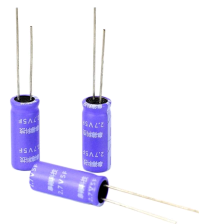
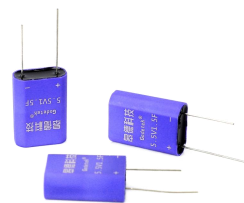
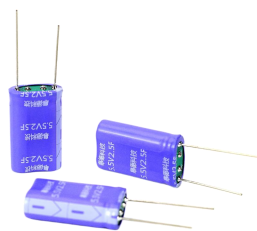
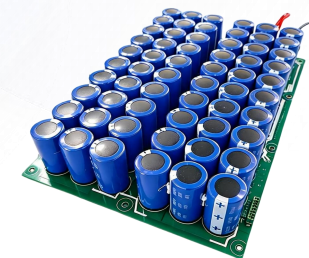


1818 Xingping 2nd Road, Pinghu, Jiaxing, Zhejiang, China

www.godecap.com

Godetek

Professional Supercapacitor Manufacturer



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Why Choose Us

PART ONE

Company Profile



01

Company Profile



Godetek (Zhejiang) Co., Ltd.

Focused on Supercapacitor R&D and Manufacturing

Founded in 2020 in Pinghu National Economic & Tech Development Zone, Jiaxing. A vertically integrated supercapacitor R&D, manufacturing and sales base - National High-Tech Enterprise.

Our range covers wound, screw-terminal and tab-less laser welded series - from low-capacity modules to high-power cells, all in-house. Serving energy storage, rail transit, telecom towers, wind pitch, industrial backup power and more.

Dedicated Staff **100+**

Monthly Capacity **15M+ Units**

Production Base **5000m²**

Industry Expertise **10+ Years**

+

Company Profile

2020.6

Founded with a focus on supercapacitor R&D and manufacturing

2021.09

Passed ISO 9001:2015, SGS, State Grid testing, and RoHS certifications

2022.12

Awarded National High-Tech Enterprise certification

2023.12

Certified to IATF 16949, ISO 14001 and ISO 45001; recognized as Jiaxing Municipal R&D Center

2025.12

Continued R&D investment expansion; introduced laser welding and lithium-ion capacitor (LIC) product lines

Company Profile



Shanghai & Suzhou Office

Fintech, new retail, advanced manufacturing and major SOEs in East China - a global strategic hub in the Yangtze Delta.

Shenzhen & Changsha Office

National tech innovation hub with the strongest high-tech and electronics cluster. Changsha is a central pivot connecting east-west and south-north China.

Shenyang & Zhengzhou Office

At the center of Northeast Asia, core of Mid-South Liaoning city cluster, covering the three Northeast provinces and eastern Inner Mongolia. Zhengzhou radiates nationwide.

Company Profile

Inside Our Factory

Automated in-house factory: annual output of 180M radial-lead supercapacitors



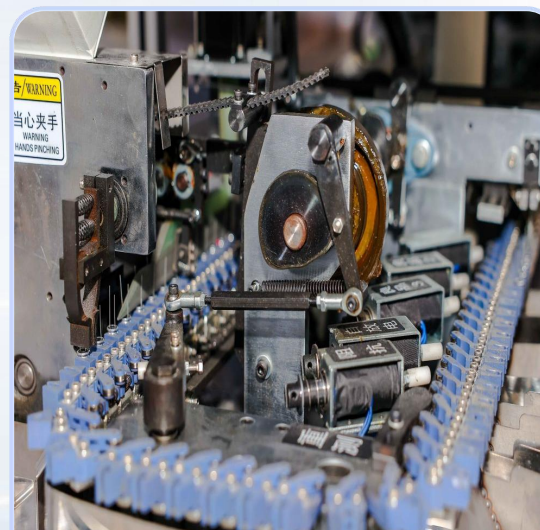
Precision Electrode Coating

Automated coating lines ensure uniform electrodes - the foundation of core performance.



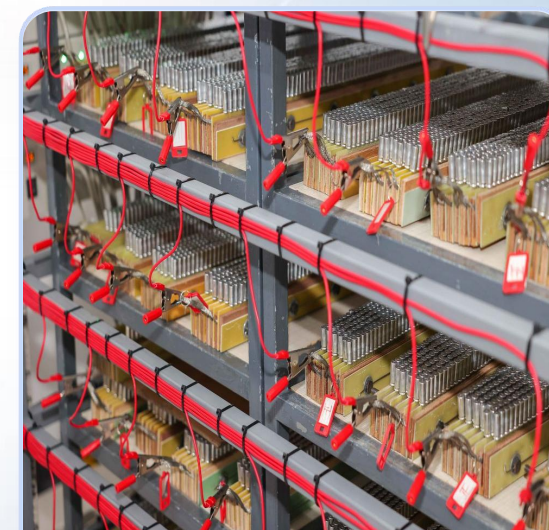
Fully Automated Assembly & Sealing

Fully automated assembly and strict sealing guarantee hermeticity and long-term stability.



Full Testing & Grading

Every cell gets full electrical testing and graded screening to control factory defects.



High-Temp Aging & Reliability

Simulated harsh-condition aging removes latent defects and extends equipment life.

Honors & Certifications

Zhejiang Provincial Tech-based SME

IATF 16949:2016 Certification

National High-Tech Enterprise (2025)

ISO 9001 Quality Management System

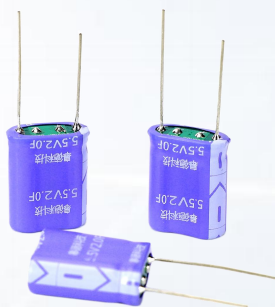
ISO 14001 Environmental Management

ISO 45001 Occupational Health & Safety



PART ONE

Products



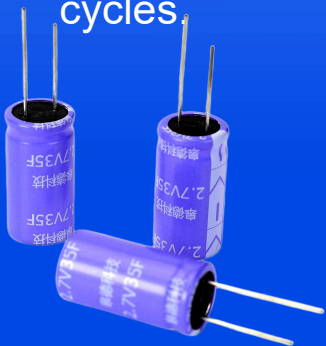
02

Products

Godetek's three series cover mainstream supercapacitor form factors. One factory covers all - no need for multiple suppliers.

Small Wound Series

5.5V gel/sleeve modules (0.47F-2.5F) and 2.7V radial cells. Compact, PCB-mount, no voltage divider, moisture & vibration resistant, stable -40C to 85C, 500K+ cycles



Screw-Terminal Series

Bolted screw-terminal cover for medium/large cells. Low ESR, high current, long life, fast charge/discharge, secure mounting.



Tab-Less Laser Welded Series

Tab-less structure + laser welding. Robust terminals, lower ESR. Ultra-high-current charge/discharge; stacks for energy storage systems.



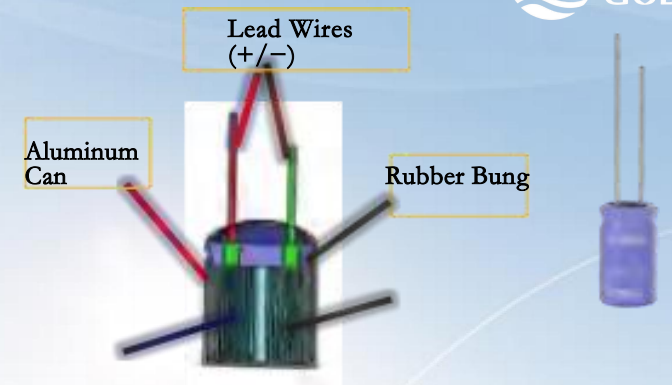
Li-ion Capacitor (LIC) Series

-40 to 70C dual energy storage, improves low-temp Li charging. Tab-less low ESR, 30C continuous / 50C pulse, >30,000 cycles, ideal for high-rate pulse applications.



Featured Products

Leakage Risk Analysis for Radial-Lead Supercapacitors



Risk: Sealing Defects

Lead-hole sealing relies only on can crimping, which deforms the bung and squeezes the lead stem, causing seal failure. Factors:

- (1) visual defects on can/bung/lead;
- (2) improper matching;
- (3) inadequate crimp dimensions;
- (4) contamination on sealing surface.

Risk: Alkali Creep

Alkaline matter at the negative electrode creeps along the lead stem and leaks outside.

Risk: Bung Aging

Bung material is typically butyl rubber (IIR), which undergoes thermal-oxidative aging in service.

Featured Products

Core Design: Leakage Prevention



Double-Crimp + Epoxy Seal Design

High-grade aluminum can. First crimp at the bung, then a second crimp on top to lock the bung. Epoxy resin is poured above the bung top - even minor leakage gets sealed inside and cannot reach the PCB.

The resin layer blocks air, moisture and light to slow bung aging, extending service life and preventing leakage.

Featured Products

Core Design: Leakage Prevention

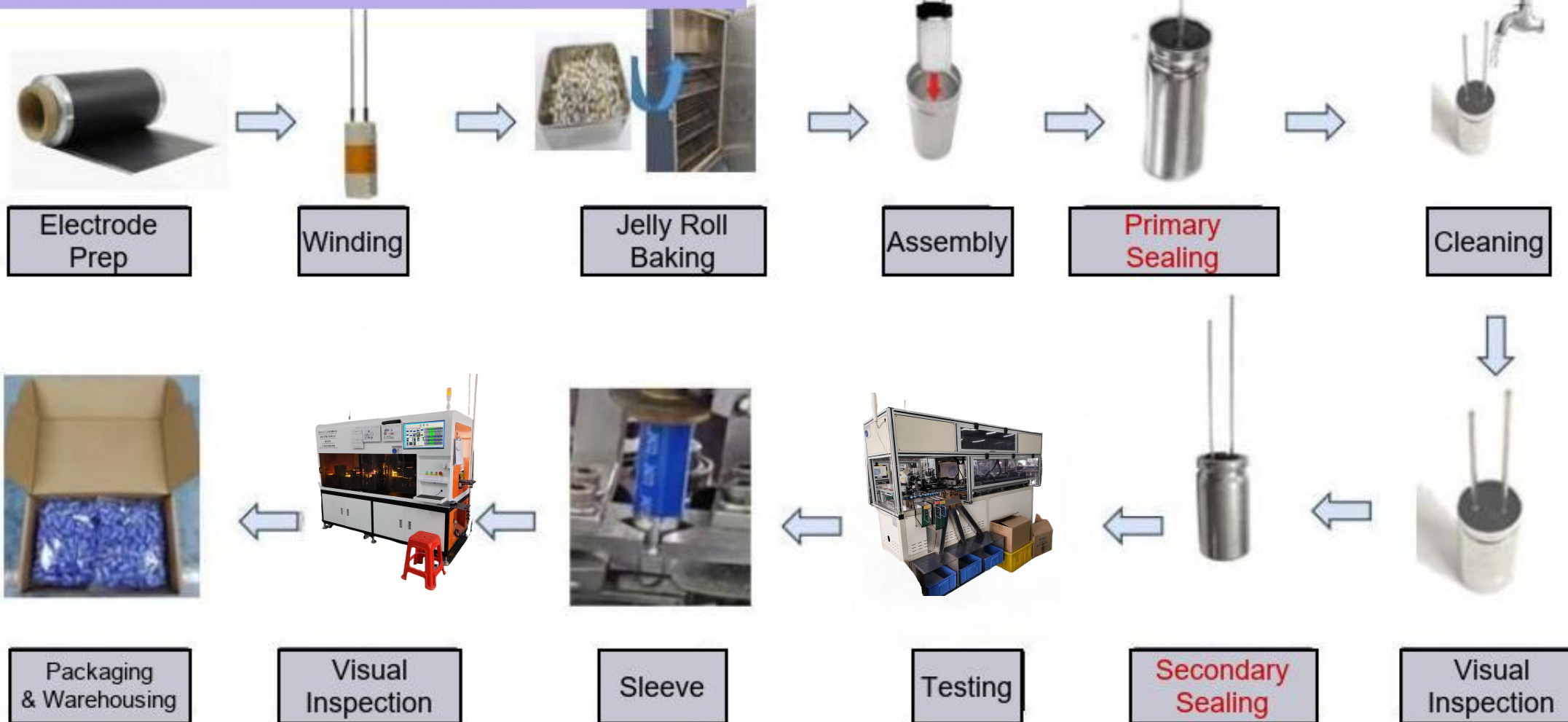


Plastic Case + Epoxy Seal

- Slows bung aging in high-temp, high-humidity environments.
- Reduces leakage risk and PCB corrosion from escaping electrolyte.

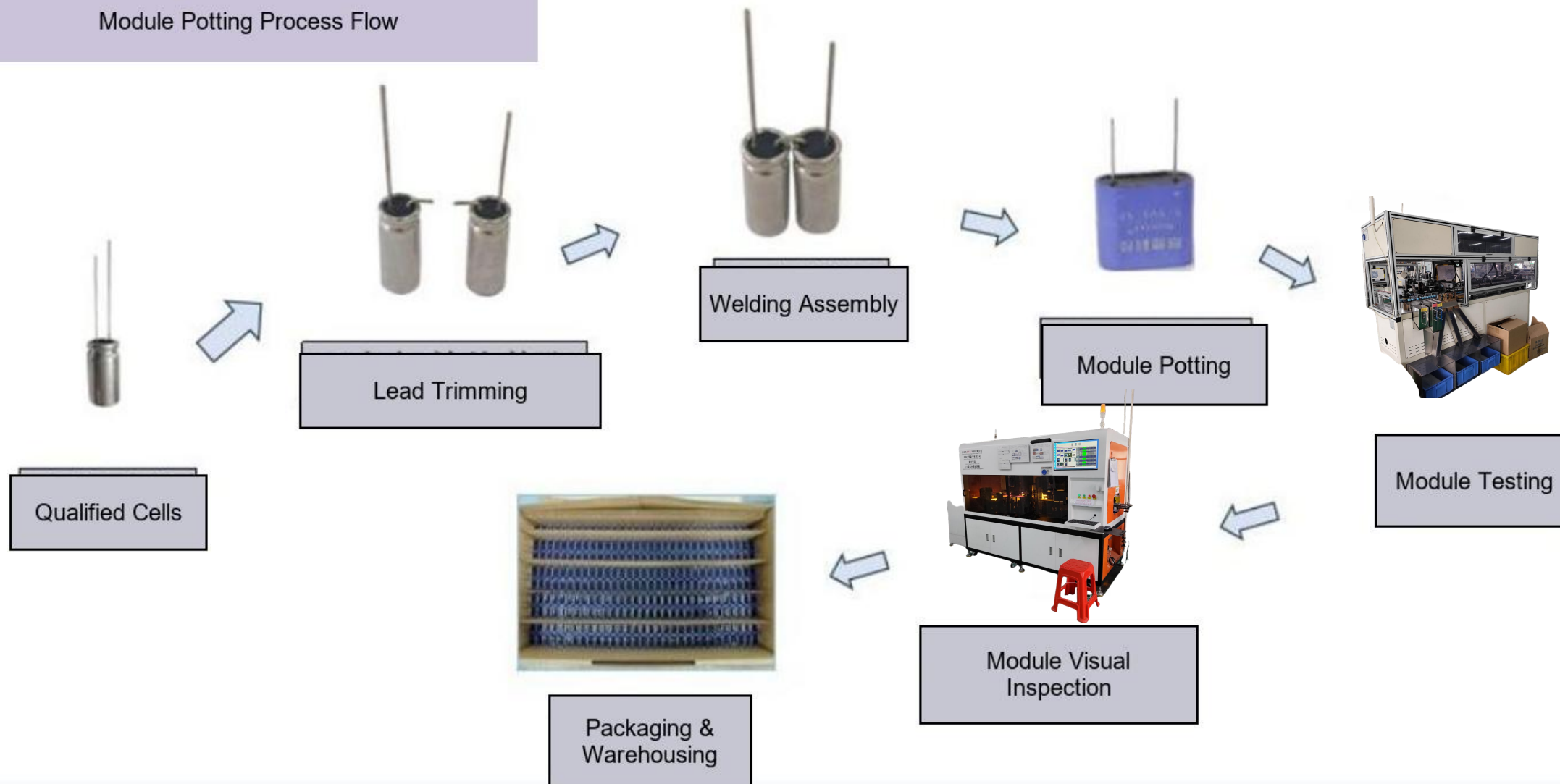
Process Improvement

Cell Manufacturing Process Flow



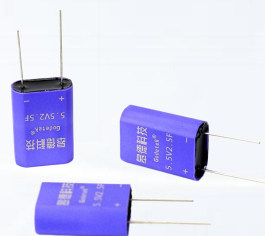
Process Improvement

Module Potting Process Flow



PART ONE

Applications



03

AI Data Centers, Grid Energy Storage,
Medical, Automotive, Aerospace & Defense,
New Energy, Industrial Automation, Smart
Grid

Three Critical Risks of PLC Applications

In complex grid environments, is your PLC module facing these challenges?



01 Voltage Sag Reset

Transient voltage dip (10-20%) resets the MCU, breaking the link and losing data?



02 Power-Loss Disconnection

When mains cuts out, the module can't save state or send the final heartbeat - an operational blind spot?



03 High-Temp Aging

Outdoor boxes run at 60C+; ordinary batteries/caps age fast, causing batch field failures?

Communication interruptions often stem from unstable energy.

PLC Applications

Scenario 1: Smart Meters - Reliable Comms for Massive Endpoints



Three Core Functions

- 1 Power-Loss Protection (Last Gasp)**
Millisecond-level seamless takeover on main power failure. Ensures the last data record uploads to the concentrator before shutdown.
- 2 Pulse Power Compensation**
Delivers 1.5-2A peak current during PLC transmission, stabilizing bus voltage and improving signal quality.
- 3 Ultra-Long Life Match**
16+ year service life, matching smart meter's 10-15 year design life. No replacement needed.

Typical Specs

2.7V 10F / 5.5V 1.5F

Battery pack • Operating temp -40 to +85C • State Grid compliant

Performance Results

99.5%

Comms Success Rate

-60%

Field Maintenance Rate

PLC Applications

Scenario 2: Distribution Terminals

01 Pain Point: Remote control commands fail, status feedback missing.

02 Godetek Solution: 64V 20F pack (DTU/FTU)

Value: as black-start energy source, terminals come online instantly on grid fault recovery and report fault data.



PLC Applications

Scenario 3: Concentrators - Power-Loss Comms Backup for District Head Nodes

State Grid Mandatory Requirement

State Grid requires concentrators to run at least 1 min after power loss (~200mA, 5V), ensuring timely event reporting.

Why Not Batteries?

Outdoor temp swings cause Li batteries to degrade in 3-5 years, far short of 10+ year concentrator life. Supercaps offer 500K+ cycles, maintenance-free.

Three Functional Values

- 1 1-Min Power-Loss Comms Backup**
Meets State Grid specs. Maintains 4G/PLC comms after power loss for event reporting and data storage.
- 2 Multi-Mode Pulse Support**
Supports peak power for 4G, GPS and HPLC PLC simultaneously.
- 3 Wide-Temp Outdoor Long Life**
-40 to +80C operation, 10+ years maintenance-free, lowering lifecycle cost.

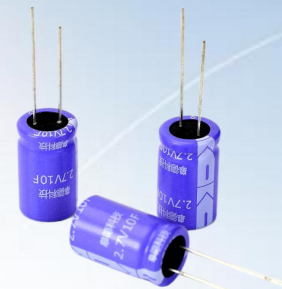


Typical Spec: 5.5V 165F

PLC Applications

Scenario 4: Industrial PLC Modules - The Comms Lifeline

Widely used in industrial automation, smart buildings, EV charging, smart cities



01

Momentary Sag Guardian

Large equipment start/stop causes brief grid sags. Supercaps take over seamlessly, keeping PLC signals alive.

02

Data Packet Escape Channel

On unexpected power loss, supercaps finish the current data packet and save critical state - zero data loss.

03

Industrial-Grade Reliability

-40 to +85C industrial range.
Vibration/shock resistant. MTBF > 500,000 hours.

Typical: 2.7V 10F Industrial Supercapacitor • RoHS/REACH Compliant

Critical Risks in NEV Applications

Why can't traditional batteries meet new automotive electronics demands?

P

Escape Crisis

After a collision or water ingress, 12V lead-acid power failure can lock the doors and disable the electric sunroof.

S

Safety Hazard

Engine bay is hot and vibrating - Li batteries risk swelling and fire.



E

Cold-Weather Failure

At temperatures below -20°C , lithium battery capacity degrades dramatically, resulting in failure to crank the engine.

T

Battery Life Shortfall

Frequent start-stop and recording reduces battery life far below vehicle life.

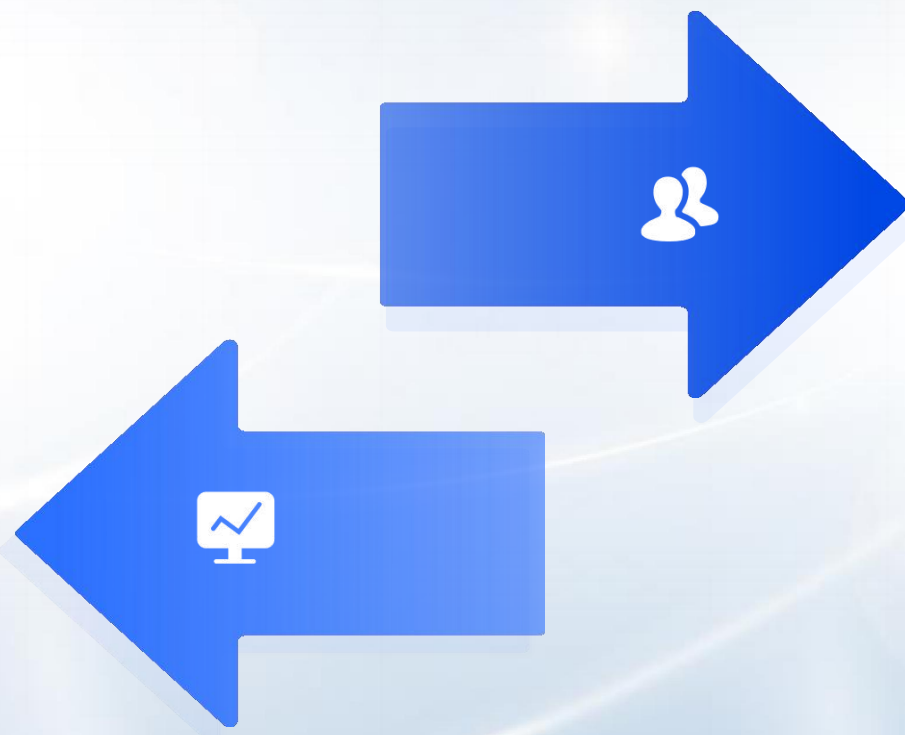
New Energy Vehicles

Scenario 1: Door Locks & Emergency Sunroof Release



Submersion & Rollover

Submersion, rollover and other critical power-loss scenarios where doors won't open.



Godetek Solution

12V supercap pack independent of main power, provides emergency unlock power. Forces door/sunroof open within 3 seconds of main power cut - the golden escape window.

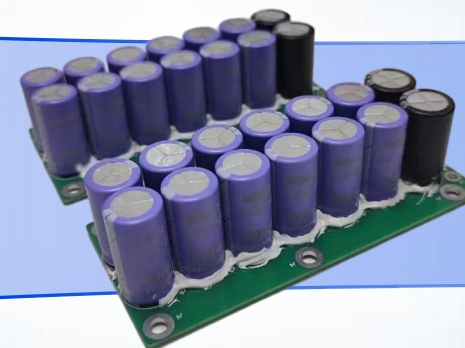
New Energy Vehicles

Scenario 2: Engine Bay Fire Suppression



01

02



Pain Point

Engine bay temps $> 100^{\circ}\text{C}$ - Li batteries prone to thermal runaway.

Godetek Solution

High-temp, high-safety supercap pack
Continuous monitoring after shutdown,
millisecond fire trigger, lifetime maintenance-free.

New Energy Vehicles

Scenario 3: Factory-Fitted ETC (On-Board Unit)



Policy Mandate: Standard on New Cars

Ministry of Transport regulation No.13 mandates factory ETC on new cars.

Godetek Product: Li-ion Capacitor (LIC)

LIC serves as the core energy component for factory ETC, matching automotive requirements.

Core Performance : Long-Term Stability

Leakage current $< 0.2\text{mA}$, 10+ year life (95C/2000H verified), operating temp -40 to $+95\text{C}$.

New Energy Vehicles

Scenario 4: Automotive Monitoring & DVR Power-Loss Protection



Product Pain Point

Video loss the moment the vehicle shuts off.

Godetek Solution

Low ESR supercap, high-temp/high-humidity series.

Godetek Supercap Advantages

Maintains power 5-10 seconds after cutoff to ensure complete video save.

New Energy Vehicles

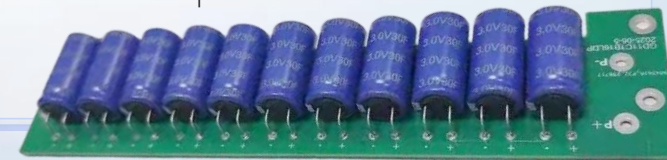
Scenario 5: Truck/Bus Parking Air Conditioning

Core Pain Points

- - After hours of parking, lithium battery SOC runs low. When the engine restarts, the high inrush current causes a sudden voltage drop, easily triggering BMS protection or shutting down the A/C compressor.
- Under low temperatures or deep-cycle conditions, lithium discharge capability fades — leaving you stranded with a dead battery.

Key Advantages

- - One-tap emergency start protects the lithium pack from over-discharge, extending parked battery service life by 2–3×.
- Reliable operation in -40°C extreme cold; 10 years maintenance-free with zero risk of fire or explosion.
- BMS integrates multiple protection functions, with 4G/Bluetooth status reporting.



Standard Configuration

- - A 10S–12S 24V 2.5F supercapacitor module is connected in parallel with the parked lithium pack as an external BMS power buffer, jointly solving the industry pain point: parked A/C use → battery drain → failure to start.

New Energy Vehicles

Scenario 6: Start-Stop Systems



01

Voltage Sag

On engine restart, 12V bus drops below 9V, causing infotainment, cluster and ADAS resets - user complaints.

Battery Life Degradation

Frequent 200-500A pulse discharge accelerates sulfation, cutting AGM life from 5 to 1.5-2 years.

Cold-Start Failure

Below -20C, lead-acid internal resistance rises, disabling start-stop or causing hard starts.

Limited Energy Recovery

Limited charge acceptance for regenerative braking, restricting fuel savings.

02

Godetek Supercap Advantages

Voltage Stabilizer: No dip on restart, electronics don't reboot.

Battery Companion: Shares cranking load, extends battery life.

Cold-Weather Guardian: One-touch ignition at -40C.



Why Do Robots Need Supercapacitors?

Power Density - Explosive Output

10-20x Li battery power density. Instant massive output for robot emergency stops, hard starts and load climbing.

Cycle Life - Built to Last

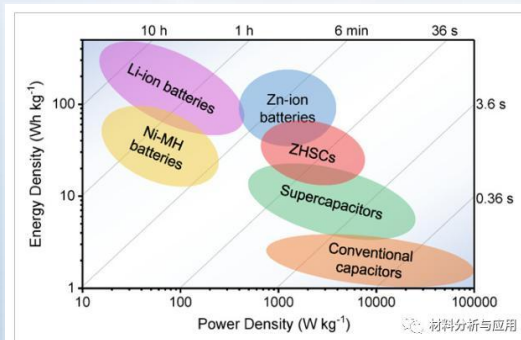
500,000+ cycles - 500x Li life. No memory effect, minimal fade, nearly matching robot life.

Wide Temp - Cold-Ready

Stable from -40 to +85C with virtually no low-temp degradation. Solves cold-region capacity drop.

Lifecycle - Maintenance-Free

No periodic replacement. Unlike Li batteries every 2-3 years, supercaps cut O&M costs and downtime.



The Ragone Plot shows supercaps' absolute power density advantage over Li-ion. For short, high-rate pulse output, supercaps are irreplaceable - ideal for robots, EVs and other equipment needing both energy efficiency and instant response.

Robotics

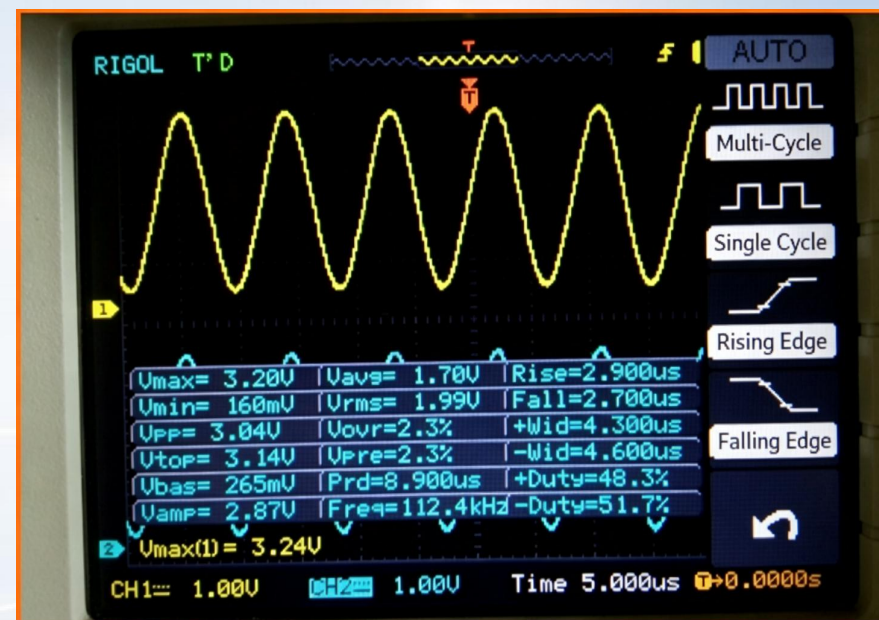
Scenario 1: Industrial Robot Power-Loss Safety

01 Pain Point: Sudden Power Loss Causes Cascading Failures

On e-stop or power loss, servo bus drops within 50ms, losing encoder home. Restart takes 3-10 minutes to re-home; delayed brake can cause arm drop and collision.

02 Solution: Supercap Pack Parallel to DC Bus

16V/48V high-power supercap packs parallel to the servo DC bus. On power loss, seamless switchover provides ≥ 1 second of stable power for safe shutdown.



Physical Anti-Drop

Brake coil energizes instantly, locking the arm and preventing drop.



No Re-Homing

Encoder data maintained. Device resumes from breakpoint on power-up.



System Integrity

Controller gets enough time to save parameters and programs in order.

Measured Waveform: Bus Voltage Stable

Oscilloscope capture: with supercap engaged, no voltage dip - stable until safe shutdown, eliminating runaway from sags.

Robotics

Scenario 2: AGV/AMR Battery Life Extension

01 Pain Point: High Inrush Currents Prematurely Age Batteries

During AGV start/stop, climbing and braking, batteries see 3-5x rated current surges, accelerating SEI rupture and dendrite growth, shortening battery life.

02 Solution: Parallel Supercap Peak-Shaving

Battery + supercap parallel architecture. Supercap delivers peak current; battery handles steady load. Zero-damage battery protection.

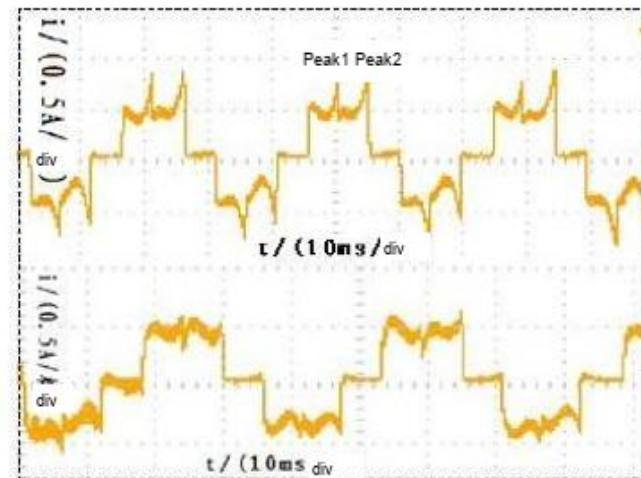


Fig.13 Stator current without and with compensation filter phase delay

Measured current waveform: peaks significantly flattened after compensation

Battery Peak Current Reduction

60% (150A → 60A)

Battery Temp Rise Reduction

53% (15°C → 7°C)

Expected Cycle Life Improvement

87% (800 -> 1500 cycles)

Robotics

Scenario 3: Cobot Peak Power Compensation Small Battery • Big Burst • Long

Runtime

01 Pain Point: Power Fluctuation Sizing

Dilemma

Cobot joints frequently accelerate/decelerate, peak hits 3-5x average. Battery-only sizing causes oversized, heavy pack and shortened life.

02 Solution: Hybrid Supercap + Battery

Architecture

Supercap as power buffer handles peak demands; battery sized for average load only. Peak shaving solves the power vs capacity matching problem.

30-50% Weight Reduction

Battery size drastically reduced, lowering payload.

<1ms Response

Zero-delay power output, more responsive.

Significantly Extended Life

Avoids deep cycling, reduces temperature rise.

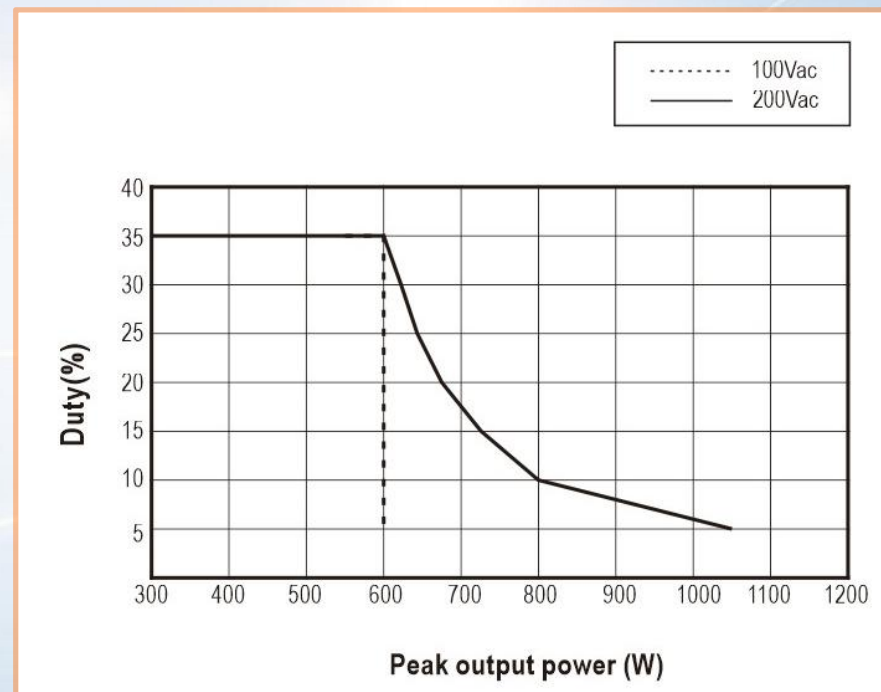


Chart: with supercap engaged, battery power curve smooths out, avoiding current shock for efficient, safe operation.

Robotics

Scenario 4: Humanoid Robot High-Burst Power **Make Robots Jump and Run - Breaking Through Power Limits**

01 Pain Point: Power vs Endurance Conflict

Walking and jumping demand huge instantaneous power. Pure battery solutions struggle to balance burst performance and endurance.

02 Innovation: Hybrid Supercap + Battery Power

Supercap provides instant burst; battery handles steady power. Together they cover peak demand.

High Burst

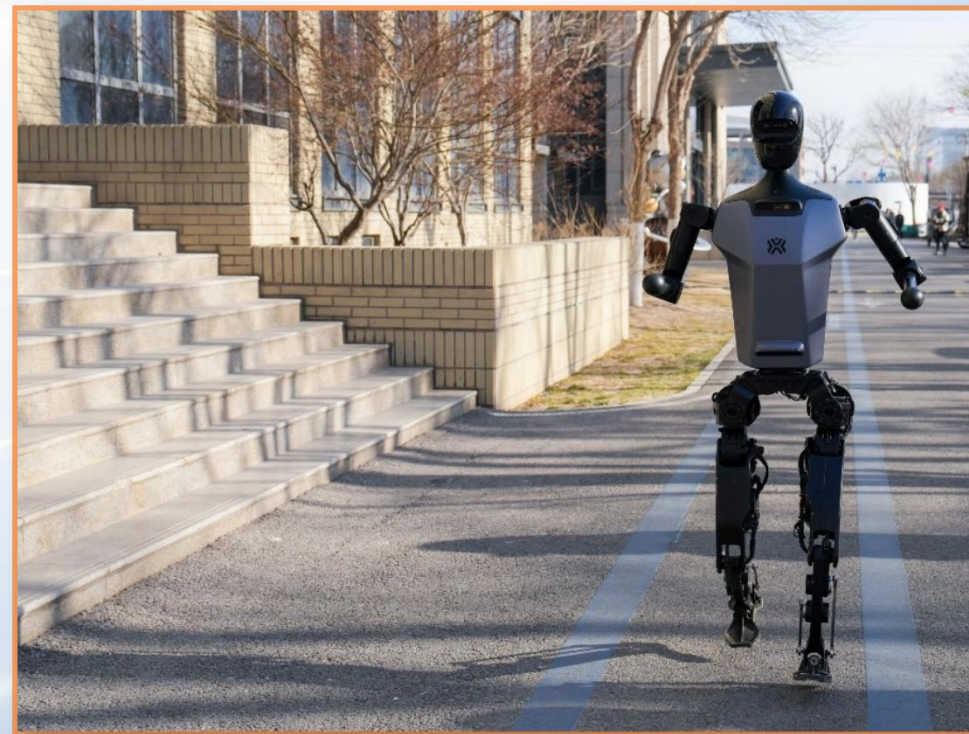
Enables jumping, fast running and high-dynamic motions.

+20%

Significantly extended endurance at same battery capacity.

More Agile

Reduced weight and inertia, more agile response.

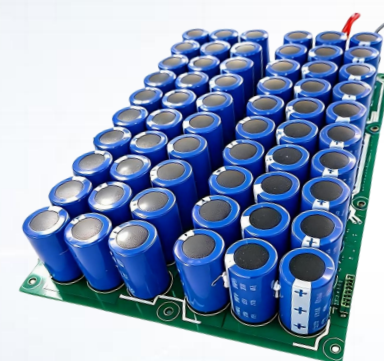


Supercap power solutions support explosive motion on complex terrain, improving mobility and endurance.

Robotics

Full-Scenario Product Matrix for Robotics

Series	Voltage	Capacitance	Applications	Form Factor
RTC Backup Series	2.7V~5.5V	0.1F~10F	Encoder Hold-Up	DIP/SMD
Small Modules	16V~48V	1F~10F	Industrial/Cobots	Plastic/Aluminum Case
Medium Modules	48V~160V	5F~100F	AGV/Humanoid Robots	Metal/IP54
Large Modules	160V~900V	1F~100F	Heavy-Duty AGV/Large Machines	Custom Chassis



High-Power Modules
 High voltage design for robot power systems and energy recovery.



High-Performance Cells
 High energy density and long cycle life for core components.



Deep customization: custom design based on voltage, capacity, mounting space and interface protocol.

PART ONE

Why Choose Us



04

Competitive Advantages

Godetek's Differentiated Competitive Advantages



Solution Provider

We know power and capacitors: we study grid waveforms and communication protocols, providing targeted selection tools.

Ultra-Fast Response

3-day sampling, 7-day mass production for fast-iterating PLC industry.

Cost Optimization

High cost-performance, helping improve product margins.

Auto-Grade QC

Above-industrial screening (100% ESR sorting, high-voltage screening) ensures batch consistency.

Partners

Strategic Partners

Partnership: Technical support, on-site application solutions,
win-win cooperation.

K900er 科工电子



DDPAI 钉钉拍

HETER

SFERE



海兴电力科技
Hexing Electrical Co., Ltd.

艾锐达

 **Acrel**[®]

NARI
南瑞集团
NARI GROUP CORPORATION

THANKS

We Look Forward to Working With You!

Tel

86-0573-85558818

Email

Sales@godetek.com

Website

www.godecap.com

Address

1818 Xingping 2nd Road, Pinghu, Jiaxing, Zhejiang, China