitation for the Charging Current
A current limiting circuit is sometimes needed when a rechargeable battery is used to prevent any rush charging current from damaging the battery. The EDLC has no limitation for the charging circuit provided the charging voltage does not exceed the rated voltage of the EDLC. Please note that if high ripple current, high pulse current and/or high charge and discharge currents are applied to the capacitor, the internal temperature rise generated by self-heating of the capacitor may cause deterioration greater than one might expect.

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nichicon TECH TOPICS

November 2009

In This Issue

- Electric Double Layer Capacitors (EDLC)
- The FPCAP
- Markets
- Applications

Electric Double-Layer Capacitors

Value 1, Number 1

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Advantage #5: Maintenance Free
EDLC is a "fill and Forget" device. There's no maintenance required or special handling like a rechargeable battery.

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nichicon Tech Topics

January 2010

In This Issue

- Polymer Capacitors
- Key Advantages
- Markets
- Applications

Nichicon's New FPCAP Polymer Capacitors

Advances in the performance of electronic equipment over recent years have also resulted in great improvements in polymer electrolyte capacitors. As the technology advances, manufacturers are now seeking higher quality capacitors that need to a requirement for capacitors with characteristics that include both large capacitance and high response rate. Recently, we have two digital cameras, digital video and digital camcorder models DVX100 and DVX100V models from the same manufacturer, which require both small size and high performance. Low inductance, low parasitic inductance and low equivalent series resistance (ESR) are the key characteristics needed to improve the operation of high frequency noise by digital cameras. Aluminum foil anodes and high-technology functional polymer electrolytes. Nichicon's new FPCAP polymer electrolyte capacitors which offer small size with low ESR and high capacitance.

A suitable in a wide range to suit the diverse requirements of customers, the FPCAP capacitors can help improve the efficiency of various different types of power supplies and contribute to designing equipment with higher performance, smaller size and reduced noise.

There are key advantages to aluminum polymer capacitors:

Advantage #1: Low ESR
Aluminum electrolytic capacitors offer very low ESR ratings versus standard business electrolytic capacitors. ESR energy need to be less than 100mV.

Advantage #2: Excellent Frequency Characteristics
Due to the high conductivity of a functional polymer with an electrolyte, the ESR is greatly reduced, obtaining the frequency characteristic nearly equal to a film capacitor.

Advantage #3: Usage with High Ripple Currents
Electrolyte has higher ripple current capacity.

Advantage #4: Steady ESR and Capacitance
ESR and capacitance have steady characteristics over temperature change and a wide frequency range.

Advantage #5: Cost Savings
Capacitor capacitors have the same ripple current and ESR capabilities as 7 to 9 standard aluminum capacitors in parallel. This creates a great advantage in reducing cost and/or board real-estate.

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