

# *Tech Topics: Industrial Power*



*Back to Basics*

# *Nichicon: Industrial Power*



- **Wide Temperature Range of Parts**
- **High Reliability Parts**
- **Vibration Resistant Parts**

# *Nichicon Advantages*

- **Wide Temperature & Endurance Range**
  - Rated up to +150°C
  - Rated up to 10,000 hours
- **Automotive Grade Quality**
  - AEC- Q200 qualified



# *Nichicon Advantages*



- **Vibration Resistant**
  - Added Soldering Strength
  - Up to 30G's of Force
- **Lead Configuration**
  - Available in SMD and Radial Offerings

# Nichicon Offerings



- BC series

- 55°C - +150°C

- Vibration Resistant

- CX series

- 40°C - +135°C

- High Reliability



- BT series

- 40°C - +125°C

- High Voltage (450V)

- BW series

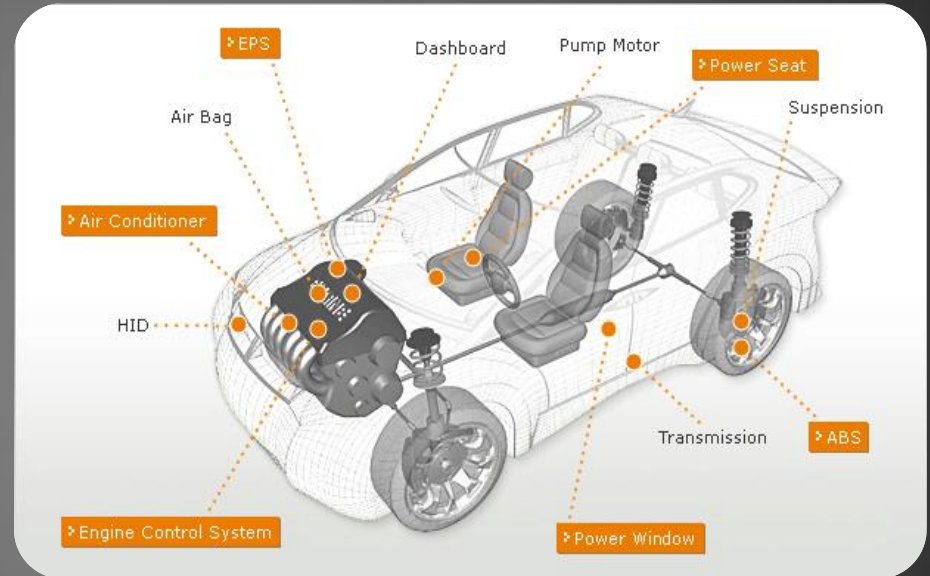
- 55°C - +135°C

- High Temperature (135°C)

# Applications/Focus Markets

## •Automotive

- Air Bags
- Engine Control Modules
- Electric Pumps
- Smart Actuators



# *Applications/Focus Markets*



## • Power Electronics

- DC/DC Converters
- Industrial Control Systems
- AC Electric Motors
- Uninterruptible Power Supplies

# *Nichicon: Industrial Power*



- **Wide Temperature Range of Parts**
- **High Reliability Parts**
- **Vibration Resistant Parts**



# *For More Information*



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**nichicon** **TECH TOPICS**

November 2006 Volume 1, Number 1

**In This Issue**

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

**Advant:** Packaging being done in the South then the more the capacity can meet

**Advant:** Since a general battery is taken for energy

**Advant:** Packaging lead and twice the media

**Advant:** A unique battery is provided the EDLC must be

**Advant:** EDLC is a success

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 Fax: 847-843-2798

**nichicon** **Tech Topics**

September 2010

**In This Issue**

- New Frontload Low Profile Tantalum Series
- Key Advantages
- Markets
- Applications
- Catalog Specifications

**The F98 re**  
 The F98 re provides an of conduct same capac standard re two types, a capacitor of ETL because the induct's spring, a 32

**Advant:** Due to tank can be also capacitor, two times it

**Advant:** The F98 re offers with characterized the applicat

**Advant:** Tantalum I

**Advant:** Reduce can of the tank temperature

**Advant:** Tantalum I

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**nichicon** **Tech Topics**

January 2010

**In This Issue**

- Polymer Capacitors
- Key Advantages
- Markets
- Applications

**Nichicon's New FPCAP Polymer Capacitors**

**Advant:** An advanced in the use of silicon with low in ETL has led to a major component and by design and all with capacitor an increase in a more advanced use with other aluminum as high reliability

**Advant:** Available in a color capacitor for temp and contribute to its reduced noise

**Advant:** There are key advantages

**Advant #1:** Low Polymer aluminum's inherent electrical

**Advant #2:** It has the high rate greatly reduced o

**Advant #3:** Its polymer film high

**Advant #4:** It is ETL and capacitor

**Advant #5:** G

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**nichicon** **Tech Topics**

October 2010

**In This Issue**

- Electric Double Layer Capacitors (EDLC)
- The Newest EverCAP-UV
- Markets
- Applications

**UV 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 capacitors (EDLCs) 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 1 to 30 seconds, therefore, it recharges much faster. Hence, 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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