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C H A R G E

July 2025

A Technical News Journal from Deki Electronics Ltd

Editor's Desk

Dear Readers,

Over the past four decades, Deki has consistently driven innovation, offering "disruptive" capacitor technologies across various segments of the electronics, electrical, and power industries.

Recently, we developed and released a new series of film capacitors designed to meet the stringent requirements of the automotive industry. A key benchmark in this segment is compliance with the AEC-Q200 standard, which includes two critical tests:

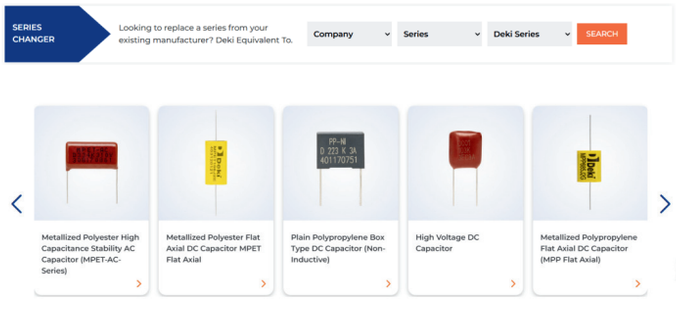
High Temperature and High Humidity Test: Capacitors are subjected to their rated voltage at 40°C and 93% relative humidity for 1000 hours.

Thermal Shock Test: Capacitors undergo 1000 cycles of alternating hot and cold temperature extremes.

We are proud to share that our latest capacitor designs have successfully passed these rigorous tests. As a result, several products in our portfolio are now AEC-Q200 E compliant.

As always, we welcome your feedback and suggestions. Your insights help us improve Charge and continue delivering valuable content and solutions to better serve your needs.

Shankar Raj



Looking to replace your current film capacitor source with Deki Electronics?

If you're planning to switch your existing film capacitor source to Deki Electronics, our website offers a smart and efficient solution — the Series Changer tool. This feature allows you to easily select the brand and series of your current capacitor, and in just a few seconds, it suggests the exact Deki equivalent. It's a quick and reliable way to find compatible replacements without the need for manual cross-checking.

In addition to the suggested alternatives, you'll also find detailed datasheets and technical specifications directly on the website. To make the transition even smoother, we've listed the contact details of our support executives, so you can reach out for any assistance or clarification. Whether you're looking for a single replacement or planning a full switch, Deki's Series Changer makes the process simple and convenient.

INTERNATIONAL YOGA DAY CELEBRATION AT DEKI

On 21st June 2025, Deki proudly celebrated International Yoga Day at its factory premises, reaffirming our commitment to the health and well-being of our employees. The event witnessed enthusiastic participation from approximately 350 employees, who gathered together to embrace the ancient wisdom of Yoga.

Under the guidance of our trained in-house Yoga instructors, employees practiced a variety of Yoga Asanas aimed at promoting physical, mental and emotional balance. Each posture was carefully demonstrated and the benefits of every asana were explained to help participants understand how these practices can be seamlessly integrated into their daily routines for a healthier & stress-free life.

Our Yoga trainers also shared valuable insights on how regular Yoga practice can enhance immunity, improve concentration, reduce workplace stress and boost overall productivity. The session was both engaging and educational, leaving employees inspired to adopt Yoga as a part of their lifestyle.

We express our heartfelt gratitude to the Government of India for spearheading this remarkable health and wellness revolution through the International Yoga Day initiative. At Deki, we firmly believe that a healthy workforce is the foundation of a strong and successful organization. We remain committed to creating a work environment that prioritizes the physical and mental well-being of our people through such meaningful initiatives.

Deki will continue to support and promote activities that nurture the health, happiness and harmony of its employees.

Deki is proud to contribute to powering tomorrow—one capacitor at a time.
B-19 & 20 Sector 58, NOIDA 201 301. Phone +91 120 2585457, 2585458
E-mail pant@dekielectronics.com
www.dekielectronics.com

FILM CAPACITORS FOR EVs AND EV CHARGERS

EMPOWERING E-MOBILITY WITH RELIABLE POWER CONVERSION

As electric and hybrid electric vehicles (EVs/HEVs) continue to transform the global transportation landscape, the demand for highly reliable and efficient power electronic components is accelerating. Among these, film capacitors have emerged as critical enablers — offering superior thermal and mechanical stability, self-healing properties, and long operational life. These characteristics make them ideal for both in-vehicle systems and the wider EV charging infrastructure.

At Deki Electronics, we've been at the forefront of film capacitor innovation for over four decades. Our capacitors are designed and manufactured to meet stringent automotive standards, ensuring long-term reliability, electrical stability, and consistent performance across a wide range of applications — from e-scooters and two-wheelers to high-power EV chargers and electric powertrains.

For sensitive applications such as On Board Chargers and DC-DC converters, where precision and durability are vital, we also offer AEC-Q200 compliant solutions, supported by testing and validation tailored to customer's specifications.

UNDERSTANDING EV CHARGER POWER LEVELS — FROM E-BIKES TO HIGHWAYS

EV chargers vary widely in power rating depending on the vehicle type and use case. Here's a breakdown of the most common levels:

E-Bike and E-Scooter Chargers:
Typically rated 0.25 to 1.5 kW, supporting 48V/60V batteries with slower charge cycles.

AC Level 1 Chargers:
Operate around 2 to 3.3 kW, drawing power from 120V household outlets — ideal for overnight home charging of small EVs and PHEVs.

AC Level 2 Chargers:
Deliver between 7 and 22 kW, enabling faster charging of electric cars, two- and three-wheelers, often used in residential complexes, offices, and public stations.

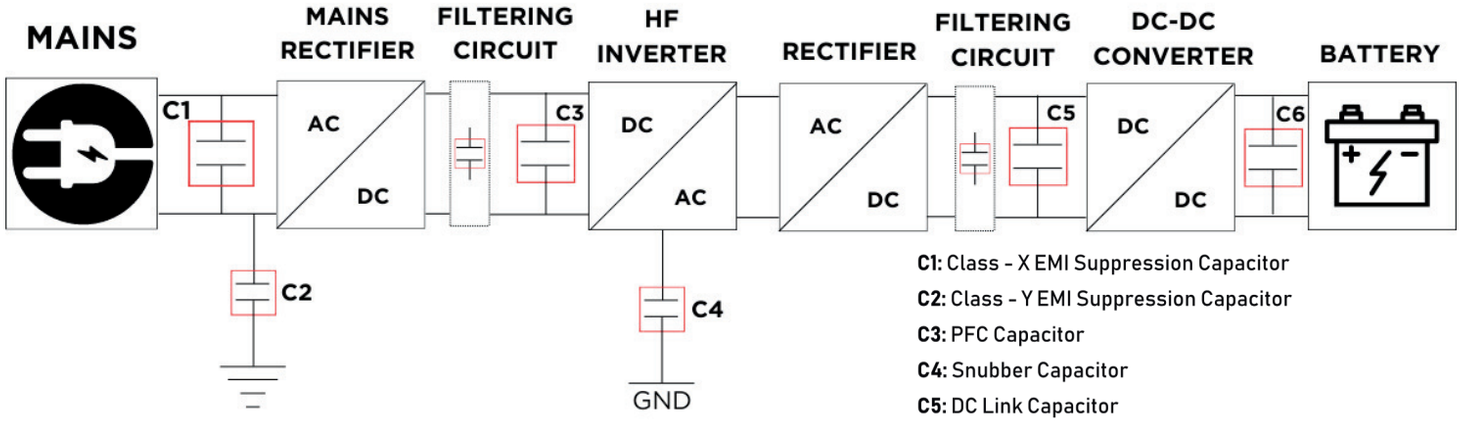
DC Fast Chargers:
Provide 25 to 50 kW, suited for mid-range EVs, widely used in urban commercial locations.

DC Ultra-Fast Chargers:
Output power from 100 kW up to 350 kW, catering to buses, fleet vehicles, and high-end EVs, often found along expressways and in fleet depots.

WHERE OUR FILM CAPACITORS FIT — INSIDE Evs, HEVs, AND CHARGERS

At Deki Electronics, we design application-specific film capacitor solutions that meet the performance, safety, and compliance needs across the entire electric mobility ecosystem — from compact on board electronics and motor controllers to high-power DC fast chargers and EV infrastructure.

Our capacitors are engineered for long operational life, low ESR/ESL, and high thermal and mechanical stability, making them ideal for demanding applications inside electric vehicles (EVs), hybrid electric vehicles (HEVs), and the associated charging systems.



C1: Class - X EMI Suppression Capacitor
C2: Class - Y EMI Suppression Capacitor
C3: PFC Capacitor
C4: Snubber Capacitor
C5: DC Link Capacitor
C6: Filter Capacitor, Capacitor for Filter Application

Fig: Typical power block of an EV Charger showing capacitor application area

CUSTOM HIGH-ENERGY DC LINK SOLUTIONS — BUILT FOR EFFICIENCY

In electric powertrains, DC link capacitors must absorb and stabilize high energy fluctuations between the battery and the motor. Deki offers custom-designed, bus bar-mounted capacitor assemblies that integrate:

- Multiple metallized film bobbins
- Direct bus bar mounting
- Low-inductance layout
- Self-healing dielectric

This design minimizes voltage overshoots during switching and improves overall system efficiency. Assemblies are available up to 2000 VDC, with customizations possible based on application and layout requirements.

WHY FILM CAPACITOR IS REPLACING ELECTROLYTIC CAPACITORS IN EV SYSTEMS

As EV electronics evolve, film capacitors are increasingly replacing traditional electrolytic — especially in DC link and filtering applications — due to their:

- Longer life (often >100,000 hours)
- Lower ESR and ESL, ideal for high-frequency switching
- Self-healing dielectric for improved safety
- Dry construction — no electrolyte leakage
- Higher thermal endurance

These benefits ensure stable, safe, and efficient performance under extreme electrical and environmental stress, making film capacitors ideal for inverters, converters, chargers, and control systems in EV platforms.

KEY APPLICATIONS AND DEKI SOLUTIONS

Application	Capacitor Type	Typical Range	Key Requirements	Deki Series / Type
Traction Inverter	DC Link	0.68–5000 µF/ 450–3000 VDC	High ripple current, vibration resistance, long life	91 – DC Link Plastic Box 292 / 293 – DC Link Plastic Round 297 – DC Link Aluminum Round
	Custom build - High-Energy DC Link	>200 µF / up to 2000 VDC	Low inductance, bus bar-mountable, long life	398 – DC Link Custom Bus bar-Mount Plastic (on request)
On Board Charger (OBC)	PFC, Filter, DC Link	0.68–5000 µF / 450–3000 VDC	Thermal endurance, compact packaging	68 – AC & Pulse PP-MPP Box 66 - AC & Pulse MMPP Radial 91 – DC Link Plastic Box 297 – DC Link Aluminum
	EMI Filtering – X2 (L-L)	0.01–10 µF / 310 VAC	High Surge resistance, THB grade	207 – Class X2 Normal Grade With UL and ENEC approval 151 – Class X2 THB Grade With UL and ENEC approval
	EMI Filtering – Y2 (L-G)	0.001–1 µF / 300 VAC	Safety, leakage control	33 – Class Y2 Normal & THB Grade
DC-DC Converter	Snubber, Filtering	0.1–10 µF / 800–1600 VDC	DV/DT Endurance, Low ESR, High peak current	121 – Snubber PP-MPP Axial 150 – Snubber MPP-MPP Axial
Motor Controller / PFC	AC & Pulse (LLC / PFC)	0.47–10 µF / 250–3000 VDC	Low ESR, thermal stability, high-frequency switching, High peak current	66 – AC & Pulse MMPP Radial 68 – AC & Pulse PP-MPP Box 29 – AC & Pulse PP-MMPP Box 30 – MPP-DC Box
Battery Management System	Decoupling / Bypass	0.1–2.2 µF / 63–400 VDC	Long life, Insulation resistance	02 – MPET-DC Radial 04 – MPP-DC Radial 15 – MPET Box miniature 16 – MPET Box Sub miniature

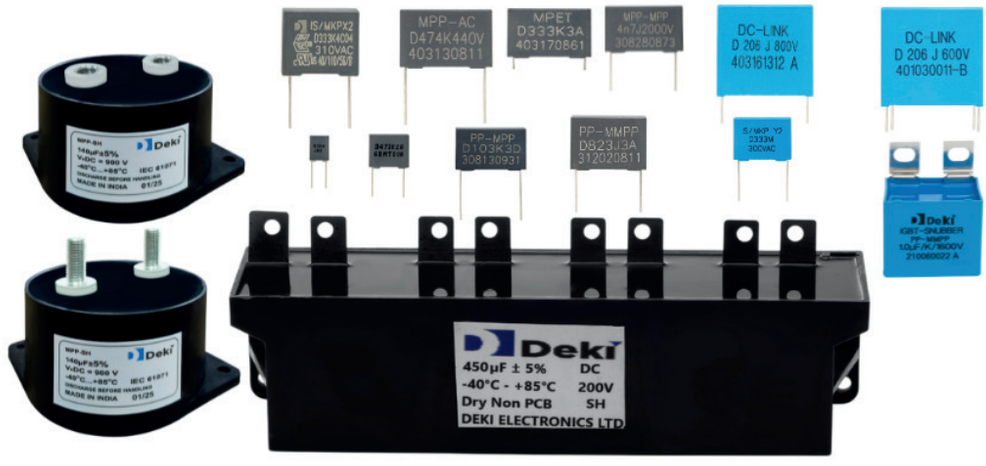
We offer both X2 and Y2 capacitors for effective EMI suppression in AC input stages. Y2 types provide line-to-ground noise protection in high-safety applications, while X2 capacitors protect against differential-mode transients.

Our LLC resonant capacitors, built using double-side metallized polypropylene film, offer low ESR, high ripple current capacity, and superior frequency stability — making them a preferred choice for high-performance EV chargers and on board power systems

MAKE IN INDIA — POWERING THE GLOBAL EV MOVEMENT

As India accelerates its EV transition under the Make in India and FAME II initiatives, local sourcing of critical components is more important than ever. Deki Electronics, an IATF 16949-certified company, is proud to offer indigenously developed, globally certified film capacitors that power the Indian and global EV industries.

Whether you're an EV start-up, a Tier-1 automotive supplier, or an energy infrastructure company, Deki partners with forward-thinking innovators to deliver tailored capacitor solutions that meet today's high-voltage, high-efficiency, and high-reliability demands.



Deki Electronics Ltd. – Engineering Confidence in Every Capacitor

Deki Celebrates International Environment Day!

On 5th June 2025, Deki proudly celebrated International Environment Day at our premises with great enthusiasm!

To mark the occasion, we organized a fun and interactive Environment Quiz at our Factory Main Gate. Participants picked question slips and gave verbal answers — and yes, instant prizes were handed out to the winners!

It was a wonderful way to raise awareness and test our knowledge about the environment.

Let's continue to stay informed, take small steps every day, and work together for a greener tomorrow.

Deki Joins Hands with Goonj for a Purposeful Cause

In a heartwarming display of unity and compassion, Team Deki came together to support Goonj's "Don't Pack Your Unwanted Woollens" initiative—a campaign aimed at giving new life to everyday essentials and spreading warmth to underserved communities.

Throughout April 2025, our team conducted an enthusiastic collection drive, rallying employees across the organization to donate generously. As a result, we gathered approximately 270 kilograms of useful items, including clothes for men, women, and children, school uniforms, shoes, slippers, books, and more.

What made this effort truly special was the wholehearted involvement of the team—not just in collecting items, but in carefully sorting, packing, and preparing every contribution with respect and dignity. On May 5th, 2025, our collective effort culminated in the successful delivery of these materials to the Goonj office. This biannual exercise was initiated 13 years ago.

This initiative was more than just a donation drive—it was a powerful reminder of the impact we can create when we come together with purpose. At Deki, we are proud to support Goonj's mission and are grateful for the opportunity to make a meaningful difference in the lives of others.

Employee Satisfaction Survey – February 2025

The Employee Satisfaction Survey conducted in February 2025 revealed encouraging trends in workplace engagement across all employee levels. Covering leadership, work-life balance, career growth, compensation, and workplace culture, the survey reflected growing satisfaction and a high level of employee involvement.

Executive Category Employees:
Satisfaction rose from 77% (Aug 2024) to 79% (Feb 2025).
Participation rate: 95%.
The increase reflects the positive impact of initiatives implemented following prior feedback.

Non-Executive Category Employees (including apprentices):
Participation rate: 98%, showing high engagement.
Satisfaction score: 87%.

Key areas of focus included clarity in work instructions, training and development and career advancement opportunities.

To maintain this momentum and address remaining concerns, the HR team is working closely with leadership and departmental heads to implement targeted corrective measures.

The results reaffirm the organization's commitment to continuous improvement through employee feedback and reflect a strong, engaged and motivated workforce

External Customer Satisfaction Survey

At Deki Electronics, the External Customer Satisfaction Survey is a biannual initiative that has guided our continuous improvement journey for the past twenty-one years. This long-standing practice enables us to gather valuable feedback directly from our customers, helping us identify strengths and areas that require attention.

We are pleased to share the results from the most recent survey conducted in June 2024, based on responses from our valuable customers. We are proud to report an overall customer satisfaction score of 92.48 percent. This improvement reflects significant progress in key areas including quality, delivery, professionalism, the willingness of customers to recommend Deki, and the overall perception of the company.

One of the most encouraging outcomes is a Net Promoter Score (NPS) of 93 percent, indicating a strong level of customer loyalty and satisfaction. As we approach the milestone of twenty-one years of conducting this survey, we remain committed to learning from our customers and enhancing our performance to serve them better.

We thank all our customers for their trust and continued support. Their feedback is the foundation on which we build our future.