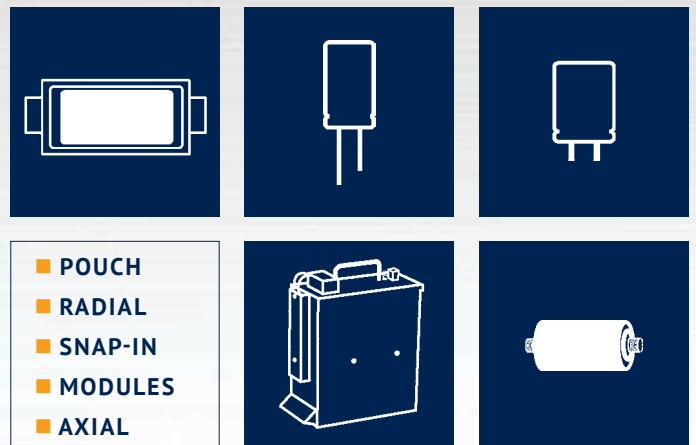




ENERGY CAPACITORS

2025/2026



ENGINEERED SOLUTIONS

JIANGHAI EUROPE
Electronic Components GmbH

Capacitors from Jianghai

JIANGHAI EUROPE ELECTRONIC COMPONENTS GMBH IS THE EUROPEAN SALES ORGANIZATION OF NANTONG JIANGHAI CAPACITOR CO., LTD., NANTONG (CHINA). SINCE 2003, SALES, MARKETING, TECHNICAL SUPPORT, CUSTOMER SERVICE TEAM AND WAREHOUSE OF JIANGHAI EUROPE ELECTRONIC COMPONENTS GMBH ARE LOCATED IN KREFELD AND KEMPEN (GERMANY).

» ELECTROLYTIC CAPACITORS

Jianghai has grown since its foundation in 1958 to become the largest Chinese manufacturer of aluminum capacitors generating revenues of 1,2 billion USD in 2023. While Jianghai started in the beginning with the production of specialty chemicals (e.g., electrolyte solutions), it entered the production of aluminum electrolytic capacitors already in 1970. Since 2023 Jianghai offers SMT Electrolytic Capacitors again.



» INTEGRATION OF PREMATERIAL

More recently, Jianghai extended its production range by integrating high and low voltage anode foil etching and forming facilities. All factories are located in mainland China and Japan: the most important ones are in Nantong (north to Shanghai), in Inner Mongolia, and in Xi'an area. Jianghai is well prepared for further expansion due to its successful entrance to the stock market in summer 2010.

» FILM CAPACITORS

In 2012, the product portfolio was complemented by a range of power film capacitors. For this new business unit, Jianghai also follows the strategy of vertical integration and thus the production comprises the metallization and slitting of the plastic film as well as the assembly of the finished goods. Highly automated production facilities ensure the efficient mass production of film capacitor modules. Driven by the thriving electric vehicle market in China, Jianghai has attained a leading position for the supply of these customer specific components.



» POLYMER CAPACITORS

The year 2013 was marked by a major breakthrough in R&D for polymer aluminum electrolytic capacitors: the voltage proof for these ultra-low ESR products was pushed out to as much as 200V, enabling the utilization of these advanced capacitors in more applications, e.g. in white goods, industrial automation, telecom infrastructure, power supplies, and LED ballasts. Hybrid and Stacked (Chip) Polymer Capacitors were added into the product portfolio in the year 2019.



» ENERGY CAPACITORS

For energy storage applications, Jianghai has developed a range of Lithium Ion-Capacitors (Li-C) based on the well-known EDLC technology. Li-C combine the advantage of many hundred thousand charge and discharge cycles and high energy density, allowing for a wide range of applications in energy storage and recuperation. Jianghai offers EDLC as well as Li-C in various form factors, e.g. in radial, snap-in, pouch or module shape.



» CAPACITOR COMPETENCE CENTER

Global presence of experienced sales and technical marketing experts at offices in Europe, Asia and the Americas ensure the local support of our customers based on sound know-how in all project phases. In 2014 Jianghai Europe has established an additional service for its customers in Europe: Experts for capacitors are awaiting telephone calls or emails at the CCcenter as a kind of hotline for all kind of technical requests.

» CUSTOMIZED PRODUCTS

Jianghai's particular strength as a volume manufacturer is to offer customized products. Jianghai focuses on the demanding professional industrial segment with many power electronics applications. Research and development in collaboration with several specialized university institutes as well as the access to all vital pre-materials enable Jianghai to create engineered, customized solutions to fit smoothly into a specific application. Jianghai is continuously improving processes, thereby enhancing the quality of its products and services. The list of certificates awarded to Jianghai reflects its level of achievement. In the year 2013, the Jianghai Europe sales office has become certified according to ISO9001 and ISO14001.

» CONTACT

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EDLC 15

RADIAL SINGLE CELL TYPE

EDLC: Order Code RADIAL SINGLE CELL	30
EDLC: Technical Specifications RADIAL SINGLE CELL	31

SERIES	CODE	TYPE	TEMPERATURE RANGE	VOLTAGE	INFO	
SRP	PR	RADIAL SINGLE CELL	-40 ~ +70°C	2,7V	Standard	32
SRE	ER	RADIAL SINGLE CELL	-40 ~ +65°C	3V	Enlarged Voltage Range	34
SRQ	QR	RADIAL SINGLE CELL	-40 ~ +85°C	2,7V	Fast Charge/Discharge	36

RADIAL MULTI CELL TYPE

EDLC: Order Code RADIAL MULTI CELL	38
EDLC: Technical Specifications RADIAL MULTI CELL	39

SERIES	CODE	TYPE	TEMPERATURE RANGE	VOLTAGE	INFO	
SRM	MR	RADIAL MULTI CELL	-40 ~ +70°C	5,5V	Standard	42
SRS	SR	RADIAL MULTI CELL	-40 ~ +65°C	6V	Higher Voltage	44
SRO	OR	RADIAL MULTI CELL	-40 ~ +85°C	5,5V	Higher Temperature Range	46

SNAP-IN TYPE

EDLC: Order Code SNAP-IN	48
EDLC: Technical Specifications SNAP-IN	49

SERIES	CODE	TYPE	TEMPERATURE RANGE	VOLTAGE	INFO	
SSP	PS	SNAP-IN	-40 ~ +65°C	2,7V	Standard	50
SSE	ES	SNAP-IN	-40 ~ +65°C	3V	Higher Voltage	52
SSL	LS	SNAP-IN	-40 ~ +65°C	2,7V	Higher Capacitance	54

AXIAL TYPE					
EDLC: Order Code AXIAL					56
EDLC: Technical Specifications AXIAL					57
SERIES	CODE	TYPE	TEMPERATURE RANGE	VOLTAGE	INFO
SGP	PG	AXIAL	-40 ~ +65°C	2,7V	Standard
SGE	EG	AXIAL	-40 ~ +65°C	3V	Higher Voltage

LITHIUM-ION-CAPACITORS 63

RADIAL TYPE					
LiC: Order Code RADIAL					64
LiC: Technical Specifications RADIAL					65
SERIES	CODE	TYPE	TEMPERATURE RANGE	CYCLES	INFO
HBR	BR	RADIAL	-15 ~ +70°C	up to 500 000	Standard
HBRL	BL	RADIAL	-25 ~ +70°C	up to 250 000	Wider Temperature Range
HBE	BE	RADIAL	-25 ~ +70°C	up to 250 000	Highest Capacitance

AXIAL/WELDED COLUMN TYPE					
SERIES	CODE	TYPE	TEMPERATURE RANGE	CYCLES	INFO
HGA	GA	AXIAL	-25 ~ +65°C	50 000	High Power Density

POUCH TYPE					
LiC: Order Code POUCH					74
LiC: Technical Specifications POUCH					75
SERIES	CODE	TYPE	TEMPERATURE RANGE	CYCLES	INFO
HAA	AA	POUCH	-25 ~ +55°C	50 000	Standard
HAE	AE	POUCH	-25 ~ +55°C	50 000	Highest Capacitance
HAH	AH	POUCH	0 ~ +65°C	50 000	Higher Temperature

MODULES (EDLC & LiC) 82

Modules always customer specific and on request.

WARNING

JIANGHAI is not liable for any extent of possible injuries or damages to persons or things, of any kind, caused by the improper application of and/or operating conditions harmful to Energy-Capacitors. Misapplications which may cause failures include, but are not limited to: operating current or peak current or voltage outside the specified range, operating voltage above surge voltage specified, temperature exposure outside of the specified operating temperature range. Examples of harmful operating conditions comprise, but are not limited to: unusual storage or transport temperatures, excessive and/or rapid changes of ambient temperature or humidity, heavy mechanical shock or vibration, corrosive and abrasive particles in the ambient (cooling) air, conducting dust in the ambient (cooling) air, oil or water vapor or corrosive substances, explosive gas or dust, operation under extremely high or low ambient pressure conditions (below or above sea level), superimposed radio frequency voltages, radioactivity. In case of doubt about the impact of operating conditions on capacitor performance, please contact JIANGHAI. Personal safety Electrical or mechanical misapplication of Energy-Capacitors may be hazardous. Personal injury or property damage may result from explosion of a capacitor or from the expulsion of electrolyte due to mechanical disruption or the release of a safety vent of a capacitor. In case of injury or skin or eye exposure to electrolyte, immediately seek professional medical advice. Before using Energy-Capacitors in any application, please read these Handling Precautions, familiarizing thoroughly with the information contained herein. Please check before using any of our Energy-Capacitors if these components fulfill the requirements of your application and that warnings and instructions for use are followed.

WARRANTY

The information contained in this datasheet does neither form part of any quotation nor of a contract, it is believed to be accurate, reliable and up to date. Quality data are based on the statistical evaluations of a large quantity of parts and do not constitute a guarantee in a legal sense. However, agreement on these specifications does mean that the customer may claim for replacement of individual defective capacitors within the terms of delivery. We cannot assume any liability beyond the replacement of defective components. This applies in particular to any further consequences of component failure. Furthermore it must be taken into consideration that the figures stated for lifetime, failure rates and outlier percentages refer to the average production status and are therefore to be understood as mean values (statistical expectations) for a large number of delivery lots of identical capacitors. These figures are based on application experience and data obtained from preceding tests under normal conditions, or – for purpose of accelerated aging – more severe conditions. JIANGHAI reserves the right to change these specifications without prior notice. Any application information given is advisory and does not form part of any specification. The products are not primarily designed for use in life supporting applications, devices or systems where malfunction of these products can reasonably be expected to result in personal injury. JIANGHAI customers using or selling these products for use in such applications without prior written consent of JIANGHAI do so at their own risk and agree fully to indemnify JIANGHAI for any damage resulting from such improper use or sale. This version of the datasheet supersedes all previous versions.

HANDLING GUIDELINES

- (1) Energy-Capacitors must not be used in AC and filtering circuits.
- (2) The actual operating voltage must not exceed the max. specified operating voltage and it must not fall below the min. specified operating voltage.
- (3) Please check the polarity before using. If operated under reverse polarity conditions, the capacitors will not only suffer from a shortened life time, but they may even swell, and electrolyte leakage or other malfunctions may result.
- (4) Environment: The operating temperature has an influence on the life time of the capacitors, and the maximum specified operating temperature must never be exceeded.
- (5) Current drain during discharge needs to be controlled to avoid a voltage drop below the min. voltage of the capacitor. The permissible current drain I_R is usually specified in the datasheet.
- (6) Capacitors in series connection: when capacitors are connected in series connection it must be ensured that the operating voltage of any single capacitor does not exceed to the limit of the max. and min. operating voltages. Systems for balancing and monitoring as well as modules are available on request. Please contact the JIANGHAI EUROPE Sales office for further Information.
- (7) Energy-Capacitors must not be short-circuited. Discharge below the minimum voltage will destroy the capacitor.

PRECAUTIONS

- (1) Prohibition of disassembly
Any attempt to disassemble the capacitor may result in short circuits to the capacitor, which may generate gas, and may cause electrolyte leakage, explosion or other problems.
- (2) Prohibition of dumping capacitors into fire to avoid potential risk of explosion.
- (3) Prohibition of immersing capacitors into water or seawater or any similar liquid.
- (4) Prohibition of using damaged capacitors: If any abnormal features of the capacitors are found (especially such as damages of the package, electrolyte leakage or others) the capacitor cannot be used anymore and must be stored away from open flames.
- (5) Prohibition of short-circuit or use outside the specified operating voltage range.
- (6) Prohibition of reverse voltage.

PRECAUTIONS FOR DEVICES USING ENERGY-CAPACITORS

The operating conditions for modules, devices or application using Energy-Capacitors must follow the detailed operating condition of the individual cell.

OPERATING VOLTAGE (U_R)

Energy-Capacitors are specified with a maximum operating voltage $U_{MAX} = U_R$ and a minimum operating voltage U_{min} . For a safe operation, these limits must be strictly adhered to.

SURGE VOLTAGE

Maximum voltage, which may be applied to the capacitor for a short period of maximum 5 seconds within the complete lifetime.

EFFECT OF CURRENT FLOW

Energy-Capacitor used with large currents will generate heat. Do not apply currents exceeding the maximum charge/discharge current. It

may generate heat, deform, explode or lose electrolyte. Comply with the maximum specified charge/discharge currents in the datasheet.

RATED CURRENT (I_R)

The rated current is the current which is specified in the IEC 62391-1.

MAX. CONTINUOUS CURRENT (I_{MAX})

The maximum continuous current is the current which can be used to charge and discharge the capacitor repeatedly without any pause. The current generates a temperature increase and must be considered with existing outside temperature. The maximum temperature must not be exceeded.

SURGE CURRENT (I_S)

The surge current is the maximum charge/discharge current and it is limited (see datasheet). The maximum temperature must not be exceeded.

SELF-DISCHARGE CURRENT (I_{SD})

The self-discharge current is specified after 3 months at ambient temperature of 25°C, relative humidity between 25% to 85% and without further voltage applied with t in seconds.

$$I_{SD} = \frac{C \cdot (U_R - U_3)}{t}$$

SELF-DISCHARGE VOLTAGE (I_{SD})

The self-discharge voltage is specified at ambient temperature 25±2°C. The following procedure must be followed to determine the self-discharge voltage drop:

- the capacitor is charged to rated voltage with constant current (operational current, see datasheet)
- the capacitor is kept at the rated voltage for 30 minutes
- open the circuit and store the capacitor for 72 hours at an ambient temperature of 25±2°C
- measure the self-discharge voltage between the capacitor terminals with a high ohmic voltmeter.

LEAKAGE CURRENT (I_{leak}) The leakage current is specified at ambient temperature 25±2°C. The following procedure must be followed to determine the leakage current:

- the capacitor is charged to rated voltage with constant current (operational current, see datasheet)
- the capacitor is kept at the rated voltage for 72 hours, during which the leakage current declines to a steady-state value
- measure the leakage current between the capacitor terminals for the characteristic leakage current

POLARITY

The terminals of the product have a (positive or negative) polarity mark. Please check the polarity before using. Never apply any reverse voltage.

LIFETIME There are many different lifetime definitions known without any true standard definition. Take special care when capacitors of different manufacturers or technologies are compared. In the case of lifetime tests, please consider the rated operating voltage and rated operating temperature. Do not exceed the rated operating current.

LOAD LIFE

Period of time, during which the technical parameters of all capacitors stay within the given limits. JIANGHAI does not allow for outliers.

HIGH TEMPERATURE STORAGE TIME

Period of time, during which the technical parameters of all capacitors stay within the given limits. JIANGHAI does not allow for outliers.

CYCLE LIFE

Number of charge and discharge cycles at ambient temperature 25°C during which the technical parameters of all capacitors stay within the given current limits and voltage range. JIANGHAI defines this without allowing for outliers.

TEMPERATURE CHARACTERISTICS

The parameters of the capacitor are dependent of the temperature. Please check the datasheet or ask for assistance to define the temperature dependencies.

AC INTERNAL RESISTANCE (ESR_{AC})

Please note that the capacitor must not be connected to alternating voltage during regular operation. The only exemption is the determination of the ESR_{AC} , by a test procedure devised to determine the ESR without charging the component. At ambient temperature 25±2°C the capacitor is discharged to U_{min} with constant current I_R before testing. A sinusoidal alternating current signal with an amplitude of maximum 5 mA and a frequency of 1kHz is applied, then the decreasing alternating voltage at the capacitor is detected. The AC internal resistance of the capacitor is calculated according to the following formula:

$$ESR_{AC} = \frac{V_{AC}}{I_{AC}}$$

DC INTERNAL RESISTANCE (ESR_{DC})

At ambient temperature 25±2 °C, the DC internal resistance of a capacitor is evaluated by following these steps:

- the capacitor is charged to the rated voltage U_R with constant current I_R
- the capacitor is kept at the rated voltage U_R for 30 minutes
- the capacitor is discharged to the minimum operating voltage U_{min} with a constant current I_R , measure the voltage U_i after 30ms discharge
- repeat the steps for three times from (a) to (c)
- calculate the DC internal resistance of capacitor (RDC) within the third cycle according to the following formula:

$$ESR_{DC} = \frac{(U_R - U_i)}{I}$$

VIBRATION AND MECHANICAL STRESS

Capacitors are sensitive to vibration and mechanical forces applied on the leads. Do not use capacitors, which have been dropped onto a rigid surface.

INSULATION

If any defect of the sleeve is visible, the component should not be used – the same holds for any kind of visible damage. A capacitor should be electrically isolated from the following parts: aluminum case, cathode lead wire, anode lead wire and circuit pattern, and auxiliary terminal of snap-in type. The sleeve of the capacitor is not an insulator and therefore the standard capacitor should not be used in a place where insulation function is needed. Please contact JIANGHAI if a higher grade of insulation is required.

ELECTROLYTE AND SEPARATOR PAPER

Electrolyte and separator paper used in Energy-Capacitors may be flammable. Also electrolyte is electrically conductive. Therefore in case electrolyte gets in contact with PC board it may cause corrosion of circuit pattern or cause short circuit between patterns, and may lead to smoke generation or ignition in worst case.

CAUTION DURING USE OF CAPACITORS

Do not touch the terminals of capacitors. Keep the capacitor free from conductive solution, such as acids, alkali and so on. Ensure that the operating environment of the equipment into which the capacitor has been built is within the specified conditions mentioned in the catalogue or specification sheets.

SAFETY VENT (RADIAL AND SNAP-IN)

The safety vent needs some free space to open properly. Allow free headroom of at least 2mm for diameter $\leq 16\text{mm}$, more than 3mm for diameter 18-35mm. Do not place any wires or PCB tracks above the valve.

SOLDERING

Please only use manual soldering. Don't use reflow soldering or wave-soldering or infrared heating or air heating. Heat shock will decrease the electric performance of capacitors or cause malfunction.

- (1) Soldering temperature for radial and snap-in types should not exceed 260°C and soldering time not exceed 5s.
- (2) Soldering temperature for pouch bag types should not exceed 420°C and soldering time not exceed 10s.
- (3) One solder once (1 cycle).

Take measure at prevent Energy-Capacitors becoming short-circuited during the soldering process.

GLUEING, CLEANING AND COATING

Do not use fixing agents or cleaning substances containing halogens. Do not use coating and moulding components that completely seal the capacitors from the environment. Also never use solvents containing: Halogenated hydrocarbons, alkali, petroleum, trichloroethylene/-ethane, xylene, acetones, trichloro trifluoroethane, tetrachloroethylene, methylene chloride, chloroform, acetates, ketones, esters, chlorides and bromides.

MOUNTING

Other devices, which are mounted near the capacitor, should not touch the capacitor. Heat transferred from other components to the capacitor may reduce the lifetime of the capacitor. Do never bend or twist the capacitor after soldering to avoid stress on the leads. Radial capacitors are not protected against mechanical forces on the leads. Forces on the pins might damage the capacitor. No printed circuit board tracks are allowed between the lead pads of the capacitor.

TRANSPORTATION

- (1) Do not apply excessive vibration or shock when transporting the product.
- (2) Prevent the packaging from being dropped during transportation or being stabbed by fork, lift forks etc. during freight handling.
- (3) Package the product with individual terminals isolated to prevent short-circuits between them.
- (4) Do not allow the product to get wet from, for example, rainwater, seawater, ice and snow, dew condensation, or freezing during transportation.
- (5) Package the product in materials strong enough to prevent damage from stacking.
- (6) Avoid fumigation and spraying insecticides (especially with bromides) in the import or export procedures which can cause corrosion. This applies also to the finished devices.

STORAGE CONDITIONS FOR LITHIUM-ION-CAPACITORS

When storing the product for a long period of time, pack it in a way that stacking does not damage the product, taking care to preserve the isolation between individual terminals to prevent a short circuit between them.

- (1) temperature 0°C to 35°C and relative humidity below 65%
- (2) storage voltage 3,4V to 3,7V
- (3) storage time above 1 year should be avoided

STORAGE CONDITIONS OF ELECTROLYTIC-DOUBLE-LAYER-CAPACITORS

When storing the product for a long period of time, pack it in a way that stacking does not damage the product, taking care to preserve the isolation between individual terminals to prevent a short circuit between them.

- (1) temperature 15°C to 35°C and relative humidity below 65%
- (2) uncharged state (Voltage: 0~0,3V)
- (3) storage time above 4 year should be avoided

MAINTENANCE

Periodical inspection should be carried out for the capacitor: visual inspection to check pressure relief open or leakage of electrolyte, electrical characteristic as self-discharge current and capacitance.

AIR TRANSPORTATION REGULATIONS

Currently, Energy-Capacitors are not considered as dangerous goods in 2015 IATA Regulations (status as of January 1st, 2019). However, as air transportation regulations may change, it is recommended that you should check the regulations each time you are transporting Lithium-Ion Capacitors and use an appropriate transportation method.

IN CASE OF EMERGENCY

- (1) If the capacitor becomes deformed or damaged, stop using it and replace it immediately.
- (2) If the cell starts leaking electrolyte or released gas and smoke, stop using it and replace it immediately. Keep away from open flames or sources of ignition. Leaked electrolyte might cause short circuits on the PCB.

EMERGENCY ACTIONS

When the pressure relief vent is open and some gas blows out from the capacitor, please turn the main switch of the equipment off or pull out the plug from the power outlet immediately. During safety vent operation, extremely hot gas ($>100^\circ\text{C}$) may blow out of the capacitors. Do not stand close to the capacitors. In case of eye contact, rinse the open eye(s) with clean water immediately. In case of ingestion, gargle with water immediately, do not swallow. In the case of innervation please exposed to fresh air. Do not touch electrolyte but wash skin with soap and water in case of skin contact. In the case of an accident with electrolyte, please consult a doctor.

DISPOSAL

Following the rules of WEEE, Energy-Capacitors must be collected separately as electronic waste.

Jianghai Europe Electronic Components
2025v1

EDLC

The EDLC technology builds the basis of both types, which offers a relatively high energy density and a very high power density. The electrode material (activated carbon) is applied to an electrically contactable collector and forms the electrodes of the capacitors.

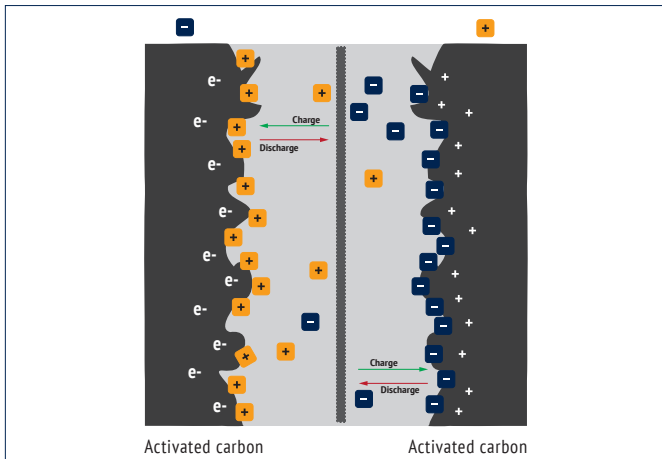


Fig. 1: Electrode structure of EDLC

A membrane („separator“), separates the electrodes from each other and thus protects them from short circuits. The separator must be permeable to the ions of the electrolyte. Those ions are the carriers of the electrical current in the EDLC (Fig. 1). If a voltage is applied, the positively and negatively charged ions migrate to the electrodes. The ions collect at the phase boundaries of the solid electrodes to the liquid electrolyte and form the so-

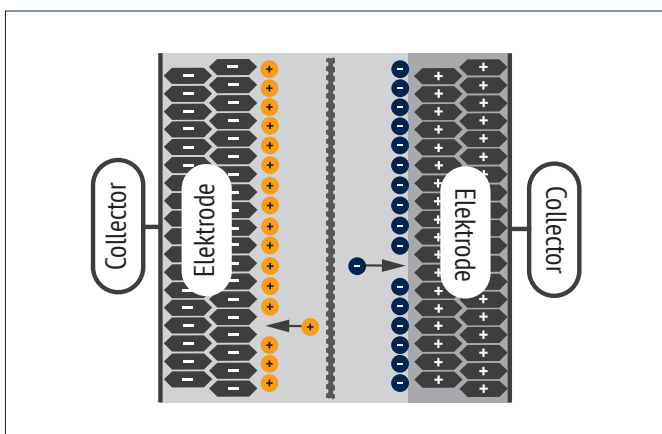


Fig. 2: Charged EDLC

called double layer. The resulting electric field polarizes solvent molecules between the layers that separate the charges. The two electrodes connected in series work like a series connection of two capacitors (Fig. 2). Due to the very small distances of the double layer and the large surface, the capacitance of an EDLC is very high.

LiC

The modified design of the Lithium-Ion-Capacitors (Li-C) allows significantly increased energy density. A lithium-doped graphite electrode replaces one of the two symmetrical electrodes. As a consequence power densities are a little reduced compared to

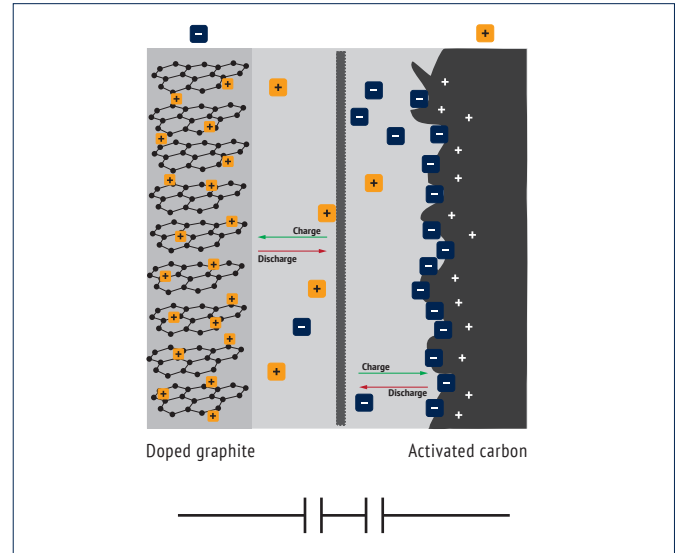


Fig. 3: Electrode structure of LiC

EDLC. Fig. (3) shows the inner construction of a Li-C: activated carbon like EDLC on one side and a doped graphite electrode on the other. As a result, Li-Cs approach the energy density close to batteries.

>> Energy storage is an integral part of our modern world and one of the challenges of the future. The technology called „Energy Capacitors“ provides the energy storage in capacitors with new boost. The Ragone diagram (Fig. 4) shows the power density of various electrical energy storage devices versus their energy density. The Energy-C concept basically uses two types of capacitors: the classic double-layer capacitor (EDLC) and the novel lithium-ion capacitor (LiC).

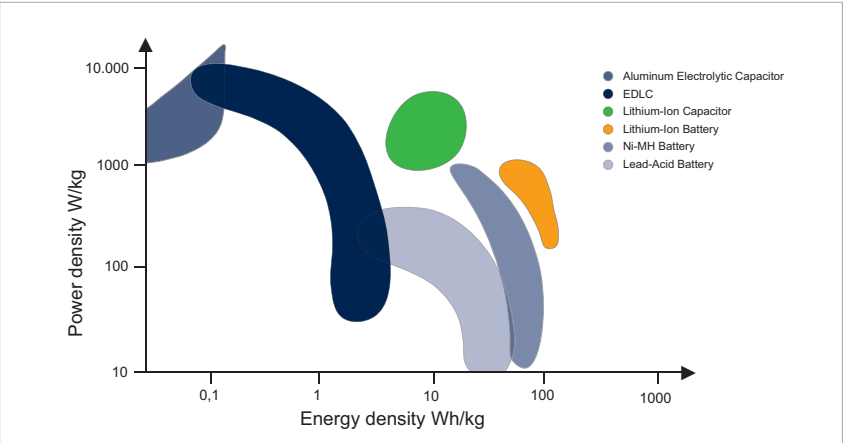


Fig. 4: Ragone diagram of various storage devices for electrical energy

In terms of cycle stability and lifetime, the Energy-Cs are far ahead of the batteries. While lithium ion batteries offer merely about a thousand cycles, LiCs reach several hundreds of thousands of cycles. The special design and material combination of the lithium-ion capacitor ensures stability and charge retention even at high temperatures.

While both batteries and Li-C remain stable at room temperature and discharge less than 5% over 2500 h, an EDLC already loses up to 30% of the charge after 2000h. At 60°C, the discharge rate increases significantly due to the accelerated chemical reactions

between electrolyte and electrode material. The consequence of these chemical reactions is an increased leakage current and this leads to charge loss in batteries and EDLCs alike.

While the leakage currents of the Li-C continue to be low, the lithium-ion battery now loses up to 30% of its charge after 2500 hours. When it comes to safety and reliability, the Li-C can also score: it is just as safe as an EDLC, due to the special process that firmly embeds the lithium ions in the molecular structure of the carbon structure („doping“).

Unlike lithium batteries, no elaborate designs are needed to reduce the risk of thermal runaway with the known fire hazard. Due to the doping, there are neither metallic lithium nor lithium oxide in the capacitor. The doping method thus allows the capacitor to be always in a safe condition even with mechanical damage, high temperature, or heavy discharge.

The production of a LiC requires less than 3% of the lithium amount of a lithium battery of the same volume. In addition to the aspect of efficiency of resources, this results in a lower weight / smaller design as a nice side effect. The Ragone diagram (Fig. 4) shows that lithium-ion capacitors open up a new range for applications that previously were not covered, neither by batteries nor by any other type of capacitor.

The Energy-C concept represents a new technology for existing and future applications of energy storage. The capacitors described here are already being mass produced by Jianghai and have proven their superior performance under real operating conditions in the field.

TECHNOLOGY COMPARISON: MAIN MATERIAL & PROPERTIES			
	ENERGY-C (EDLC)	ENERGY-C (LiC)	LiB
ANODE	Activated carbon	Activated carbon	LiCoO ₂ / LiMnO ₄
CATHODE	Activated carbon	Graphite/Li-ion doped	Graphite/Li-ion doped
ELECTRIC STORAGE PRINCIPLE	Ion-adsorption	"Anode: Ion-adsorption Cathode: Ion-adsorption and charge transfer"	Reversible redox reaction
TEMPERATURE RANGE	-40 ~ 85 °C	-25 ~ 70 °C	-25 ~ 45 °C
MAX. RATED VOLTAGE	2.3 ~ 3 V	3.8 ~ 4.2 V	3.7 ~ 4.2 V
MAX. CHARGE RATE	approx. 1,000 C	approx. 100 C	0.5 ~ 1 C (normal)
SIZE/WEIGHT	low	low	high
CHARGE-/DISCHARGE-CYCLES	More than 500,000	50,000 ~ 500,000	1000
SELF DISCHARGE	>30 % after 2,000 h	<5 % after 2,500 h	<5 % after 2,500 h
SAFETY	safe	safe	depending on structure and material
ENERGY DENSITY	(5 ~ 8,5 Wh/kg)	(40 ~ 90 Wh/kg)	(~150-250 Wh/kg)



Traction and Railway, tram and electrified bus

Several functions could be realized by using Energy-C capacitors: reuse the power of braking, cost reductions by saving parts of the external electrification (overhead lines) and infrastructure. Fast charging during the stop and pick-up of passengers instead of a continuously connection to the grid are new concepts already in practice.



Elevators

Elevators often waste potential energy when the cabin goes down. Energy capacitors can be used to store the energy and use it for the next ascent. Such operation requires a high number of cycles combined with high charging- and discharging currents.



Automated Guided Vehicles

Automated Guided Vehicles automate and mobilize complete warehouses. Energy capacitors replacing batteries reduce the weight and volume significantly. The disadvantages of high maintenance costs and short service life of batteries is obsolete. Short stops during usage are used for charging the capacitors and allow a true 24-hour operation of all AGVs.



Recuperation of energy



Recuperation brakes in electric vehicles, in trains, in roller coasters or in machines like f.i. the fork of a forklift save energy and prolongs the life and usage time of the machine. There are thousands of applications with high numbers of charge-discharge cycles, which now can be used to increase the efficiency or allow a true energy saving. Additionally the life time of the batterie might be prolonged as the numbers of cycles for the battery are reduced.



Pitch Systems in Wind Turbines

Energy-Capacitors help to minimize costs due to their long service life and high cycle stability on this important safety unction.



Smartmeters & Energy Harvesting

Energy capacitors provide the energy for the short but intense transmission pulse. The Li-C, which has a much lower self-discharge than all other known technologies allow a true long-time handling even at high temperatures.



Backup systems

Energy-Cs allow extreme fast power in case of problems of the grid or power supplies, especially for larger power systems like hospitals, banks or industry. Such grid failures happen quite often in the range of milliseconds or seconds. The high number of cycles and the availability of large amounts of energy in a short time make energy capacitors the optimal technology choice.

RADIAL SINGLE

APPLICATIONS:

- 1 Smartmeter
- 2 Peakshaving Low Power
- 3 DC-Grid stabilisation
- 4 Energybuffer in Hybrid systems

SRP PR
2,7V
70°C

higher
temperature

SRQ QR
2,7V
85°C

higher voltage

SRE ER
3V
65°C

RADIAL MULTI

APPLICATIONS:

- 1 Smartmeter
- 2 Peakshaving Low Power
- 3 DC-Grid stabilisation
- 4 Energybuffer in Hybrid systems

SRM MR
5,5V
70°C

higher
temperature

SRO OR
5,5V
85°C

higher voltage

SRS SR
6V
65°C

SNAP-IN

APPLICATIONS:

- 1 Peakshaving mid Power
- 2 DC-Grid stabilisation
- 3 Recuperation
- 4 Pitch-Systems

SSP PS
2,7V
65°C

higher
capacitance

SSL LS
2,7V
65°C

higher voltage

SSE ES
2,7V
65°C

AXIAL

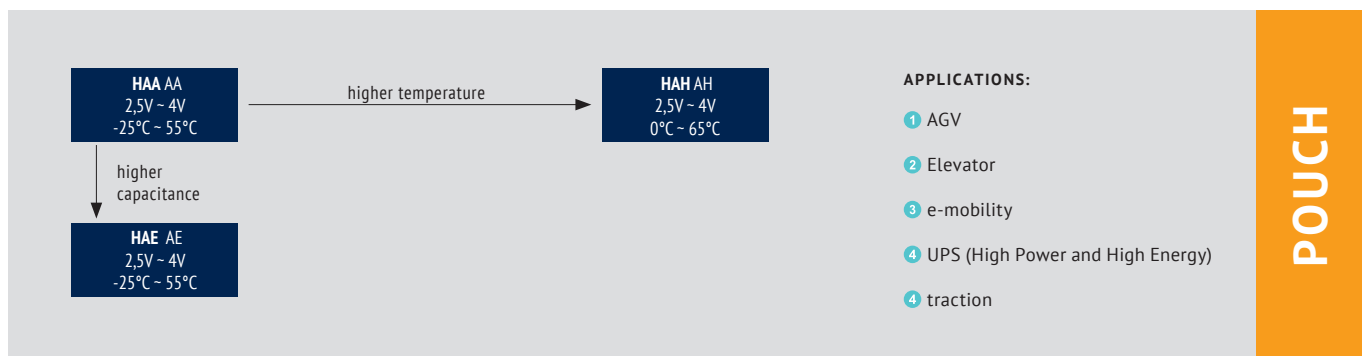
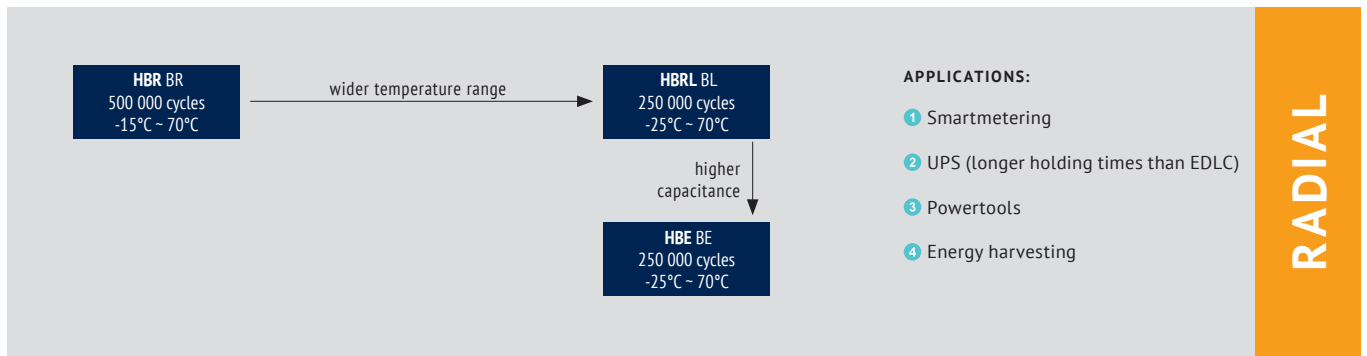
APPLICATIONS:

- 1 Peakshaving high Power
- 2 High Power Grid Applications
- 3 High Power UPS
- 4 Pitch-Systems

SGP PG
2,7V
65°C

higher voltage

SGE EG
3V
65°C





- High power density
- High energy density
- Welded column terminal
- New improved cell design

APPLICATIONS:

- 1 AGV
- 2 Elevator
- 3 e-mobility
- 4 UPS (High Power and High Energy)
- 4 traction

AXIAL/
WELDED COLUMN



EDLC & LiC

Modules are always customer specific. Please contact Alexander Schedlock for further information:

a.schedlock@jianghai-europe.com

MODULES

GOOD TO KNOW:

Not in the mood for paper?

In that case, feel free to use the
product search on our website!



<https://jianghai-europe.com/productsearch>

RADIAL SINGLE CELL TYPE

EDLC: Order Code RADIAL SINGLE CELL 30

EDLC: Technical Specifications RADIAL SINGLE CELL 31

SERIES	CODE	TYPE	TEMPERATURE RANGE	VOLTAGE	INFO	
SRP	PR	RADIAL SINGLE CELL	-40 ~ +70°C	2,7V	Standard	32
SRE	ER	RADIAL SINGLE CELL	-40 ~ +65°C	3V	Enlarged Voltage Range	34
SRQ	QR	RADIAL SINGLE CELL	-40 ~ +85°C	2,7V	Fast Charge/Discharge	36

RADIAL MULTI CELL TYPE

EDLC: Order Code RADIAL MULTI CELL 38

EDLC: Technical Specifications RADIAL MULTI CELL 39

SERIES	CODE	TYPE	TEMPERATURE RANGE	VOLTAGE	INFO	
SRM	MR	RADIAL MULTI CELL	-40 ~ +70°C	5,5V	Standard	42
SRS	SR	RADIAL MULTI CELL	-40 ~ +65°C	6V	Higher Voltage	44
SRO	OR	RADIAL MULTI CELL	-40 ~ +85°C	5,5V	Higher Temperature Range	46

SNAP-IN TYPE

EDLC: Order Code SNAP-IN 48

EDLC: Technical Specifications SNAP-IN 49

SERIES	CODE	TYPE	TEMPERATURE RANGE	VOLTAGE	INFO	
SSP	PS	SNAP-IN	-40 ~ +65°C	2,7V	Standard	50
SSE	ES	SNAP-IN	-40 ~ +65°C	3V	Higher Voltage	52
SSL	LS	SNAP-IN	-40 ~ +65°C	2,7V	Higher Capacitance	54

AXIAL TYPE

EDLC: Order Code AXIAL 56

EDLC: Technical Specifications AXIAL 57

SERIES	CODE	TYPE	TEMPERATURE RANGE	VOLTAGE	INFO	
SGP	PG	AXIAL	-40 ~ +65°C	2,7V	Standard	58
SGE	EG	AXIAL	-40 ~ +65°C	3V	Higher Voltage	60



ORDER CODE EDLC TYPE RADIAL

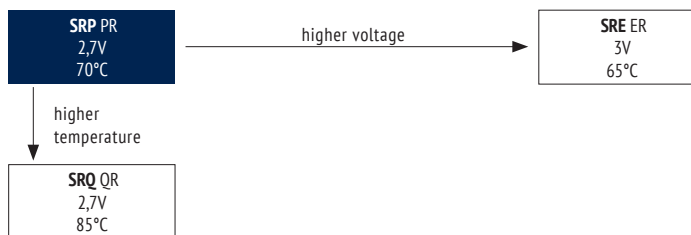
SC	C	D	ER	2R7	504	Q	LL	35	1860	E	E3	JExxxxx
Technology	Design Code	Energy-Capacitor Type	Series Code	Rated Voltage Code	Capacitance Code (in F)	Capacitance Tolerance Code	Lead Form Code	Pitch	Dimension øD x h (in mm)	Material Code Sleeve	for internal use	for Specials only
SC = Energy-Capacitor	Single Cell C	EDLC D	SRE ER SRP PR SRQ QR	2,7 2R7 3,0 3R0	0,5 504 1,0 105 3,3 335 10 106 50 506 100 107 120 127 220 227	+30% / -10% Q +20% / -20% M +20% / -0% R	Long Leads LL Taped FF Cut 4,5mm CC	2,0mm 20 2,5mm 25 3,5mm 35 5,0mm 50 5,5mm 55 7,5mm 75 8,0mm 80 12,0mm 12 15,5mm 15 18,0mm 18	5x12 0512 6x12 0612 8x14 0814 8x20 0820 10x16 1016 10x20 1020 10x25 1025 10x30 1030 12,5x25 1225 16x20 1620 16x25 1625 16x50 1650 18x40 1840 18x50 1850 18x60 1860 22x45 2245 22x55 2255	PET E PVC V	E3	
							other style on request					

EDLC · RADIAL SINGLE



**2,7V
at 70°C**

- Standard
- Fast charge/discharge
- High power density



ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-40 ~ +70 (-40 ~ +85 at 2,3V)
Rated Voltage (V)	2,7
Surge Voltage (V)	2,85
Capacitance Range (F)	0,5 ~ 100
Capacitance Tolerance (25°C)	+30/-10%

! The usage at lower temperatures than indicated may be possible. Please contact the Jianghai Europe sales office for approval.

Leakage Current	After 72 hours at 25°C application of rated voltage, leakage current is not more than specified in table.
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Self Discharge Voltage	After 72 hours storage at 25°C, 25-85% RH and initial charging at U_R , the remaining voltage shall be $\geq 2,1V$
------------------------	--

Temperature Characteristics	The specification shall be met at upper category temperature of 70°C	Capacitance Change	$\pm 10\%$ of specified value
		ESR Change	less than specified value
	The specification shall be met at lower category temperature of -40°C	Capacitance Change	$\pm 30\%$ of specified value
		ESR Change	less than 400% of specified value
Load Life	The specification shall be met after rated voltage applied at 70°C for 1 000h	Capacitance Change	$\pm 30\%$ of specified value
		ESR Change	less than 200% of specified value
Cycle Life	The specification shall be met after 500 000 cycles at 25°C; 1 cycle=charge-discharge from U_R to $\frac{1}{2}U_R$	Capacitance Change	$\pm 30\%$ of specified value
		ESR Change	less than 200% of specified value

ENVIRONMENTAL

The products are RoHS, WEEE and REACH compliant. The detailed version please see separate "Environmental Certificates" document or www.jianghai-europe.com



SPECIFICATIONS

U _R Rated Voltage (Surge Voltage) Code (V)	C _R Rated Capacitance (F)	ESR _{DC,max} Equivalent Series Resistance 25°C (mΩ)	ESR _{AC,max} Equivalent Series Resistance 25°C (1kHz) (mΩ)	I _{leak} Leakage Current 25°C (72h) (μA)	I _R [*] Rated Current (A)	I _{MAX} Max. Continuous Current ΔT15°C (A)	I _S Surge Current <1sec (A)	Size mm DxL	Order Code Details: Page 30 ◇◇ = pin style & length
2,7 (2,85) 2R7	0,5	900	450	5	0,015	0,30	0,47	5 x 12	SCCDPR2R7504Q◇◇200512EE3
	1	700	350	6	0,030	0,40	0,79	6,3 x 12	SCCDPR2R7105Q◇◇250612EE3
		400	200	8	0,030	0,50	0,80	8 x 14	SCCDPR2R7105Q◇◇350814EE3
	2	240	120	10	0,060	0,60	1,82	8 x 14	SCCDPR2R7205Q◇◇350814EE3
	3	150	75	12	0,090	0,70	2,79	8 x 20	SCCDPR2R7305Q◇◇350820EE3
	3,3	150	75	14	0,099	0,90	2,98	8 x 20	SCCDPR2R7335Q◇◇350820EE3
	5	120	60	16	0,150	1,20	4,09	10 x 20	SCCDPR2R7505Q◇◇501020EE3
	7	110	55	20	0,210	1,80	5,34	10 x 25	SCCDPR2R7705Q◇◇501025EE3
	10	80	40	30	0,300	2,30	7,50	10 x 30	SCCDPR2R7106Q◇◇501030EE3
		80	40	30	0,300	2,30	7,50	12,5 x 25	SCCDPR2R7106Q◇◇501225EE3
	15	60	30	45	0,450	2,50	10,66	12,5 x 25	SCCDPR2R7156Q◇◇501225EE3
	20	50	25	60	0,600	2,60	13,50	16 x 20	SCCDPR2R7206Q◇◇751620EE3
	25	44	22	80	0,750	2,80	16,07	16 x 25	SCCDPR2R7256Q◇◇751625EE3
	50	32	16	140	1,500	5,50	25,96	18 x 40	SCCDPR2R7506Q◇◇751840EE3
	60	32	16	140	1,800	5,80	27,74	18 x 40	SCCDPR2R7606Q◇◇751840EE3
	70	36	18	160	2,100	6,30	26,85	18 x 50	SCCDPR2R7706Q◇◇751850EE3
	100	32	16	180	3,000	6,60	32,14	18 x 60	SCCDPR2R7107Q◇◇751860EE3

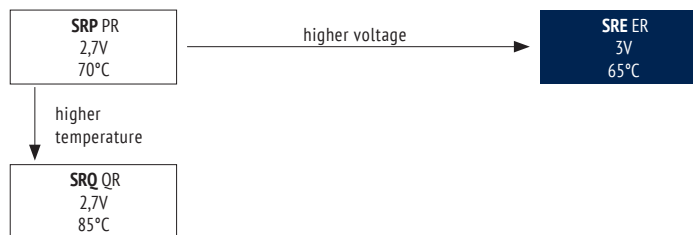
* Rated current I_R = 40°C I_R = 40°C * U_R/3600 (IEC 62391-1)

ENERGY STORAGE

U _R Rated Voltage (Surge Voltage) Code (V)	C _R Rated Capacitance (F)	E Stored Energy (Wh)	Weight (g)	Specific Energy Density (Wh/kg)	Power Density (IPM) (kW/kg)	Order Code Details: Page 30 ◇◇ = pin style & length
2,7 (2,85) 2R7	0,5	<0,001	0,4	1,27	5,06	SCCDPR2R7504Q◇◇200512EE3
	1	0,001	0,66	1,53	3,94	SCCDPR2R7105Q◇◇250612EE3
		0,001	0,9	1,13	2,53	SCCDPR2R7105Q◇◇350814EE3
	2	0,002	1,0	2,03	7,59	SCCDPR2R7205Q◇◇350814EE3
	3	0,003	1,4	2,17	8,68	SCCDPR2R7305Q◇◇350820EE3
	3,3	0,003	1,5	2,23	8,10	SCCDPR2R7335Q◇◇350820EE3
	5	0,005	2,1	2,41	6,68	SCCDPR2R7505Q◇◇501020EE3
	7	0,007	2,7	2,63	6,14	SCCDPR2R7705Q◇◇501025EE3
	10	0,010	3,2	3,16	7,12	SCCDPR2R7106Q◇◇501030EE3
		0,010	3,6	2,81	6,33	SCCDPR2R7106Q◇◇501225EE3
	15	0,015	4,3	3,53	7,06	SCCDPR2R7156Q◇◇501225EE3
	20	0,020	5,9	3,43	6,18	SCCDPR2R7206Q◇◇751620EE3
	25	0,025	7,4	3,42	5,60	SCCDPR2R7256Q◇◇751625EE3
	50	0,051	13,0	3,89	4,38	SCCDPR2R7506Q◇◇751840EE3
	60	0,061	13,6	4,47	4,19	SCCDPR2R7606Q◇◇751840EE3
	70	0,071	17,0	4,17	2,98	SCCDPR2R7706Q◇◇751850EE3
	100	0,101	19,0	5,33	3,00	SCCDPR2R7107Q◇◇751860EE3

**3V
at 65°C**

- Enlarged voltage range
- Fast charge/discharge



ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-40 ~ +65 (-40 ~ +85 at 2,4V)
Rated Voltage (V)	3
Surge Voltage (V)	3,2
Capacitance Range (F)	0,5 ~ 180
Capacitance Tolerance (25°C)	+30/-10%



The usage at lower temperatures than indicated may be possible. Please contact the Jianghai Europe sales office for approval.

Leakage Current	After 72 hours at 25°C application of rated voltage, leakage current is not more than specified in table.
-----------------	---

Self Discharge Voltage	After 72 hours storage at 25°C, 25~85% RH and initial charging at U_R , the remaining voltage shall be $\geq 2,3V$
------------------------	--

Temperature Characteristics	The specification shall be met at upper category temperature of 65°C	Capacitance Change	±10% of specified value
		ESR Change	less than specified value
	The specification shall be met at lower category temperature of -40°C	Capacitance Change	±30% of specified value
		ESR Change	less than 400% of specified value
Load Life	The specification shall be met after rated voltage applied at 65°C for 1 000h	Capacitance Change	±30% of specified value
		ESR Change	less than 400% of specified value
Cycle Life	The specification shall be met after 500 000 cycles at 25°C; 1 cycle=charge-discharge from U_R to $\frac{1}{2}U_R$	Capacitance Change	±30% of specified value
		ESR Change	less than 400% of specified value

ENVIRONMENTAL

The products are RoHS, WEEE and REACH compliant. The detailed version please see separate "Environmental Certificates" document or www.jianghai-europe.com


SPECIFICATIONS

U _R Rated Voltage (Surge Voltage) Code (V)	C _R Rated Capacitance (F)	ESR _{DC, max} Equivalent Series Resistance 25°C (mΩ)	ESR _{AC, max} Equivalent Series Resistance 25°C (1kHz) (mΩ)	I _{leak} Leakage Current 25°C (72h) (μA)	I _R * Rated Current (A)	I _{MAX} Max. Continuous Current ΔT15°C (A)	I _S Surge Current <1sec (A)	Size mm DxL	Order Code Details: Page 30 ◇◇ = pin style & length
3 (3,2) 3R0	0,5	800	400	6	0,017	0,50	0,54	5 x 12	SCCDER3R0504Q◇◇200512EE3
	1	1000	500	8	0,033	0,75	0,75	6,3 x 12	SCCDER3R0105Q◇◇250612EE3
		800	400	10	0,033	0,75	0,80	8 x 14	SCCDER3R0105Q◇◇350820EE3
	3,3	160	80	16	0,110	0,75	3,04	8 x 20	SCCDER3R0335Q◇◇350820EE3
	5	140	70	18	0,167	1,40	4,41	10 x 20	SCCDER3R0505Q◇◇501020EE3
	7	120	60	25	0,233	2,10	5,71	10 x 25	SCCDER3R0705Q◇◇501025EE3
	10	100	50	40	0,333	2,50	7,50	10 x 30	SCCDER3R0106Q◇◇501030EE3
	15	70	35	55	0,500	2,70	10,90	12,5 x 25	SCCDER3R0156Q◇◇501225EE3
	25	50	25	80	0,833	3,10	16,67	16 x 25	SCCDER3R0256Q◇◇751625EE3
	35	28	15	120	1,167	4,00	19,10	16 x 35	SCCDER3R0356Q◇◇751635EE3
	50	40	20	150	1,667	5,90	25,00	18 x 40	SCCDER3R0506Q◇◇751840EE3
	70	20	13	170	2,333	6,20	27,60	16 x 50	SCCDER3R0706Q◇◇751650EE3
	100	36	18	550	3,333	9,80	32,60	18 x 60	SCCDER3R0107Q◇◇751860EE3
	180	16	10	900	6,000	12,00	69,00	22 x 55	SCCDER3R0187Q◇◇102255EE3

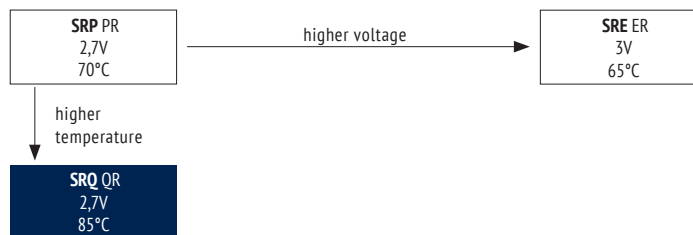
* Rated current I_R = 40°I_A = 40°C_R*U_R/3600 (IEC 62391-1)

ENERGY STORAGE

U _R Rated Voltage (Surge Voltage) Code (V)	C _R Rated Capacitance (F)	E Stored Energy (Wh)	Weight (g)	Specific Energy Density (Wh/kg)	Power Density (IPM) (kW/kg)	Order Code Details: Page 30 ◇◇ = pin style & length
3 (3,2) 3R0	0,5	<0,001	0,4	1,56	7,03	SCCDER3R0504Q◇◇200512EE3
	1	0,001	0,66	1,89	3,41	SCCDER3R0105Q◇◇250612EE3
		0,001	0,9	1,40	3,10	SCCDER3R0105Q◇◇350820EE3
	3,3	0,004	1,4	2,68	10,04	SCCDER3R0335Q◇◇350820EE3
	5	0,006	2,2	2,84	7,31	SCCDER3R0505Q◇◇501020EE3
	7	0,009	2,8	3,13	6,70	SCCDER3R0705Q◇◇501025EE3
	10	0,013	3,2	3,91	7,03	SCCDER3R0106Q◇◇501030EE3
	15	0,019	4,3	4,36	7,48	SCCDER3R0156Q◇◇501225EE3
	25	0,031	7,5	4,17	6,00	SCCDER3R0256Q◇◇751625EE3
	35	0,044	9,7	4,50	8,28	SCCDER3R0356Q◇◇751635EE3
	50	0,063	13,5	4,63	4,17	SCCDER3R0506Q◇◇751840EE3
	70	0,088	13,5	6,48	8,33	SCCDER3R0706Q◇◇751650EE3
	100	0,125	19	6,58	3,29	SCCDER3R0107Q◇◇751860EE3
	180	0,225	27	8,33	2,50	SCCDER3R0187Q◇◇102255EE3

**2,7V
at 85°C**

- Fast charge/discharge
- Higher temperature range



ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-40 ~ +85
Rated Voltage (V)	2,7
Surge Voltage (V)	2,85
Capacitance Range (F)	1 ~ 100
Capacitance Tolerance (25°C)	+30/-10%



The usage at lower temperatures than indicated may be possible. Please contact the Jianghai Europe sales office for approval.

Leakage Current	After 72 hours at 25°C application of rated voltage, leakage current is not more than specified in table.
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Self Discharge Voltage	After 72 hours storage at 25°C, 25~85% RH and initial charging at U_R , the remaining voltage shall be $\geq 2,1V$
------------------------	--

Temperature Characteristics	The specification shall be met at upper category temperature of 85°C	Capacitance Change	$\pm 10\%$ of specified value
		ESR Change	less than specified value
	The specification shall be met at lower category temperature of -40°C	Capacitance Change	$\pm 30\%$ of specified value
		ESR Change	less than 400% of specified value
Load Life	The specification shall be met after rated voltage applied at 85°C for 1 000h	Capacitance Change	$\pm 30\%$ of specified value
		ESR Change	less than 400% of specified value
Cycle Life	The specification shall be met after 500 000 cycles at 25°C; 1 cycle=charge-discharge from U_R to $\frac{1}{2}U_R$	Capacitance Change	$\pm 30\%$ of specified value
		ESR Change	less than 400% of specified value

ENVIRONMENTAL

The products are RoHS, WEEE and REACH compliant. The detailed version please see separate "Environmental Certificates" document or www.jianghai-europe.com


SPECIFICATIONS

U _R Rated Voltage (Surge Voltage) Code (V)	C _R Rated Capacitance (F)	ESRDC _{Max} Equivalent Series Resistance 25°C (mΩ)	ESRAC _{Max} Equivalent Series Resistance 25°C (1kHz) (mΩ)	I _{leak} Leakage Current 25°C (72h) (μA)	I _R [*] Rated Current (A)	I _{MAX} Max. Continuous Current ΔT15°C (A)	I _S Surge Current <1sec (A)	Size mm DxL	Order Code Details: Page 30 ◇◇ = pin style & length
2,7 (2.85) 2R7	1	1000	500	8	0,030	0,40	0,68	6,3 x 12	SCCDQR2R7105Q◇◇250612EE3
		800	400	8	0,030	0,40	0,75	8 x 14	SCCDQR2R7105Q◇◇350814EE3
	2	320	160	10	0,060	0,60	1,65	8 x 14	SCCDQR2R7205Q◇◇350814EE3
	3,3	160	80	16	0,099	0,80	2,74	8 x 20	SCCDQR2R7335Q◇◇350820EE3
	5	160	80	16	0,150	1,10	3,75	10 x 20	SCCDQR2R7505Q◇◇501020EE3
	7	120	60	20	0,210	1,50	5,14	10 x 25	SCCDQR2R7705Q◇◇501025EE3
	10	100	50	30	0,300	2,20	6,75	10 x 30	SCCDQR2R7106Q◇◇501030EE3
	15	70	35	45	0,450	2,40	9,88	12,5 x 25	SCCDQR2R7156Q◇◇501225EE3
	25	50	25	80	0,750	2,80	15,00	16 x 25	SCCDQR2R7256Q◇◇751625EE3
	35	28	15	150	1,050	3,70	19,10	16 x 35	SCCDQR2R7356Q◇◇751635EE3
	50	40	20	140	1,500	5,40	22,50	18 x 40	SCCDQR2R7506Q◇◇751840EE3
	70	36	18	200	2,100	5,90	26,85	18 x 50	SCCDQR2R7706Q◇◇751850EE3
	100	36	18	550	3,000	6,40	29,35	18 x 60	SCCDQR2R7107Q◇◇751860EE3

* Rated current I_R = 40°C = 40°C * U_R/3600 (IEC 62391-1)

ENERGY STORAGE

U _R Rated Voltage (Surge Voltage) Code (V)	C _R Rated Capacitance (F)	E Stored Energy (Wh)	Weight (g)	Specific Energy Density (Wh/kg)	Power Density (IPM) (kW/kg)	Order Code Details: Page 30 ◇◇ = pin style & length
2,7 (2.85) 2R7	1	0,001	0,66	1,53	2,76	SCCDQR2R7105Q◇◇250612EE3
		0,001	0,90	1,13	2,53	SCCDQR2R7105Q◇◇350814EE3
	2	0,002	1,0	2,03	5,70	SCCDQR2R7205Q◇◇350814EE3
	3,3	0,003	1,4	2,17	8,14	SCCDQR2R7335Q◇◇350820EE3
	5	0,005	2,2	2,30	5,18	SCCDQR2R7505Q◇◇501020EE3
	7	0,007	2,7	2,63	5,63	SCCDQR2R7705Q◇◇501025EE3
	10	0,010	3,2	3,16	5,70	SCCDQR2R7106Q◇◇501030EE3
	15	0,015	4,2	3,53	6,05	SCCDQR2R7156Q◇◇501225EE3
	25	0,025	7,4	3,42	4,93	SCCDQR2R7256Q◇◇751625EE3
	35	0,035	9,6	3,69	4,52	SCCDQR2R7356Q◇◇751635EE3
	50	0,051	13,8	3,67	3,30	SCCDQR2R7506Q◇◇751840EE3
	70	0,071	16,9	4,19	3,00	SCCDQR2R7706Q◇◇751850EE3
	100	0,101	19,0	5,33	2,66	SCCDQR2R7107Q◇◇751860EE3



ORDER CODE EDLC TYPE RADIAL MULTI CELL

SC	M	D	MR		SR5	504	Q		LL		081716		E		T0		H0		12		E3	JExxxxx	
Techno- logy	Design Code	Energy- Capacitor Type	Series Code		Rated Voltage Code (in V)	Capaci- tance Code (in F)	Capacitance Tolerance Code		Terminal Style		Dimension WxLxH (in mm)		Material Code Sleeve		Isolation		Welding Code		Pitch F (in mm)	for internal use	for Specials only		
SC = Energy- Capacitor	Multi Cell	EDLC	D	SRM	MR	5,5	SR5	0,5	504	+30%/-10%	Q	Long Leads	LL	5,5x11x13	051113	PET	E	Without isolation	T0	No welding wire	H0	3,5	3R
				SRS	SR	6	6RO	1,0	105	+20%/-20%	M	Connector wide Pitch	XH	6,5x13x14	061314	Plastic case	S					4,2	4R
				SRO	OR			1,5	155	*20%/-0%	R	Connector small Pitch	XN	8x17x16	081716							5	05
								2,5	255			other style on request	8x17x22	081722	5,5							5R	
								3,5	355				11x21x22	112122	7,5							7R	
								5	505				11x21x27	112127	8							08	
								10	106				13x26x27	132627	9							09	
								15	156				17x33x24	173324	11							11	
								25	256				17x33x35	173335	12							12	
								50	506				18x37x43	183743	15							15	
													18x37x62	183762	18							18	
															24							24	
															26							26	

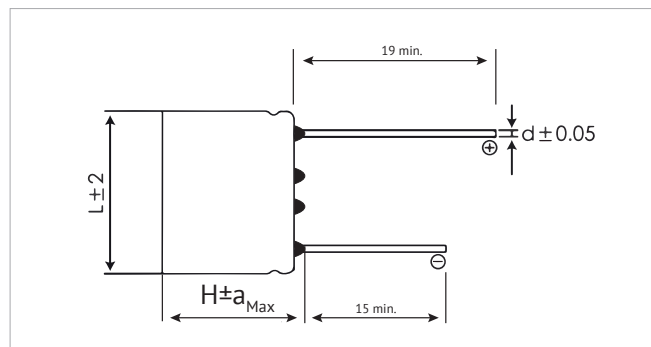
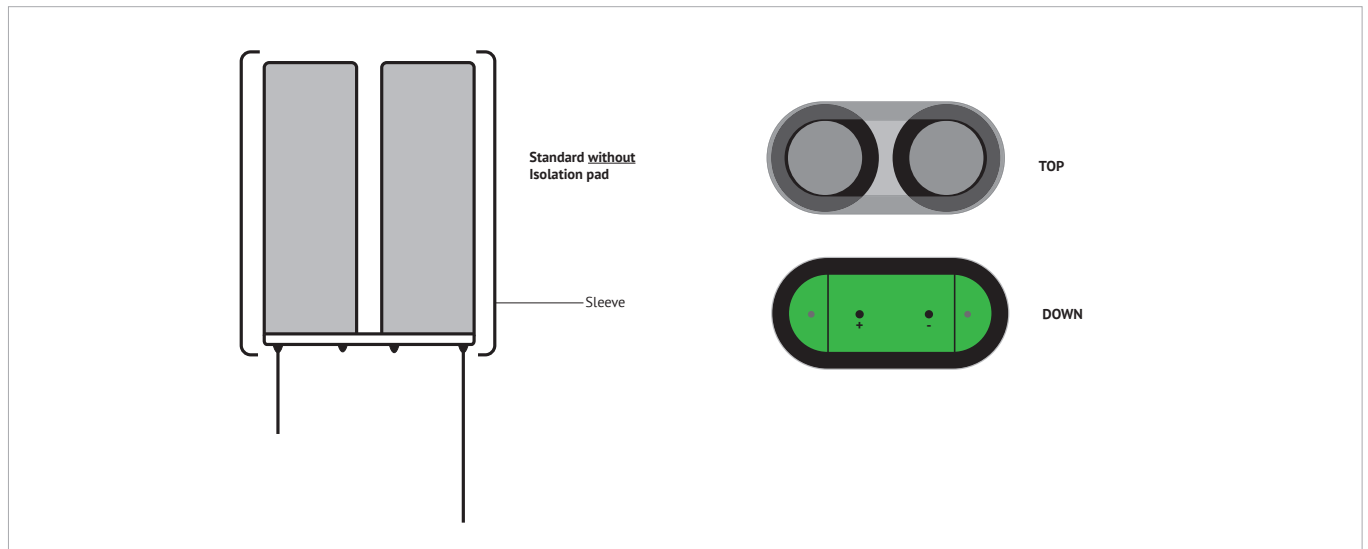
OS = on sleeve
BS = below sleeve





MULTI CELL

T0 (STANDARD), NO ISOLATION

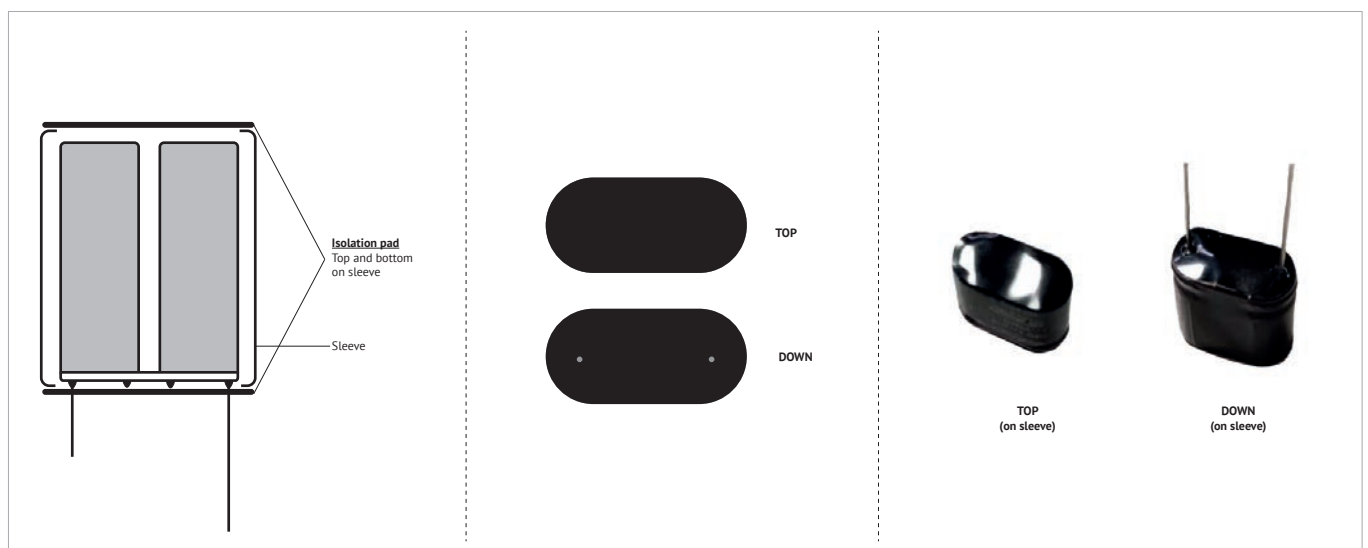


Other leadtypes available on request.

Ø W	5,5		6,5		8,5		11,0		13,0		17,0		18,0	
F	3,5	7,5	4,2	9,0	5,0	12,0	5,5	15,5	8,0	18,0	9,0	24,0	11,0	26,0
Ø d	0,5				0,6						0,8			
a _{Max}	2,0													

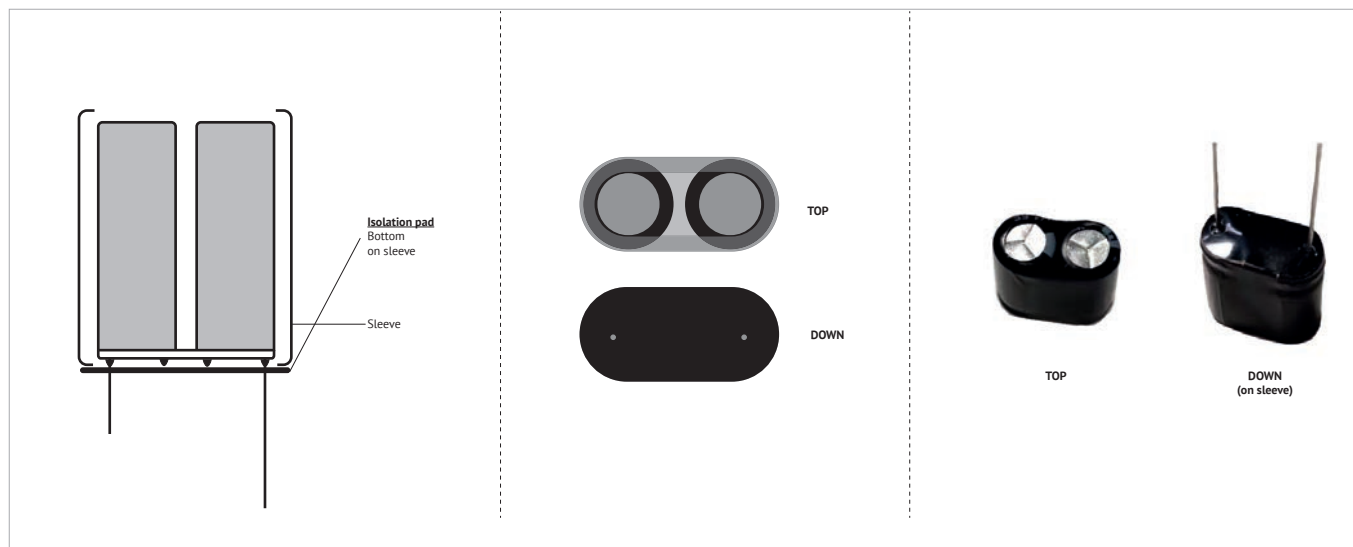
in mm

T1, DOUBLE ISOLATION

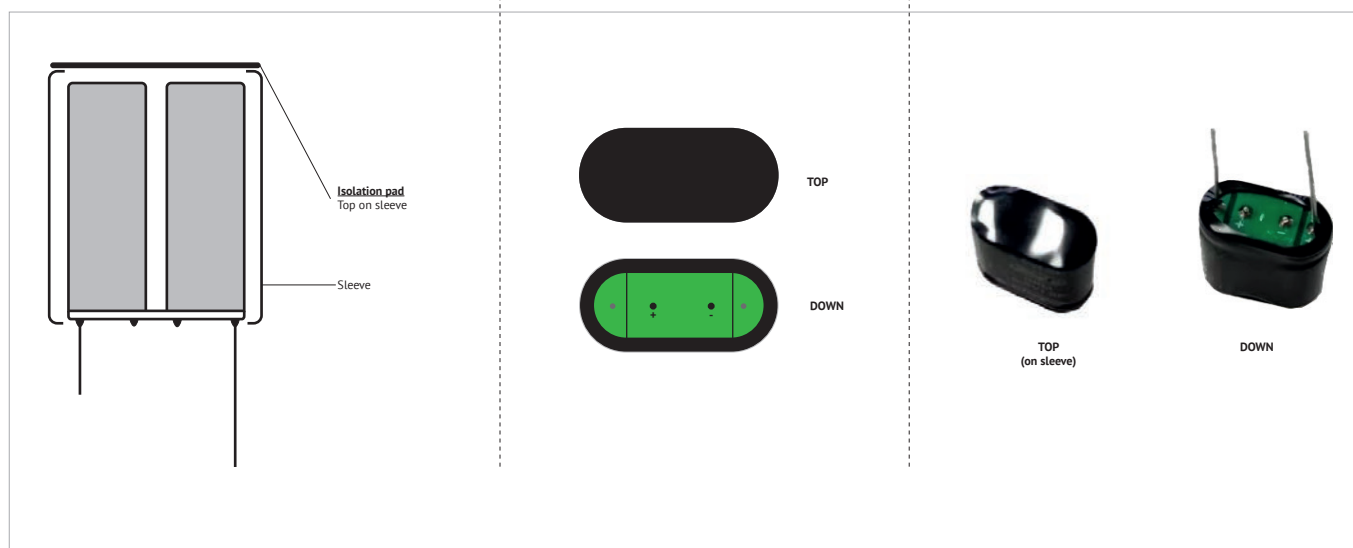




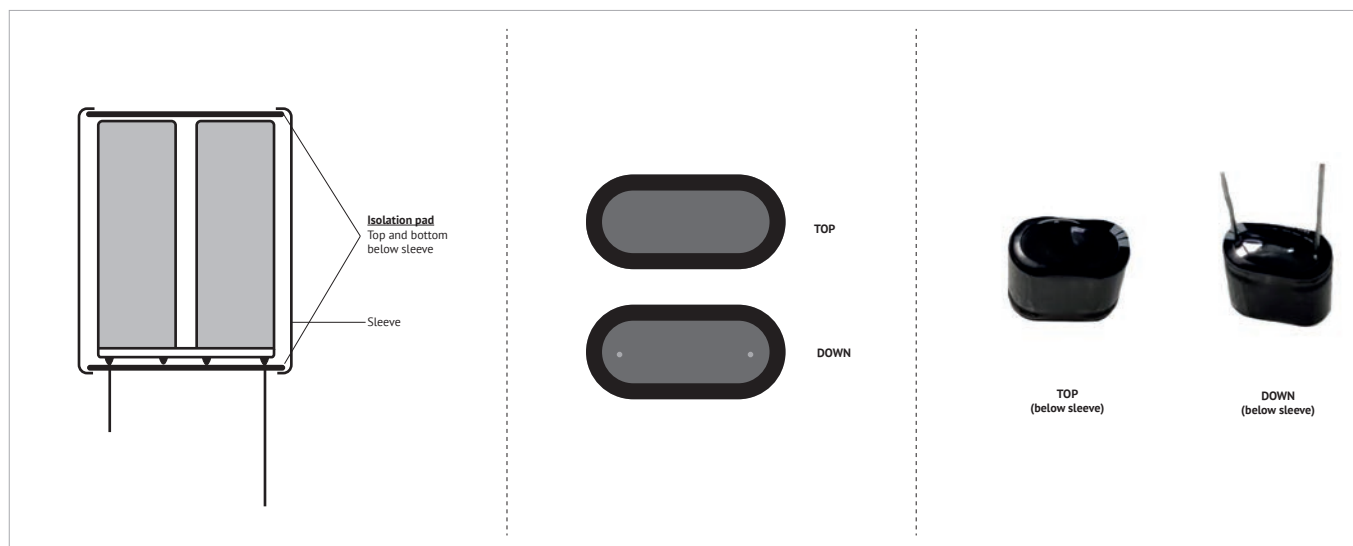
T2



T3

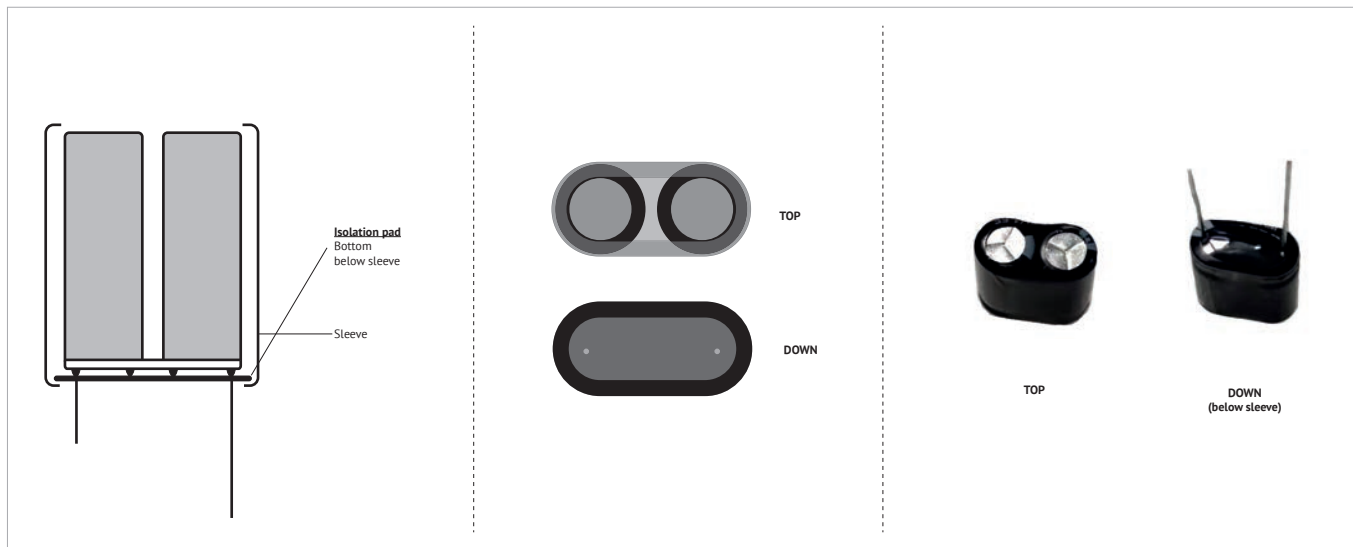


T4

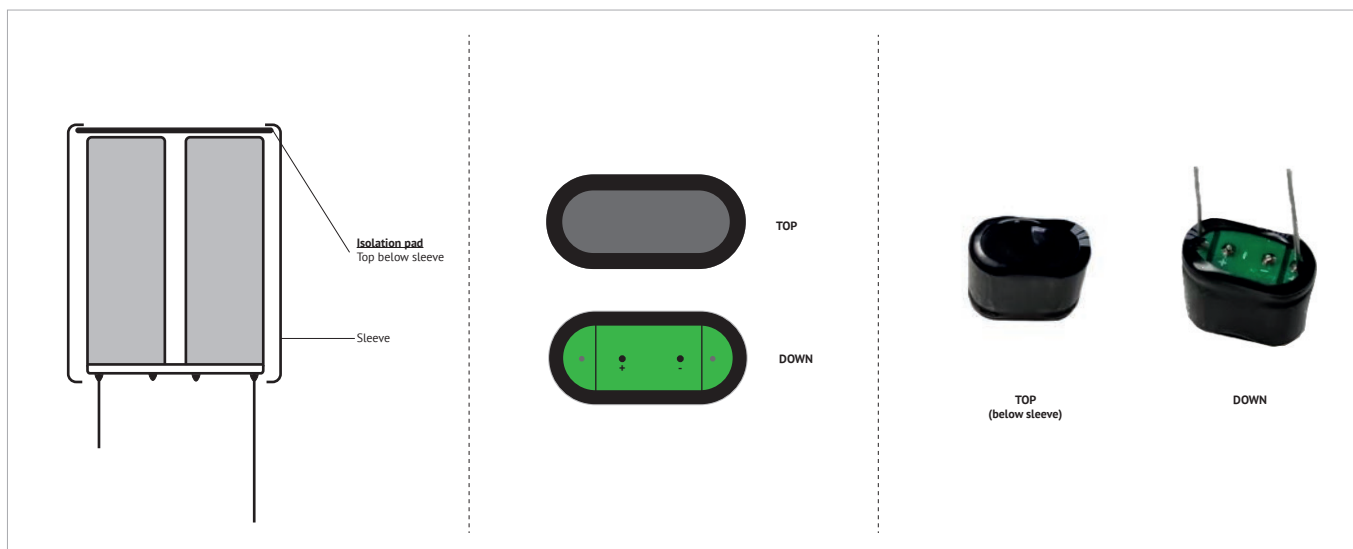




T5



T6



S (SLEEVING TYPE THB), COMPOUND MASS



- > HARD CASE
- > COMPOUND FILLING
- > ON REQUEST

**5,5V
at 70°C**

- Standard
- up to 500 000 cycles
- Multi-Cell

SRM MR
5,5V
70°C

higher voltage →

SRS SR
6V
65°C↓
higher
temperature**SRO OR**
5,5V
85°C**ITEM CHARACTERISTICS**

Operating Temperature Range (°C)	-40 ~ +70 (-40 ~ +85 at 4,6V)
Rated Voltage (V)	5,5
Surge Voltage (V)	5,7
Capacitance Range (F)	0,5 ~ 50
Capacitance Tolerance (25°C)	+30/-10%



The usage at lower temperatures than indicated may be possible. Please contact the Jianghai Europe sales office for approval.

Leakage Current

After 72 hours at 25°C application of rated voltage, leakage current is not more than specified in table.

Self Discharge Voltage

After 72 hours storage at 25°C, 25-85% RH and initial charging at U_R , the remaining voltage shall be $\geq 4,0V$

Temperature Characteristics	The specification shall be met at upper category temperature of 70°C	Capacitance Change	±10% of specified value
		ESR Change	less than specified value
	The specification shall be met at lower category temperature of -40°C	Capacitance Change	±30% of specified value
		ESR Change	less than 400% of specified value
Load Life	The specification shall be met after rated voltage applied at 70°C for 1 000h	Capacitance Change	±30% of specified value
		ESR Change	less than 200% of specified value
Cycle Life	The specification shall be met after 500 000 cycles at 25°C; 1 cycle=charge-discharge from U_R to $\frac{1}{2}U_R$	Capacitance Change	±30% of specified value
		ESR Change	less than 200% of specified value

ENVIRONMENTAL

The products are RoHS, WEEE and REACH compliant. The detailed version please see separate "Environmental Certificates" document or www.jianghai-europe.com





SPECIFICATIONS

U _R	C _R	ESR _{DC, max}	ESR _{AC, max}	I _{leak}	I _R *	I _{MAX}	I _S	Size			Pitch	Order Code
Rated Voltage (Surge Voltage) Code	Rated Capacitance	Equivalent Series Resistance 25°C	Equivalent Series Resistance 25°C (1kHz)	Leakage Current 25°C (72h)	Rated Current	Max. Continuous Current ΔT15°C	Surge Current 30°C <1sec					
(V)	(F)	(mΩ)	(mΩ)	(μA)	(A)	(A)	(A)	(mm)			(mm)	
								W	L	H		
5,5 (5,7) SR5	0,22	1800	900	5	0,01	0,20	0,43	5,5	11	13	7,5	SCMDMR5R5224Q00051113ETOH075E3
		1800	900	5	0,01	0,20	0,43	5,5	11	13	3,5	SCMDMR5R5224Q00051113ETOH035E3
	0,33	1420	720	6	0,02	0,30	0,62	6,5	13	14	9	SCMDMR5R5334Q00061314ETOH090E3
		1420	720	6	0,02	0,30	0,62	6,5	13	14	4,2	SCMDMR5R5334Q00061314ETOH042E3
	0,5	820	420	8	0,03	0,50	0,97	8,5	17,0	16,0	12,0	SCMDMR5R5504Q00081716ETOH012E3
		820	420	8	0,03	0,50	0,97	8,5	17,0	16,0	5,0	SCMDMR5R5504Q00081716ETOH005E3
	1	500	260	10	0,06	0,60	1,83	8,5	17,0	16,0	12,0	SCMDMR5R5105Q00081716ETOH012E3
		500	260	10	0,06	0,60	1,88	8,5	17,0	16,0	5,0	SCMDMR5R5105Q00081716ETOH005E3
	1,5	320	170	12	0,09	0,70	2,79	8,5	17,0	22,0	12,0	SCMDMR5R5155Q00081722ETOH012E3
		320	170	12	0,09	0,70	2,79	8,5	17,0	22,0	5,0	SCMDMR5R5155Q00081722ETOH005E3
	2,5	260	140	16	0,15	1,20	4,17	11,0	21,0	22,0	15,5	SCMDMR5R5255Q00112122ETOH015E3
		260	140	16	0,15	1,20	4,17	11,0	21,0	22,0	5,5	SCMDMR5R5255Q00112122ETOH05RE3
	3,5	240	130	20	0,21	1,80	5,23	11,0	21,0	27,0	15,5	SCMDMR5R5355Q00112127ETOH015E3
		240	130	20	0,21	1,80	5,23	11,0	21,0	27,0	5,5	SCMDMR5R5355Q00112127ETOH05RE3
	5	180	100	30	0,30	2,30	7,24	13,0	26,0	27,0	18,0	SCMDMR5R5505Q00132627ETOH018E3
		180	100	30	0,30	2,30	7,24	13,0	26,0	27,0	8,0	SCMDMR5R5505Q00132627ETOH008E3
	10	120	70	60	0,60	2,60	12,50	17,0	33,0	24,0	24,0	SCMDMR5R5106Q00173324ETOH024E3
		120	70	60	0,60	2,60	12,50	17,0	33,0	24,0	9,0	SCMDMR5R5106Q00173324ETOH009E3
	15	92	56	100	0,92	3,40	17,33	17,0	33,0	35,0	24,0	SCMDMR5R5156Q00173335ETOH024E3
		92	56	100	0,92	3,40	17,33	17,0	33,0	35,0	9,0	SCMDMR5R5156Q00173335ETOH009E3
	25	84	52	140	1,53	5,50	22,18	18,0	37,0	43,0	26,0	SCMDMR5R5256Q00183743ETOH026E3
		84	52	140	1,53	5,50	22,18	18,0	37,0	43,0	11,0	SCMDMR5R5256Q00183743ETOH011E3
	50	84	52	180	3,06	6,60	26,44	18,0	37,0	62,0	26,0	SCMDMR5R5506Q00183762ETOH026E3
		84	52	180	3,06	6,60	26,44	18,0	37,0	62,0	11,0	SCMDMR5R5506Q00183762ETOH011E3

* Rated current I_R = 40°I_R = 40°C*U_R/3600 (IEC 62391-1)

ENERGY STORAGE

U _R	C _R	E				Order Code
Rated Voltage (Surge Voltage) Code	Rated Capacitance	Stored Energy	Weight	Specific Energy Density	Power Density (IPM)	
(V)	(F)	(Wh)	(g)	(Wh/kg)	(kW/kg)	
5,5 (5,7) SR5	0,22	0,001	0,9	1,02	4,67	SCMDMR5R5224Q00051113ETOH075E3
		0,001	0,9	1,02	4,67	SCMDMR5R5224Q00051113ETOH035E3
	0,33	0,001	1,5	0,93	3,55	SCMDMR5R5334Q00061314ETOH090E3
		0,001	1,5	0,93	3,55	SCMDMR5R5334Q00061314ETOH042E3
	0,5	0,002	2,0	1,05	4,61	SCMDMR5R5504Q00081716ETOH012E3
		0,002	2,0	1,05	4,61	SCMDMR5R5504Q00081716ETOH005E3
	1	0,004	2,5	1,68	6,05	SCMDMR5R5105Q00081716ETOH012E3
		0,004	2,5	1,68	6,05	SCMDMR5R5105Q00081716ETOH005E3
	1,5	0,006	3,5	1,80	6,75	SCMDMR5R5155Q00081722ETOH012E3
		0,006	3,5	1,80	6,75	SCMDMR5R5155Q00081722ETOH005E3
	2,5	0,011	5,0	2,10	5,82	SCMDMR5R5255Q00112122ETOH015E3
		0,011	5,0	2,10	5,82	SCMDMR5R5255Q00112122ETOH05RE3
	3,5	0,015	6,0	2,45	5,25	SCMDMR5R5355Q00112127ETOH015E3
		0,015	6,0	2,45	5,25	SCMDMR5R5355Q00112127ETOH05RE3
	5	0,021	8,0	2,63	5,25	SCMDMR5R5505Q00132627ETOH018E3
		0,021	8,0	2,63	5,25	SCMDMR5R5505Q00132627ETOH008E3
	10	0,042	13,0	3,23	4,85	SCMDMR5R5106Q00173324ETOH024E3
		0,042	13,0	3,23	4,85	SCMDMR5R5106Q00173324ETOH009E3
	15	0,063	19,0	3,32	4,33	SCMDMR5R5156Q00173335ETOH024E3
		0,063	19,0	3,32	4,33	SCMDMR5R5156Q00173335ETOH009E3
	25	0,105	28,5	3,69	3,16	SCMDMR5R5256Q00183743ETOH026E3
		0,105	28,5	3,69	3,16	SCMDMR5R5256Q00183743ETOH011E3
	50	0,210	40,0	5,25	2,25	SCMDMR5R5506Q00183762ETOH026E3
		0,210	40,0	5,25	2,25	SCMDMR5R5506Q00183762ETOH011E3

Details: Page 38

◇◇ = pin style & length

**6,0V
at 65°C**

- Higher voltage
- up to 500 000 cycles
- Multi-Cell

SRM MR
5,5V
70°Chigher
temperature**SRO OR**
5,5V
85°C

higher voltage

SRS SR
6V
65°C**ITEM CHARACTERISTICS**

Operating Temperature Range (°C)	-40 ~ +65 (-40 ~ +85 at 5V)
Rated Voltage (V)	6
Surge Voltage (V)	6,4
Capacitance Range (F)	0,5 ~ 50
Capacitance Tolerance (25°C)	+30/-10%



The usage at lower temperatures than indicated may be possible. Please contact the Jianghai Europe sales office for approval.

Leakage Current

After 72 hours at 25°C application of rated voltage, leakage current is not more than specified in table.

Self Discharge Voltage

After 72 hours storage at 25°C, 25-85% RH and initial charging at U_R , the remaining voltage shall be $\geq 4,0V$

Temperature Characteristics	The specification shall be met at upper category temperature of 65°C	Capacitance Change	±10% of specified value
		ESR Change	less than specified value
	The specification shall be met at lower category temperature of -40°C	Capacitance Change	±30% of specified value
		ESR Change	less than 400% of specified value
Load Life	The specification shall be met after rated voltage applied at 65°C for 1 000h	Capacitance Change	±30% of specified value
		ESR Change	less than 400% of specified value
Cycle Life	The specification shall be met after 500 000 cycles at 25°C; 1 cycle=charge-discharge from U_R to $\frac{1}{2}U_R$	Capacitance Change	±30% of specified value
		ESR Change	less than 400% of specified value

ENVIRONMENTALThe products are RoHS, WEEE and REACH compliant. The detailed version please see separate "Environmental Certificates" document or www.jianghai-europe.com



SPECIFICATIONS

U _R	C _R	ESR _{DC, max}	ESR _{AC, max}	I _{leak}	I _R *	I _{MAX}	I _S	Size			Pitch	Order Code
Rated Voltage (Surge Voltage) Code	Rated Capacitance	Equivalent Series Resistance 25°C	Equivalent Series Resistance 25°C (1kHz)	Leakage Current 25°C (72h)	Rated Current	Max. Continuous Current ΔT15°C	Surge Current 30°C <1sec					
(V)	(F)	(mΩ)	(mΩ)	(μA)	(A)	(A)	(A)	(mm)			(mm)	
								W	L	H		Details: Page 38
												◇◇ = pin style & length
6 (6.4) 6R0	0,5	1600	800	10	0,03	0,50	0,83	8,5	17,0	16,0	12,0	SCMDSR6R0504Q◇◇081716ETOH012E3
		1600	800	10	0,03	0,50	0,83	8,5	17,0	16,0	5,0	SCMDSR6R0504Q◇◇081716ETOH005E3
	1	660	340	12	0,07	0,60	1,81	8,5	17,0	16,0	12,0	SCMDSR6R0105Q◇◇081716ETOH012E3
		660	340	12	0,07	0,60	1,81	8,5	17,0	16,0	5,0	SCMDSR6R0105Q◇◇081716ETOH005E3
	1,5	420	220	16	0,10	0,70	2,76	8,5	17,0	22,0	12,0	SCMDSR6R0155Q◇◇081722ETOH012E3
		420	220	16	0,10	0,70	2,76	8,5	17,0	22,0	5,0	SCMDSR6R0155Q◇◇081722ETOH005E3
	2,5	340	180	20	0,17	1,20	4,05	11,0	21,0	22,0	15,5	SCMDSR6R0255Q◇◇112122ETOH015E3
		340	180	20	0,17	1,20	4,05	11,0	21,0	22,0	5,5	SCMDSR6R0255Q◇◇112122ETOH05RE3
	3,5	260	140	30	0,23	1,80	5,50	11,0	21,0	27,0	15,5	SCMDSR6R0355Q◇◇112127ETOH015E3
		260	140	30	0,23	1,80	5,50	11,0	21,0	27,0	5,5	SCMDSR6R0355Q◇◇112127ETOH05RE3
	5	220	120	45	0,33	2,30	7,14	13,0	26,0	27,0	18,0	SCMDSR6R0505Q◇◇132627ETOH018E3
		220	120	45	0,33	2,30	7,14	13,0	26,0	27,0	8,0	SCMDSR6R0505Q◇◇132627ETOH008E3
	7,5	160	90	55	0,45	2,40	10,23	13,0	26,0	27,0	18,0	SCMDSR6R0755Q◇◇132627ETOH018E3
		160	90	55	0,45	2,40	10,23	13,0	26,0	27,0	8,0	SCMDSR6R0755Q◇◇132627ETOH008E3
	10	132	76	55	0,67	2,60	12,93	17,0	33,0	24,0	24,0	SCMDSR6R0106Q◇◇173324ETOH024E3
		132	76	55	0,67	2,60	12,93	17,0	33,0	24,0	9,0	SCMDSR6R0106Q◇◇173324ETOH009E3
	15	120	70	120	1,00	3,40	16,07	17,0	33,0	35,0	24,0	SCMDSR6R0156Q◇◇173335ETOH024E3
		120	70	120	1,00	3,40	16,07	17,0	33,0	35,0	9,0	SCMDSR6R0156Q◇◇173335ETOH009E3
	25	100	60	350	1,67	5,50	21,43	18,0	37,0	43,0	26,0	SCMDSR6R0256Q◇◇183743ETOH026E3
		100	60	350	1,67	5,50	21,43	18,0	37,0	43,0	11,0	SCMDSR6R0256Q◇◇183743ETOH011E3
	50	92	56	550	3,33	6,60	26,79	18,0	37,0	62,0	26,0	SCMDSR6R0506Q◇◇183762ETOH026E3
		92	56	550	3,33	6,60	26,79	18,0	37,0	62,0	11,0	SCMDSR6R0506Q◇◇183762ETOH011E3

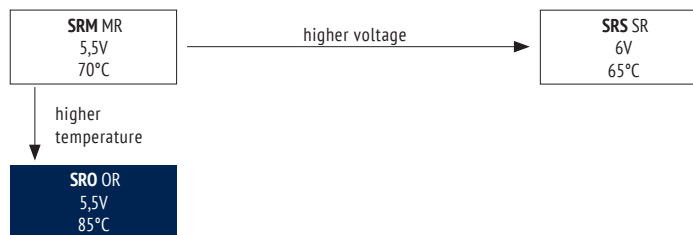
* Rated current I_R = 40°I_A = 40°C*U_R/3600 (IEC 62391-1)

ENERGY STORAGE

U _R	C _R	E				Order Code
Rated Voltage (Surge Voltage) Code	Rated Capacitance	Stored Energy	Weight	Specific Energy Density	Power Density (IPM)	
(V)	(F)	(Wh)	(g)	(Wh/kg)	(kW/kg)	
						Details: Page 38
						◇◇ = pin style & length
6 (6.4) 6R0	0,5	0,003	2,0	1,25	2,81	SCMDSR6R0504Q◇◇081716ETOH012E3
		0,003	2,0	1,25	2,81	SCMDSR6R0504Q◇◇081716ETOH005E3
	1	0,005	2,5	2,00	5,45	SCMDSR6R0105Q◇◇081716ETOH012E3
		0,005	2,5	2,00	5,45	SCMDSR6R0105Q◇◇081716ETOH005E3
	1,5	0,008	3,5	2,14	6,12	SCMDSR6R0155Q◇◇081722ETOH012E3
		0,008	3,5	2,14	6,12	SCMDSR6R0155Q◇◇081722ETOH005E3
	2,5	0,013	5,0	2,50	5,29	SCMDSR6R0255Q◇◇112122ETOH015E3
		0,013	5,0	2,50	5,29	SCMDSR6R0255Q◇◇112122ETOH05RE3
	3,5	0,018	6,0	2,92	5,77	SCMDSR6R0355Q◇◇112127ETOH015E3
		0,018	6,0	2,92	5,77	SCMDSR6R0355Q◇◇112127ETOH05RE3
	5	0,025	8,0	3,13	5,11	SCMDSR6R0505Q◇◇132627ETOH018E3
		0,025	8,0	3,13	5,11	SCMDSR6R0505Q◇◇132627ETOH008E3
	7,5	0,038	9,5	3,95	5,92	SCMDSR6R0755Q◇◇132627ETOH018E3
		0,038	9,5	3,95	5,92	SCMDSR6R0755Q◇◇132627ETOH008E3
	10	0,050	13,0	3,85	5,24	SCMDSR6R0106Q◇◇173324ETOH024E3
		0,050	13,0	3,85	5,24	SCMDSR6R0106Q◇◇173324ETOH009E3
	15	0,075	19,0	3,95	3,95	SCMDSR6R0156Q◇◇173335ETOH024E3
		0,075	19,0	3,95	3,95	SCMDSR6R0156Q◇◇173335ETOH009E3
	25	0,125	29,0	4,31	3,10	SCMDSR6R0256Q◇◇183743ETOH026E3
		0,125	29,0	4,31	3,10	SCMDSR6R0256Q◇◇183743ETOH011E3
	50	0,250	40,0	6,25	2,45	SCMDSR6R0506Q◇◇183762ETOH026E3
		0,250	40,0	6,25	2,45	SCMDSR6R0506Q◇◇183762ETOH011E3

**5,5V
at 85°C**

- Higher temperature range
- up to 500 000 cycles
- Multi-Cell

**ITEM CHARACTERISTICS**

Operating Temperature Range (°C)	-40 ~ +85
Rated Voltage (V)	5,5
Surge Voltage (V)	5,7
Capacitance Range (F)	0,5 ~ 25
Capacitance Tolerance (25°C)	+30/-10%



The usage at lower temperatures than indicated may be possible. Please contact the Jianghai Europe sales office for approval.

Leakage Current

After 72 hours at 25°C application of rated voltage, leakage current is not more than specified in table.

Self Discharge Voltage

After 72 hours storage at 25°C, 25-85% RH and initial charging at U_R , the remaining voltage shall be $\geq 4,0V$

Temperature Characteristics

The specification shall be met at **upper** category temperature of 85°C

Capacitance Change

±10% of specified value

ESR Change

less than specified value

The specification shall be met at **lower** category temperature of -40°C

Capacitance Change

±30% of specified value

ESR Change

less than 400% of specified value

Load Life

The specification shall be met after rated voltage applied at 85°C for 1 000h

Capacitance Change

±30% of specified value

ESR Change

less than 400% of specified value

Cycle Life

The specification shall be met after 500 000 cycles at 25°C;
1 cycle=charge-discharge from U_R to $\frac{1}{2}U_R$

Capacitance Change

±30% of specified value

ESR Change

less than 400% of specified value

ENVIRONMENTAL

The products are RoHS, WEEE and REACH compliant. The detailed version please see separate "Environmental Certificates" document or www.jianghai-europe.com





SPECIFICATIONS

U _R	C _R	ESR _{DC, max}	ESR _{AC, max}	I _{leak}	I _R *	I _{MAX}	I _S	Size			Pitch	Order Code
Rated Voltage (Surge Voltage) Code	Rated Capacitance	Equivalent Series Resistance 25°C	Equivalent Series Resistance 25°C (1kHz)	Leakage Current 25°C (72h)	Rated Current	Max. Continuous Current ΔT15°C	Surge Current 30°C <1sec					
(V)	(F)	(mΩ)	(mΩ)	(μA)	(A)	(A)	(A)	(mm)			(mm)	
								W	L	H		
5,5 (5.7) 5R5	0,5	1600	800	10	0,03	0,50	0,76	8,5	17,0	16,0	12,0	SCMDOR5R5504Q0081716ETOH012E3
		1600	800	10	0,03	0,50	0,76	8,5	17,0	16,0	5,0	SCMDOR5R5504Q0081716ETOH005E3
	1	660	340	12	0,06	0,60	1,66	8,5	17,0	16,0	12,0	SCMDOR5R5105Q0081716ETOH012E3
		660	340	12	0,06	0,60	1,66	8,5	17,0	16,0	5,0	SCMDOR5R5105Q0081716ETOH005E3
	1,5	420	220	16	0,09	0,70	2,53	8,5	17,0	22,0	12,0	SCMDOR5R5155Q0081722ETOH012E3
		420	220	16	0,09	0,70	2,53	8,5	17,0	22,0	5,0	SCMDOR5R5155Q0081722ETOH005E3
	2,5	340	180	20	0,15	1,20	3,72	11,0	21,0	22,0	15,5	SCMDOR5R5255Q0112122ETOH015E3
		340	180	20	0,15	1,20	3,72	11,0	21,0	22,0	5,5	SCMDOR5R5255Q0112122ETOH005E3
	3,5	260	140	30	0,21	1,80	5,04	11,0	21,0	27,0	15,5	SCMDOR5R5355Q0112127ETOH015E3
		260	140	30	0,21	1,80	5,04	11,0	21,0	27,0	5,5	SCMDOR5R5355Q0112127ETOH005E3
	5	220	120	45	0,31	2,30	6,55	13,0	26,0	27,0	18,0	SCMDOR5R5505Q0132627ETOH018E3
		220	120	45	0,31	2,30	6,55	13,0	26,0	27,0	8,0	SCMDOR5R5505Q0132627ETOH008E3
	7,5	160	90	55	0,45	2,40	9,38	13,0	26,0	27,0	18,0	SCMDOR5R5755Q0132627ETOH018E3
		160	90	55	0,45	2,40	9,38	13,0	26,0	27,0	8,0	SCMDOR5R5755Q0132627ETOH008E3
	10	132	76	55	0,61	2,60	11,85	17,0	33,0	24,0	24,0	SCMDOR5R5106Q0173324ETOH024E3
		132	76	55	0,61	2,60	11,85	17,0	33,0	24,0	9,0	SCMDOR5R5106Q0173324ETOH009E3
	15	120	70	120	0,92	3,40	14,73	17,0	33,0	35,0	24,0	SCMDOR5R5156Q0173335ETOH024E3
		120	70	120	0,92	3,40	14,73	17,0	33,0	35,0	9,0	SCMDOR5R5156Q0173335ETOH009E3
	25	100	60	350	1,53	5,50	19,64	18,0	37,0	43,0	26,0	SCMDOR5R5256Q0183743ETOH026E3
		100	60	350	1,53	5,50	19,64	18,0	37,0	43,0	11,0	SCMDOR5R5256Q0183743ETOH011E3

* Rated current I_R = 40°I_A = 40°C*U_R/3600 (IEC 62391-1)

ENERGY STORAGE

U _R	C _R	E				Order Code
Rated Voltage (Surge Voltage) Code	Rated Capacitance	Stored Energy	Weight	Specific Energy Density	Power Density (IPM)	
(V)	(F)	(Wh)	(g)	(Wh/kg)	(kW/kg)	
5,5 (5.7) 5R5	0,5	0,002	2,0	1,05	2,36	SCMDOR5R5504Q0081716ETOH012E3
		0,002	2,0	1,05	2,36	SCMDOR5R5504Q0081716ETOH005E3
	1	0,004	2,5	1,68	4,58	SCMDOR5R5105Q0081716ETOH012E3
		0,004	2,5	1,68	4,58	SCMDOR5R5105Q0081716ETOH005E3
	1,5	0,006	3,5	1,80	5,14	SCMDOR5R5155Q0081722ETOH012E3
		0,006	3,5	1,80	5,14	SCMDOR5R5155Q0081722ETOH005E3
	2,5	0,011	5,0	2,10	4,45	SCMDOR5R5255Q0112122ETOH015E3
		0,011	5,0	2,10	4,45	SCMDOR5R5255Q0112122ETOH005E3
	3,5	0,015	6,0	2,45	4,85	SCMDOR5R5355Q0112127ETOH015E3
		0,015	6,0	2,45	4,85	SCMDOR5R5355Q0112127ETOH005E3
	5	0,021	8,0	2,63	4,30	SCMDOR5R5505Q0132627ETOH018E3
		0,021	8,0	2,63	4,30	SCMDOR5R5505Q0132627ETOH008E3
	7,5	0,032	9,5	3,32	4,98	SCMDOR5R5755Q0132627ETOH018E3
		0,032	9,5	3,32	4,98	SCMDOR5R5755Q0132627ETOH008E3
	10	0,042	13,0	3,23	4,41	SCMDOR5R5106Q0173324ETOH024E3
		0,042	13,0	3,23	4,41	SCMDOR5R5106Q0173324ETOH009E3
	15	0,063	19,0	3,32	3,32	SCMDOR5R5156Q0173335ETOH024E3
		0,063	19,0	3,32	3,32	SCMDOR5R5156Q0173335ETOH009E3
	25	0,105	29,0	3,62	2,61	SCMDOR5R5256Q0183743ETOH026E3
		0,105	29,0	3,62	2,61	SCMDOR5R5256Q0183743ETOH011E3

Details: Page 38

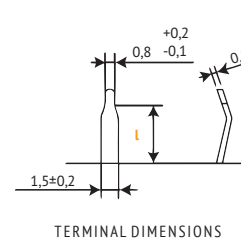
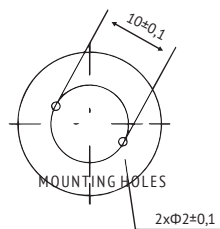
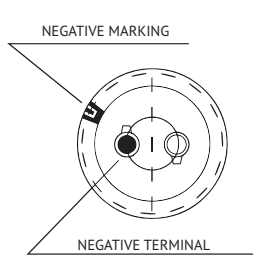
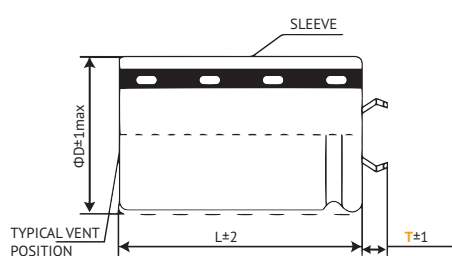
◇◇ = pin style & length

**ORDER CODE EDLC TYPE SNAP-IN**

SC	C	D	PS	2R7	107	Q	T4	P2	2245	E	E3	JExxxxx
Technology	Design Code	Energy-Capacitor Type	Series Code	Rated Voltage Code	Capacitance Code (in F)	Capacitance Tolerance Code	Pin Length	Pin	Dimension øD x h	Material Code Sleeve	for internal use	for Specials only
SC = Energy-Capacitor	Cell/Cylindric C	EDLC D	SSP PS SSE ES SSL LS	2,7 2R7 3,0 3R0	60 606 100 107 150 157 200 207 220 227 350 357 400 407 470 477 1000 108 1200 128	+30% / -10% Q +20% / -20% M *20% / -0% R	4,0mm T/L4 6,3mm T/L6 Lug SL	2 Pin P2 3 Pin P3 4 Pin P4	22x45 2245 25x50 2550 35x50 3550 35x60 3560 35x70 3570 40x70 4070 40x75 4075 40x90 4090 40x105 4010	PET E PVC V	E3	

2 PIN TYPE: T6P2 / T4P2 STANDARD

in mm



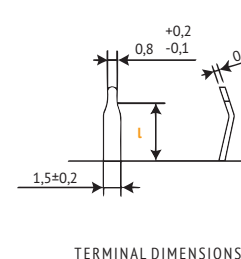
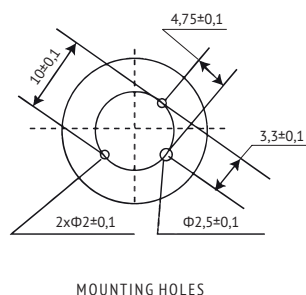
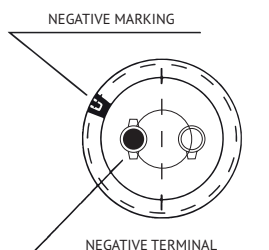
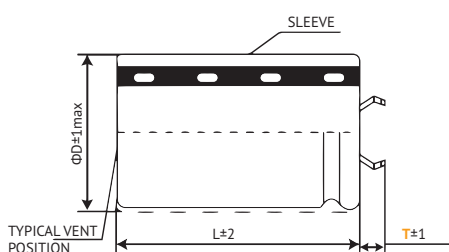
Standard Version: Self-Lock Terminal. Other terminal types and styles on request.
For diameter $\phi D \geq 45\text{mm}$ the safety vent is typically placed at the side of the housing.

Terminal	T6	T4 (preferred)
Pin Length T	6,3 mm	4,0 mm
Pin Detail L	3,5 mm	2,5 mm

! T4P2 preferred for diameter ≤ 30

3 PIN TYPE: T4P3

in mm



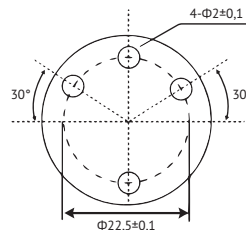
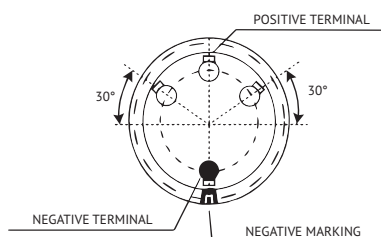
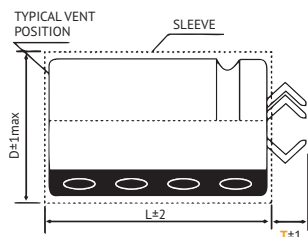
For diameter $\phi D \geq 45\text{mm}$ the safety vent is typically placed at the side of the housing.

Terminal	T6	T4
Pin Length T	-	4,0 mm
Pin Detail L	-	2,5 mm

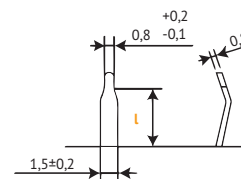


4 PIN TYPE: T6P4/T4P4 STANDARD

in mm



MOUNTING HOLES



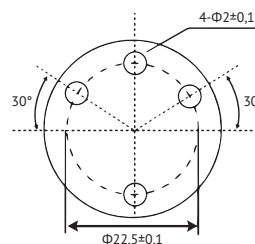
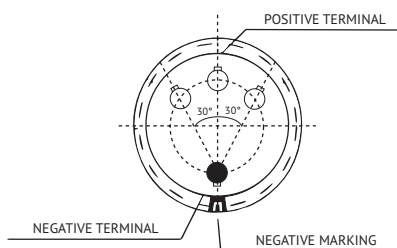
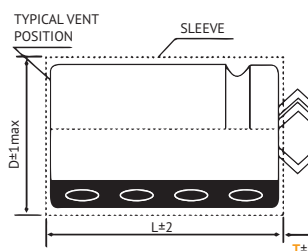
TERMINAL DIMENSIONS

Standard Version: Non-Lock-Terminal. Other terminal types and styles on request.
For $\varnothing D \geq 30\text{mm}$ only.
For diameter $\varnothing D \geq 45\text{mm}$ the safety vent is typically placed at the side of the housing.

Terminal	T6 (preferred)	T4
Pin Length T	6,3 mm	4,0 mm
Pin Detail L	3,5 mm	2,5 mm

4 PIN TYPE: L6P4/L4P4 SELF-LOCK TERMINAL

in mm

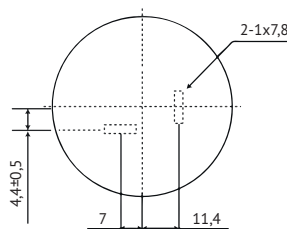
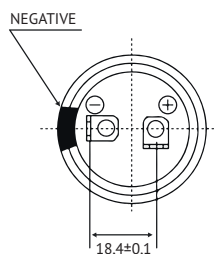
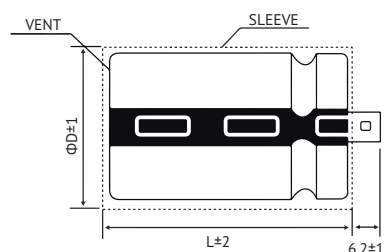


For $\varnothing D \geq 30\text{mm}$ only. Other terminal types and styles on request.
For diameter $\varnothing D \geq 45\text{mm}$ the safety vent is typically placed at the side of the housing.

Terminal	T6 (preferred)	T4
Pin Length T	6,3 mm	4,0 mm
Pin Detail L	3,5 mm	2,5 mm

LUG-TERMINAL: SLP2 STANDARD

in mm

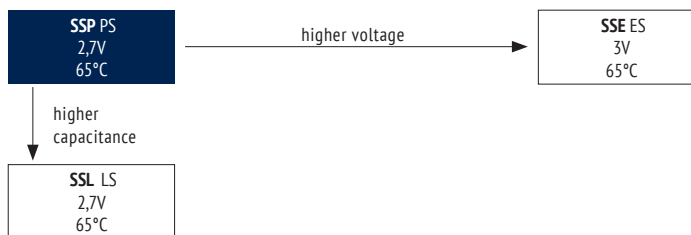


SLP2 preferred for diameter ≥ 35 .

OTHER PIN STYLES ON REQUEST.

**2,7V
at 65°C**

- Standard
- up to 500 000 cycles
- Fast charge/discharge

**ITEM CHARACTERISTICS**

Operating Temperature Range (°C)	-40 ~ +65 (-40 ~ +85 at 2,3V)
Rated Voltage (V)	2,7
Surge Voltage (V)	2,85
Capacitance Range (F)	100 ~ 800
Capacitance Tolerance (25°C)	+30/-10%



The usage at lower temperatures than indicated may be possible. Please contact the Jianghai Europe sales office for approval.

Leakage Current	After 72 hours at 25°C application of rated voltage, leakage current is not more than specified in table.
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Self Discharge Voltage	After 72 hours storage at 25°C, 25~85% RH, and initial charging at U_R , the remaining voltage shall be $\geq 2,1V$
------------------------	---

Temperature Characteristics	The specification shall be met at upper category temperature of 65°C	Capacitance Change	$\pm 10\%$ of specified value
		ESR Change	less than specified value
	The specification shall be met at lower category temperature of -40°C	Capacitance Change	$\pm 30\%$ of specified value
		ESR Change	less than 200% of specified value

Load Life	The specification shall be met after rated voltage applied at 65°C for 1 500h	Capacitance Change	$\pm 30\%$ of specified value
		ESR Change	less than 200% of specified value

Cycle Life	The specification shall be met after 500 000 cycles at 25°C; 1 cycle=charge-discharge from U_R to $\frac{1}{2}U_R$	Capacitance Change	$\pm 30\%$ of specified value
		ESR Change	less than 200% of specified value

ENVIRONMENTAL

The products are RoHS, WEEE and REACH compliant. The detailed version please see separate "Environmental Certificates" document or www.jianghai-europe.com





SPECIFICATIONS

U _R Rated Voltage (Surge Voltage) Code (V)	C _R Rated Capacitance (F)	ESR _{DC, max} Equivalent Series Resistance 25°C (mΩ)	ESR _{AC, max} Equivalent Series Resistance 25°C (1kHz) (mΩ)	I _{leak} Leakage Current 25°C (72h) (μA)	I _R * Rated Current (A)	I _{MAX} Max. Continuous Current ΔT15°C (A)	I _S Surge Current <1sec (A)	Size mm DxL	Order Code Details: Page 48 ◇◇ = pin style & length ΔΔ = pin number
2,7 (2,85) 2R7	100	12	8	300	3,0	6,7	61,36	22 x 45	SCCDPS2R7107Q◇◇ΔΔ2245EE3
	120	12	8	300	3,6	6,7	66,39	22 x 45	SCCDPS2R7127Q◇◇ΔΔ2245EE3
	160	12	8	500	4,8	6,7	73,97	22 x 55	SCCDPS2R7167Q◇◇ΔΔ2255EE3
	150	11	7	500	4,5	8,6	76,42	25 x 50	SCCDPS2R7157Q◇◇ΔΔ2550EE3
	200	10	6	700	6,0	13,4	90,00	30 x 50	SCCDPS2R7207Q◇◇ΔΔ3050EE3
	220	10	6	700	6,6	13,5	92,81	30 x 50	SCCDPS2R7227Q◇◇ΔΔ3050EE3
	240	9	5	700	7,2	14	102,53	30 x 50	SCCDPS2R7247Q◇◇ΔΔ3050EE3
	350	3,5	3,0	1000	10,5	18,9	212,36	35 x 60	SCCDPS2R7357Q◇◇ΔΔ3560EE3
	400	3,2	2,8	1000	12,0	21	236,84	35 x 60	SCCDPS2R7407Q◇◇ΔΔ3560EE3
	470	3,5	3,0	1300	14,1	25	239,89	35 x 60	SCCDPS2R7477Q◇◇ΔΔ3560EE3
	500	3,4	2,9	1300	15,0	28	250,00	35 x 67	SCCDPS2R7507Q◇◇ΔΔ3567EE3
	600	3,0	2,5	1500	18,0	33	289,29	35 x 70	SCCDPS2R7607Q◇◇ΔΔ3570EE3
	800	3,0	2,5	2000	24,0	33	317,65	40 x 70	SCCDPS2R7807Q◇◇ΔΔ4070EE3

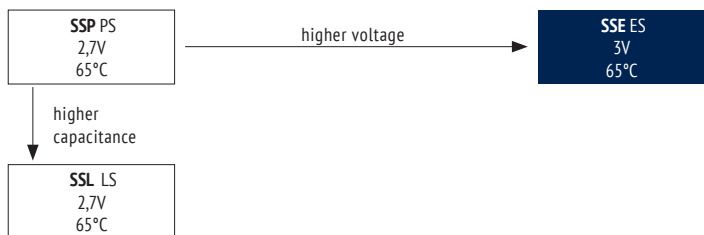
* Rated current I_R = 40°I_A = 40°C_R*U_R/3600 (IEC 62391-1)

ENERGY STORAGE

U _R Rated Voltage (Surge Voltage) Code (V)	C _R Rated Capacitance (F)	E Stored Energy (Wh)	Weight (g)	Specific Energy Density (Wh/kg)	Power Density (IPM) (kW/kg)	Order Code Details: Page 48 ◇◇ = pin style & length ΔΔ = pin number
2,7 (2,85) 2R7	100	0,101	21	4,82	7,23	SCCDPS2R7107Q◇◇ΔΔ2245EE3
	120	0,122	21	5,79	7,23	SCCDPS2R7127Q◇◇ΔΔ2245EE3
	160	0,162	30	5,40	5,06	SCCDPS2R7167Q◇◇ΔΔ2255EE3
	150	0,152	30	5,06	5,52	SCCDPS2R7157Q◇◇ΔΔ2550EE3
	200	0,203	36	5,63	5,06	SCCDPS2R7207Q◇◇ΔΔ3050EE3
	220	0,223	39	5,71	4,67	SCCDPS2R7227Q◇◇ΔΔ3050EE3
	240	0,243	45	5,40	4,50	SCCDPS2R7247Q◇◇ΔΔ3050EE3
	350	0,354	73	4,85	7,13	SCCDPS2R7357Q◇◇ΔΔ3560EE3
	400	0,405	73	5,55	7,80	SCCDPS2R7407Q◇◇ΔΔ3560EE3
	470	0,476	73	6,52	7,13	SCCDPS2R7477Q◇◇ΔΔ3560EE3
	500	0,506	76	6,66	7,05	SCCDPS2R7507Q◇◇ΔΔ3567EE3
	600	0,608	90	6,75	6,75	SCCDPS2R7607Q◇◇ΔΔ3570EE3
	800	0,810	115	7,04	5,28	SCCDPS2R7807Q◇◇ΔΔ4070EE3

**3V
at 65°C**

- Higher voltage
- up to 500 000 cycles
- Fast charge/discharge

**ITEM CHARACTERISTICS**

Operating Temperature Range (°C)	-40 ~ +65 (-40 ~ +85 at 2,5V)
Rated Voltage (V)	3,0
Surge Voltage (V)	3,15
Capacitance Range (F)	100 ~ 600
Capacitance Tolerance (25°C)	+30/-10%



The usage at lower temperatures than indicated may be possible. Please contact the Jianghai Europe sales office for approval.

Leakage Current	After 72 hours at 25°C application of rated voltage, leakage current is not more than specified in table.
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Self Discharge Voltage	After 72 hours storage at 25°C, 25~85% RH, and initial charging at U_R , the remaining voltage shall be $\geq 2,3V$
------------------------	---

Temperature Characteristics	The specification shall be met at upper category temperature of 65°C	Capacitance Change	$\pm 10\%$ of specified value
		ESR Change	less than specified value
	The specification shall be met at lower category temperature of -40°C	Capacitance Change	$\pm 30\%$ of specified value
		ESR Change	less than 200% of specified value

Load Life	The specification shall be met after rated voltage applied at 65°C for 1 000h	Capacitance Change	$\pm 30\%$ of specified value
		ESR Change	less than 200% of specified value

Cycle Life	The specification shall be met after 500 000 cycles at 25°C; 1 cycle=charge-discharge from U_R to $\frac{1}{2}U_R$	Capacitance Change	$\pm 30\%$ of specified value
		ESR Change	less than 200% of specified value

ENVIRONMENTAL

The products are RoHS, WEEE and REACH compliant. The detailed version please see separate "Environmental Certificates" document or www.jianghai-europe.com





SPECIFICATIONS

U _R Rated Voltage (Surge Voltage) Code (V)	C _R Rated Capacitance (F)	ESR _{DC, max} Equivalent Series Resistance 25°C (mΩ)	ESR _{AC, max} Equivalent Series Resistance 25°C (1kHz) (mΩ)	I _{leak} Leakage Current 25°C (72h) (μA)	I _R * Rated Current (A)	I _{MAX} Max. Continuous Current ΔT15°C (A)	I _S Surge Current <1sec (A)	Size mm DxL	Order Code Details: Page 48 ◇◇ = pin style & length ΔΔ = pin number
3 (3,15) 3R0	100	12	8	300	3,3	6,7	68,18	22 x 45	SCCDES3R0107Q◇◇ΔΔ2245EE3
	120	12	8	300	4,0	6,7	73,77	22 x 45	SCCDES3R0127Q◇◇ΔΔ2245EE3
	160	12	8	500	5,3	6,7	82,19	22 x 55	SCCDES3R0167Q◇◇ΔΔ2255EE3
	150	11	7	500	5,0	8,6	84,91	25 x 50	SCCDES3R0157Q◇◇ΔΔ2550EE3
	200	10	6	700	6,7	13,4	100,00	30 x 50	SCCDES3R0207Q◇◇ΔΔ3050EE3
	220	11	7	700	7,3	13,5	96,49	30 x 50	SCCDES3R0227Q◇◇ΔΔ3050EE3
	240	11	7	700	8,0	14	98,90	30 x 50	SCCDES3R0247Q◇◇ΔΔ3050EE3
	350	3,6	3,1	1000	11,7	18,9	232,30	35 x 60	SCCDES3R0357Q◇◇ΔΔ3560EE3
	400	3,3	2,9	1200	13,3	21	258,62	35 x 60	SCCDES3R0407Q◇◇ΔΔ3560EE3
	470	3,6	3,1	1300	15,7	25	261,89	35 x 60	SCCDES3R0477Q◇◇ΔΔ3560EE3
	500	3,5	3,0	1300	16,7	28	272,73	35 x 67	SCCDES3R0507Q◇◇ΔΔ3567EE3
	600	3,0	2,5	1500	20,0	33	321,43	35 x 70	SCCDES3R0607Q◇◇ΔΔ3570EE3

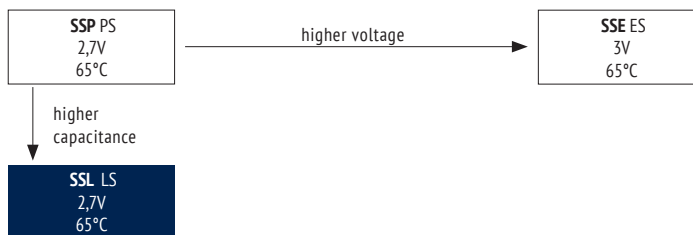
* Rated current I_R = 40°I_A = 40°C_R*U_R/3600 (IEC 62391-1)

ENERGY STORAGE

U _R Rated Voltage (Surge Voltage) Code (V)	C _R Rated Capacitance (F)	E Stored Energy (Wh)	Weight (g)	Specific Energy Density (Wh/kg)	Power Density (IPM) (kW/kg)	Order Code Details: Page 48 ◇◇ = pin style & length ΔΔ = pin number
3 (3,15) 3R0	100	0,125	21	5,95	8,93	SCCDES3R0107Q◇◇ΔΔ2245EE3
	120	0,150	21	7,14	8,93	SCCDES3R0127Q◇◇ΔΔ2245EE3
	160	0,200	30	6,67	6,25	SCCDES3R0167Q◇◇ΔΔ2255EE3
	150	0,188	30	6,25	6,82	SCCDES3R0157Q◇◇ΔΔ2550EE3
	200	0,250	36	6,94	6,25	SCCDES3R0207Q◇◇ΔΔ3050EE3
	220	0,275	39	7,05	5,24	SCCDES3R0227Q◇◇ΔΔ3050EE3
	240	0,300	45	6,67	4,55	SCCDES3R0247Q◇◇ΔΔ3050EE3
	350	0,438	73	5,99	8,56	SCCDES3R0357Q◇◇ΔΔ3560EE3
	400	0,500	73	6,85	9,34	SCCDES3R0407Q◇◇ΔΔ3560EE3
	470	0,588	73	8,05	8,56	SCCDES3R0477Q◇◇ΔΔ3560EE3
	500	0,625	76	8,22	8,46	SCCDES3R0507Q◇◇ΔΔ3567EE3
	600	0,750	90	8,33	8,33	SCCDES3R0607Q◇◇ΔΔ3570EE3

**2,7V
at 85°C**

- Higher capacitance
- up to 500 000 cycles
- Fast charge/discharge

**ITEM CHARACTERISTICS**

Operating Temperature Range (°C)	-40 ~ +65 (-40 ~ +85 at 2,3V)
Rated Voltage (V)	2,7
Surge Voltage (V)	2,85
Capacitance Range (F)	350 ~ 1200
Capacitance Tolerance (25°C)	+30/-10%



The usage at lower temperatures than indicated may be possible. Please contact the Jianghai Europe sales office for approval.

Leakage Current

After 72 hours at 25°C application of rated voltage, leakage current is not more than specified in table.

Self Discharge Voltage

After 72 hours storage at 25°C, 25~85% RH, and initial charging at U_R , the remaining voltage shall be $\geq 2,1V$

Temperature Characteristics

The specification shall be met at **upper** category temperature of 65°C

Capacitance Change

±10% of specified value

ESR Change

less than specified value

The specification shall be met at **lower** category temperature of -40°C

Capacitance Change

±30% of specified value

ESR Change

less than 200% of specified value

Load Life

The specification shall be met after rated voltage applied at 65°C for 1 500h

Capacitance Change

±30% of specified value

ESR Change

less than 200% of specified value

Cycle Life

The specification shall be met after 500 000 cycles at 25°C;
1 cycle=charge-discharge from U_R to $\frac{1}{2}U_R$

Capacitance Change

±30% of specified value

ESR Change

less than 200% of specified value

ENVIRONMENTAL

The products are RoHS, WEEE and REACH compliant. The detailed version please see separate "Environmental Certificates" document or www.jianghai-europe.com





SPECIFICATIONS

U _R	C _R	ESR _{DC, max}	ESR _{AC, max}	I _{leak}	I _R *	I _{MAX}	I _S	Size	Order Code
Rated Voltage (Surge Voltage) Code	Rated Capacitance	Equivalent Series Resistance 25°C	Equivalent Series Resistance 25°C (1kHz)	Leakage Current 25°C (72h)	Rated Current	Max. Continuous Current ΔT15°C	Surge Current <1sec	mm DxL	Details: Page 48
(V)	(F)	(mΩ)	(mΩ)	(μA)	(A)	(A)	(A)		
2,7 (2,85) 2R7	350	2,8	2,3	1000	10,5	21	238,64	35 x 60	SCCDLS2R7357QSL3560EE3
	400	2,7	2,2	1000	12,0	23	259,62	35 x 60	SCCDLS2R7407QSL3560EE3
	800	2,7	2,2	1500	24,0	35	341,77	40 x 70	SCCDLS2R7807QSL4070EE3
	900	2,5	2,0	2250	27,0	38	373,85	40 x 75	SCCDLS2R7907QSL4075EE3
	1000	2,5	2,0	2500	30,0	38	385,71	40 x 90	SCCDLS2R7108QSL4090EE3
	1200	2,3	1,8	3000	36,0	41	430,85	40 x 105	SCCDLS2R7128QSL40105EE3

* Rated current I_R = 40°I_A = 40°C_R*U_R/3600 (IEC 62391-1)

ENERGY STORAGE

U _R	C _R	E	Weight	Specific Energy Density	Power Density (IPM)	Order Code
Rated Voltage (Surge Voltage) Code	Rated Capacitance	Stored Energy				Details: Page 48
(V)	(F)	(Wh)	(g)	(Wh/kg)	(kW/kg)	
2,7 (2,85) 2R7	350	0,354	73	4,85	8,92	SCCDLS2R7357QSL3560EE3
	400	0,405	73	5,55	9,25	SCCDLS2R7407QSL3560EE3
	800	0,810	115	7,04	5,87	SCCDLS2R7807QSL4070EE3
	900	0,911	125	7,29	5,83	SCCDLS2R7907QSL4075EE3
	1000	1,013	150	6,75	4,86	SCCDLS2R7108QSL4090EE3
	1200	1,215	178	6,83	4,45	SCCDLS2R7128QSL40105EE3

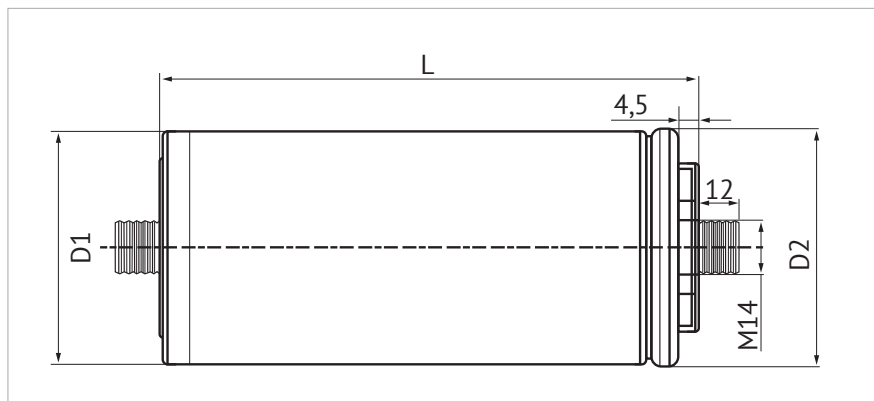


ORDER CODE EDLC TYPE AXIAL

SC	C	D	PG	2R7	308	Q	GA	610	138	E	E3	JExxxxx
Technology	Design code	Energy-Capacitor Type	Series Code	Rated Voltage Code	Capacitance Code (in F)	Capacitance Tolerance Code	Terminal style	Diameter	Lenght	Material Code Sleeve	for internal use	For Specials only
SC=Energy-Capacitor	Cell/CylindricC	EDLCD	SGPPG SGEEG	2,72R7 33R0	650657 1200128 1500158 2000208 3000308 3400348	+30%/-10%Q +20%/-20%M *20%/-0%R	M14 * 12mm (male)GA M14 welding terminalGB M12 * 14mm (male)GC	61mm610	51,5mm052 74mm074 85mm085 102mm102 138mm138	PETE PVCY	E3	

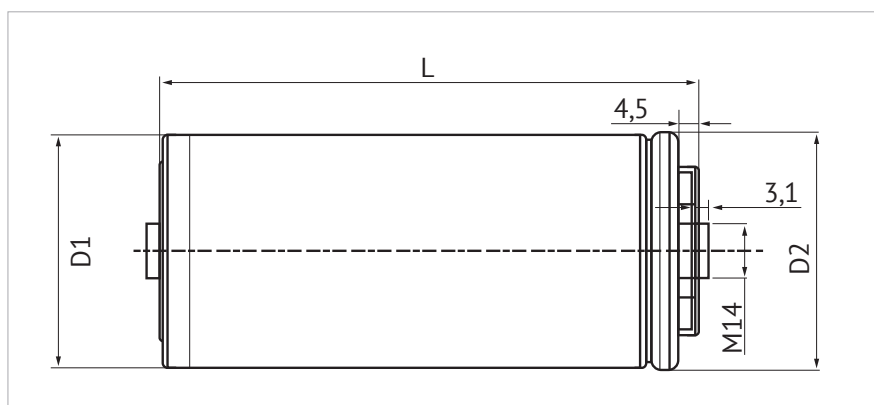


GA-TYPE



ITEMS	CRITERIA
D1	60±1mm
D2	61±1mm
L	138±2mm

GB-TYPE (preferred)



ITEMS	CRITERIA
D1	60±1mm
D2	61±1mm
L	138±2mm

**2,7V
at 65°C**

- Standard
- Fast charge/discharge
- High power density
- up to 1 000 000 cycles

SGP PG
2,7V
65°C

higher voltage →

SGE EG
3V
65°C

ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-40 ~ +65
Rated Voltage (V)	2,7
Surge Voltage (V)	2,85
Capacitance Range (F)	650 ~ 3400
Capacitance Tolerance (25°C)	+20/0%



The usage at lower temperatures than indicated may be possible. Please contact the Jianghai Europe sales office for approval.

Leakage Current	After 72 hours at 25°C application of rated voltage, leakage current is not more than specified in table.
-----------------	---

Self Discharge Voltage	After 72 hours storage at 25°C, 25~85% RH, and initial charging at U_R , the remaining voltage shall be $\geq 2,1V$
------------------------	---

Temperature Characteristics	The specification shall be met at upper category temperature of 65°C	Capacitance Change	±10% of specified value
		ESR Change	less than specified value
	The specification shall be met at lower category temperature of -40°C	Capacitance Change	±20% of specified value
		ESR Change	less than 200% of specified value
Load Life	The specification shall be met after rated voltage applied at 65°C for 1 500h	Capacitance Change	±20% of specified value
		ESR Change	less than 200% of specified value
Cycle Life	The specification shall be met after 1 000 000 cycles at 25°C; 1 cycle=charge-discharge from U_R to $\frac{1}{2}U_R$	Capacitance Change	±20% of specified value
		ESR Change	less than 200% of specified value

ENVIRONMENTAL

The products are RoHS, WEEE and REACH compliant. The detailed version please see separate "Environmental Certificates" document or www.jianghai-europe.com

GB Terminal

SPECIFICATIONS

U _R	C _R	ESR _{DC, max}	I _{leak}	I _R *	I _{MAX}	I _{MAX}	I _S	Size	Order Code
Rated Voltage (Surge Voltage) Code	Rated Capacitance	Equivalent Series Resistance 25°C	Leakage Current 25°C (72h)	Rated Current	Max. Continuous Current ΔT15°C	Max. Continuous Current ΔT40°C	Surge Current <1sec		Details: Page 56
(V)	(F)	(mΩ)	(μA)	(A)	(A)	(A)	(A)	mm DxL	
2,7 (2,85) 2R7	650	0,57	1 500	19,5	54	88	640,28	61 x 51,5	SCCDPG2R7657RGB610052EE3
	1 200	0,33	2 700	36	70	110	1 160,46	61 x 74	SCCDPG2R7128RGB610074EE3
	1 500	0,28	3 000	45	84	140	1 426,06	61 x 85	SCCDPG2R7158RGB610085EE3
	2 000	0,27	4 000	60	110	170	1 753,25	61 x 102	SCCDPG2R7208RGB610102EE3
	3 000	0,23	5 000	90	130	210	2 396,45	61 x 138	SCCDPG2R7308RGB610138EE3
	3 400	0,20	8 000	102	130	210	2 732,14	61 x 138	SCCDPG2R7348RGB610138EE3

* Rated current I_R = 40°I_A = 40°C_R*U_R/3600 (IEC 62391-1)

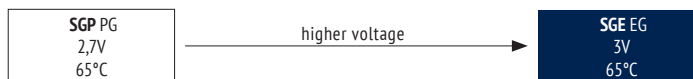
ENERGY STORAGE

U _R	C _R	E				Order Code
Rated Voltage (Surge Voltage) Code	Rated Capacitance	Stored Energy	Weight	Specific Energy Density	Power Density (IPM)	Details: Page 56
(V)	(F)	(Wh)	(g)	(Wh/kg)	(kW/kg)	
2,7 (2,85) 2R7	650	0,658	180	3,66	17,76	SCCDPG2R7657RGB610052EE3
	1 200	1,215	260	4,67	21,24	SCCDPG2R7128RGB610074EE3
	1 500	1,519	300	5,06	21,70	SCCDPG2R7158RGB610085EE3
	2 000	2,025	370	5,47	18,24	SCCDPG2R7208RGB610102EE3
	3 000	3,038	505	6,01	15,69	SCCDPG2R7308RGB610138EE3
	3 400	3,443	510	6,75	17,87	SCCDPG2R7348RGB610138EE3

GA Terminal on request.

**3V
at 65°C**

- Higher voltage
- Fast charge/discharge
- High power density
- up to 1 000 000 cycles


ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-40 ~ +65
Rated Voltage (V)	3,0
Surge Voltage (V)	3,15
Capacitance Range (F)	650 ~ 3400
Capacitance Tolerance (25°C)	+20/-0%



The usage at lower temperatures than indicated may be possible. Please contact the Jianghai Europe sales office for approval.

Leakage Current	After 72 hours at 25°C application of rated voltage, leakage current is not more than specified in table.
-----------------	---

Self Discharge Voltage	After 72 hours storage at 25°C, 25~85% RH, and initial charging at U_R , the remaining voltage shall be $\geq 2,3V$
------------------------	---

Temperature Characteristics	The specification shall be met at upper category temperature of 65°C	Capacitance Change	±10% of specified value
		ESR Change	less than specified value
	The specification shall be met at lower category temperature of -40°C	Capacitance Change	±20% of specified value
		ESR Change	less than 200% of specified value
Load Life	The specification shall be met after rated voltage applied at 65°C for 1 500h	Capacitance Change	±20% of specified value
		ESR Change	less than 200% of specified value
Cycle Life	The specification shall be met after 1 000 000 cycles at 25°C; 1 cycle=charge-discharge from U_R to $\frac{1}{2}U_R$	Capacitance Change	±20% of specified value
		ESR Change	less than 200% of specified value

ENVIRONMENTAL

The products are RoHS, WEEE and REACH compliant. The detailed version please see separate "Environmental Certificates" document or www.jianghai-europe.com

GB Terminal

SPECIFICATIONS

U _R	C _R	ESR _{DC, max}	I _{leak}	I _R *	I _{MAX}	I _{MAX}	I _S	Size	Order Code
Rated Voltage (Surge Voltage) Code	Rated Capacitance	Equivalent Series Resistance 25°C	Leakage Current 25°C (72h)	Rated Current	Max. Continuous Current ΔT15°C	Max. Continuous Current ΔT40°C	Surge Current <1sec		Details: Page 56
(V)	(F)	(mΩ)	(μA)	(A)	(A)	(A)	(A)	mm DxL	
3 (3,15) 3R0	650	0,57	3 000	21,7	54	88	711,42	61 x 51,5	SCCDEG3R0657RGBA610052EE3
	1 200	0,33	5 500	40,0	70	110	1 289,40	61 x 74	SCCDEG3R0128RGB610074EE3
	1 500	0,28	7 000	50,0	84	140	1 584,51	61 x 85	SCCDEG3R0158RGB610085EE3
	2 000	0,27	8 000	66,7	110	170	1 948,05	61 x 102	SCCDEG3R0208RGB610102EE3
	3 000	0,23	7 000	100,0	140	210	2 662,72	61 x 138	SCCDEG3R0308RGB610138EE3
	3 400	0,2	8 000	113,3	140	225	3 035,71	61 x 138	SCCDEG3R0348RGB610138EE3

* Rated current I_R = 40°I_A = 40°C_R*U_R/3600 (IEC 62391-1)

ENERGY STORAGE

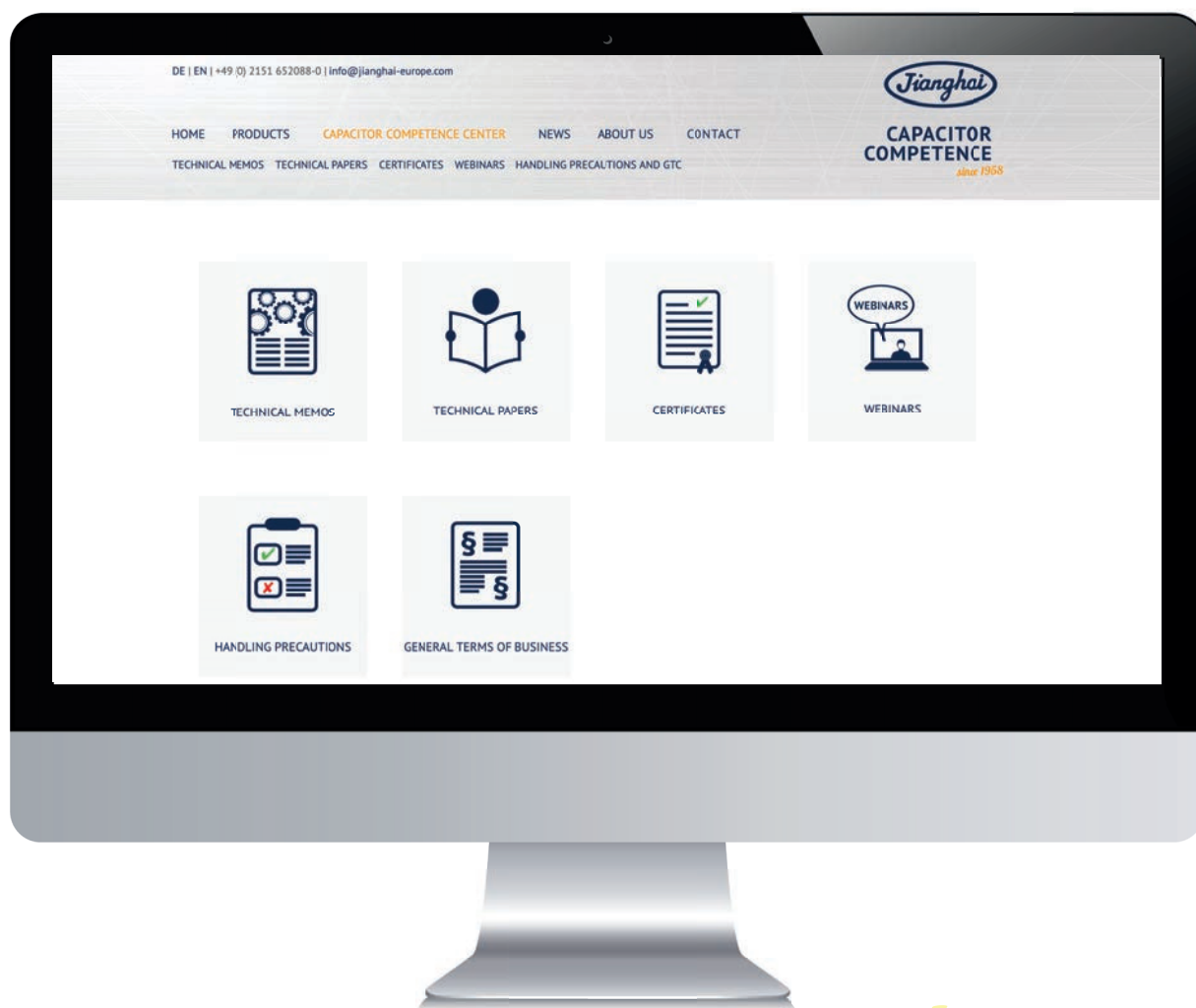
U _R	C _R	E	Weight	Specific Energy Density	Power Density (IPM)	Order Code
Rated Voltage (Surge Voltage) Code	Rated Capacitance	Stored Energy				Details: Page 56
(V)	(F)	(Wh)	(g)	(Wh/kg)	(kW/kg)	
3 (3,15) 3R0	650	0,813	180	4,51	21,93	SCCDEG3R0657RGBA610052EE3
	1 200	1,500	260	5,77	26,22	SCCDEG3R0128RGB610074EE3
	1 500	1,875	300	6,25	26,79	SCCDEG3R0158RGB610085EE3
	2 000	2,500	370	6,76	22,52	SCCDEG3R0208RGB610102EE3
	3 000	3,750	505	7,43	19,37	SCCDEG3R0308RGB610138EE3
	3 400	4,250	510	8,33	22,06	SCCDEG3R0348RGB610138EE3

GA Terminal on request.

GOOD TO KNOW:

Next to the possibility to subscribe to our newsletter, our website offers a lot of interesting technical information for you.

Just have a look!



<https://jianghai-europe.com>

RADIAL TYPE

LiC: Order Code RADIAL **64**

LiC: Technical Specifications RADIAL **65**

SERIES	CODE	TYPE	TEMPERATURE RANGE	CYCLES	INFO	
HBR	BR	RADIAL	-15 ~ +70°C	up to 500 000	Standard	66
HBRL	BL	RADIAL	-25 ~ +70°C	up to 250 000	Wider Temperature Range	68
HBE	BE	RADIAL	-25 ~ +70°C	up to 250 000	Highest Capacitance	70

AXIAL/WELDED COLUMN TYPE

SERIES	CODE	TYPE	TEMPERATURE RANGE	CYCLES	INFO	
HGA	GA	AXIAL	-25 ~ +65°C	50 000	High Power Density	72

POUCH TYPE

LiC: Order Code POUCH **74**

LiC: Technical Specifications POUCH **75**

SERIES	CODE	TYPE	TEMPERATURE RANGE	CYCLES	INFO	
HAA	AA	POUCH	-25 ~ +55°C	50 000	Standard	76
HAE	AE	POUCH	-25 ~ +55°C	50 000	Highest Capacitance	78
HAH	AH	POUCH	0 ~ +65°C	50 000	Higher Temperature	80



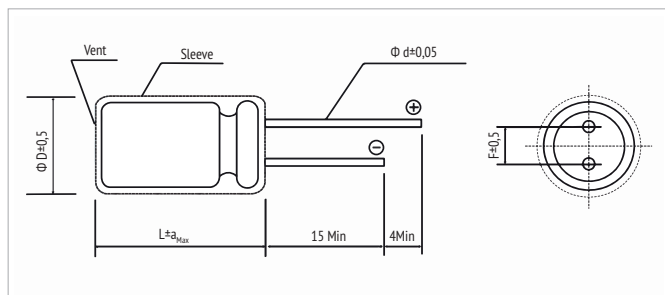
SC	M	D	BE	3R8	504	Q	LL	35	1860	PET	E3	JExxxxx
Technology	Design Type	Energy-Capacitor Type	Series Code	Rated Voltage Code	Capacitance Code (in F)	Capacitance Tolerance Code	Lead Form Code	Pitch	Dimension øD x h	Material Code Sleeve	for internal use	for Specials only
SC = Energy-Capacitor	Single Cell C	LI-C H	HBE BE HBR BR HBRL BL	3,8 3R8	0,5 504 1,0 105 1,5 155 3,0 305 3,3 335 5,0 505 8,0 805 10 106 22 226 25 256 30 306 40 406 50 506 55 556 70 706 85 856 100 107 110 117 120 127 200 207 220 227 300 307 350 357 400 407 450 457 850 857 1000 108 1400 148	+30% / -10% Q +20% / -20% M	Long Leads LL other style on request	2,0mm 20 2,5mm 25 3,5mm 35 5,0mm 50 7,5mm 75	5x12 0512 6,3x12 0612 8x14 0814 8x20 0820 10x16 1016 10x20 1020 10x25 1025 10x30 1030 12,5x25 1225 16x20 1620 16x25 1625 18x40 1840 18x50 1850 18x60 1860	PET E PVC V	E3	





DIMENSIONS FOR LOOSE, LONG-LEAD TYPE (BULK)

· ORDER CODE: LL



ΦD	5	6,3	8	10	12,5	16	18
F	2,0	2,5	3,5	5,0	7,5		
Φd	0,5		0,6	0,8			
a_{Max}	2,0						

in mm

OTHER LEAD TYPES ON REQUEST



- Standard
- up to 500 000 cycles
- high energy density
- low leakage current
- low self discharge

HB BR
500 000 cycles
-15°C ~ 70°C

wider temperature range

HBRL BL
250 000 cycles
-25°C ~ 70°C

higher
capacitance

HBE BE
250 000 cycles
-25°C ~ 70°C

ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-15 ~ +70 (85°C at 3,5V)
Voltage Range (V)	3,8 ~ 2,5
Min. allowed Operating Voltage (V)	2,2
Surge Voltage (V)	4,35
Capacitance Range (F)	1,5 ~ 550
Capacitance Tolerance (25°C)	±20%



The usage at lower temperatures than indicated may be possible. Please contact the Jianghai Europe sales office for approval.

Leakage Current	After 72 hours at 25°C application of rated voltage, leakage current is not more than specified in table.		
Self Discharge Current	After initial charging at U_R and 3 months of storage at 25°C, 25~85% RH, leakage current is not more than specified in table.		
Self Discharge Voltage	After 72 hours storage at 25°C, 25~85% RH, and initial charging at U_R , the remaining voltage shall be $\geq 3,7$ V.		
Temperature Characteristics	The specification shall be met at upper category temperature of 70°C	Capacitance Change	±10% of specified value
		ESR Change	less than specified value
	The specification shall be met at lower category temperature of -15°C	Capacitance Change	±50% of specified value
		ESR Change	less than 1 000% of specified value
Load Life	The specification shall be met after rated voltage applied at 70°C for 1 000h	Capacitance Change	±30% of specified value
		ESR Change	less than 200% of specified value
Cycle Life	The specification shall be met after 500 000 cycles at 25°C; 1 cycle=charge-discharge from 3,8V to 2,5V	Capacitance Change	±30% of specified value
		ESR Change	less than 200% of specified value

ENVIRONMENTAL

The products are RoHS, WEEE and REACH compliant. The detailed version please see separate "Environmental Certificates" document or www.jianghai-europe.com

SAFETY NOTE

Never discharge below 2,5V or short-circuit. See instructions for soldering at page 8.




SPECIFICATIONS

U _R Rated Voltage (Surge Voltage) Code (V)	C _R Rated Capacitance (F)	ESR _{DC,max} Equivalent Series Resistance 25°C (mΩ)	ESR _{AC,max} Equivalent Series Resistance 25°C 1kHz (mΩ)	I _{leak} Leakage Current 25°C (72h) (μA)	I _{SD} Self Discharge Current (3months) (μA)	I _R Rated Current (A)	I _{MAX} Max. Continuous Current ΔT15°C (A)	I _S Surge Current <3sec (A)	Size mm DxL	Order Code Details: Page 64
3,8 (4,35) 3R8	1,5	15 000	6 000	1,3	0,1	0,008	0,05	0,05	5 x 12	SCCHBR3R8155MLL200512EE3
	5	6 000	2 000	2,0	0,3	0,025	0,15	0,15	6,3 x 12	SCCHBR3R8505MLL250612EE3
	10	1 800	500	2,0	0,65	0,05	0,3	0,5	8 x 14	SCCHBR3R8106MLL350814EE3
	25	1 200	350	2,5	0,85	0,125	0,6	0,8	8 x 20	SCCHBR3R8256MLL350820EE3
	30	900	250	3,0	1,0	0,15	0,7	0,9	8 x 25	SCCHBR3R8306MLL350825EE3
	30	900	250	3,0	1,0	0,15	0,7	1,0	10 x 16	SCCHBR3R8306MLL501026EE3
	50	700	200	4,5	1,5	0,25	1,3	1,8	10 x 20	SCCHBR3R8506MLL501020EE3
	70	480	120	5,0	2,0	0,35	1,7	3,0	10 x 25	SCCHBR3R8706MLL501025EE3
	110	450	100	6,5	2,8	0,55	2,0	4,0	10 x 30	SCCHBR3R8117MLL501030EE3
	120	400	90	7,0	3,0	0,6	2,1	5,0	12,5 x 25	SCCHBR3R8127MLL501225EE3
	220	240	60	12	5,0	1,1	3,5	8,0	16 x 25	SCCHBR3R8227MLL751625EE3
	450	120	40	30	12,5	1,9	4,3	15	18 x 40	SCCHBR3R8457MLL751840EE3
	550	120	40	35	15	2,75	4,5	20	18 x 40	SCCHBR3R8557MLL751840EE3

ENERGY STORAGE

U _R Rated Voltage (Surge Voltage) Code (V)	C _R Rated Capacitance (F)	E Stored Energy (Wh)	Specific Energy Density (Wh/kg)	Specific Power Density (kW/kg)	Weight (g)	Order Code Details: Page 64
3,8 (4,35) 3R8	1,5	0,002	3,41	0,48	0,5	SCCHBR3R8155MLL200512EE3
	5	0,006	7,11	0,75	0,8	SCCHBR3R8505MLL250612EE3
	10	0,011	8,13	1,43	1,4	SCCHBR3R8106MLL350814EE3
	25	0,028	15,80	1,67	1,8	SCCHBR3R8256MLL350820EE3
	30	0,034	15,51	1,82	2,2	SCCHBR3R8306MLL350825EE3
	30	0,034	13,65	1,60	2,5	SCCHBR3R8306MLL501026EE3
	50	0,057	17,77	1,61	3,2	SCCHBR3R8506MLL501020EE3
	70	0,080	20,95	1,98	3,8	SCCHBR3R8706MLL501025EE3
	110	0,125	25,03	1,60	5,0	SCCHBR3R8117MLL501030EE3
	120	0,137	25,28	1,67	5,4	SCCHBR3R8127MLL501225EE3
	220	0,250	26,62	1,60	9,4	SCCHBR3R8227MLL751625EE3
	450	0,512	24,38	1,43	21	SCCHBR3R8457MLL751840EE3
	550	0,626	29,79	1,43	21	SCCHBR3R8557MLL751840EE3



- Wider temperature range
- up to 250 000 cycles
- low temperature
- high power density
- low leakage current
- low self discharge

HBRL BR
500 000 cycles
-15°C ~ 70°C

wider temperature range

HBRL BL
250 000 cycles
-25°C ~ 70°C

higher
capacitance

HBE BE
250 000 cycles
-25°C ~ 70°C

ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-25 ~ +70
Voltage Range (V)	3,8 ~ 2,5
Min. allowed Operating Voltage (V)	2,2
Surge Voltage (V)	4,35
Capacitance Range (F)	1,5 ~ 550
Capacitance Tolerance (25°C)	±20%

The usage at lower temperatures than indicated may be possible. Please contact the Jianghai Europe sales office for approval.

Leakage Current	After 72 hours at 25°C application of rated voltage, leakage current is not more than specified in table.		
Self Discharge Current	After initial charging at U_R and 3 months of storage at 25°C, 25~85% RH, leakage current is not more than specified in table.		
Self Discharge Voltage	After 72 hours storage at 25°C, 25~85% RH, and initial charging at U_R , the remaining voltage shall be $\geq 3,7$ V.		
Temperature Characteristics	The specification shall be met at upper category temperature of 70°C	Capacitance Change	±10% of specified value
		ESR Change	less than specified value
	The specification shall be met at lower category temperature of -25°C	Capacitance Change	±50% of specified value
		ESR Change	less than 1 000% of specified value
Load Life	The specification shall be met after rated voltage applied at 70°C for 1 000h	Capacitance Change	±30% of specified value
		ESR Change	less than 200% of specified value
Cycle Life	The specification shall be met after 250 000 cycles at 25°C; 1 cycle=charge-discharge from 3,8V to 2,5V	Capacitance Change	±30% of specified value
		ESR Change	less than 200% of specified value

ENVIRONMENTAL

The products are RoHS, WEEE and REACH compliant. The detailed version please see separate "Environmental Certificates" document or www.jianghai-europe.com

SAFETY NOTE

Never discharge below 2,5V or short-circuit. See instructions for soldering at page 8.




SPECIFICATIONS

U _R Rated Voltage (Surge Voltage) Code (V)	C _R Rated Capacitance (F)	ESR _{DC,max} Equivalent Series Resistance 25°C (mΩ)	ESR _{AC,max} Equivalent Series Resistance 25°C 1kHz (mΩ)	I _{leak} Leakage Current 25°C (72h) (μA)	I _{SD} Self Discharge Current (3months) (μA)	I _R Rated Current (A)	I _{MAX} Max. Continuous Current ΔT15°C (A)	I _S Surge Current <3sec (A)	Size mm DxL	Order Code Details: Page 64
3,8 (4,35) 3R8	1,5	15 000	6 000	1,5	0,11	0,008	0,05	0,05	5 x 12	SCCHBL3R8155MLL200512EE3
	5	6 000	2 000	2,5	0,5	0,025	0,15	0,15	6,3 x 12	SCCHBL3R8505MLL250612EE3
	10	1 500	500	3,0	1,0	0,05	0,3	0,5	8 x 14	SCCHBL3R8106MLL350814EE3
	25	650	300	3,3	1,0	0,125	0,6	0,8	8 x 20	SCCHBL3R8256MLL350820EE3
	30	700	250	4,0	2,0	0,15	0,7	0,9	8 x 25	SCCHBL3R8306MLL350825EE3
	30	550	250	4,0	1,5	0,15	0,7	1,0	10 x 16	SCCHBL3R8306MLL501016EE3
	50	450	200	6,0	2	0,25	1,4	1,8	10 x 20	SCCHBL3R8506MLL501020EE3
	70	250	100	8,0	2,5	0,35	1,8	3,0	10 x 25	SCCHBL3R8706MLL501025EE3
	110	220	90	10	4,5	0,55	2,5	4,5	10 x 30	SCCHBL3R8117MLL501030EE3
	120	200	80	12	5,0	0,6	2,6	5,0	12,5 x 25	SCCHBL3R8127MLL501225EE3
	220	100	60	25	8,0	1,1	4,0	8,0	16 x 25	SCCHBL3R8227MLL751625EE3
	550	80	40	65	20	2,75	5,1	20	18 x 40	SCCHBL3R8557MLL751840EE3

ENERGY STORAGE

U _R Rated Voltage (Surge Voltage) Code (V)	C _R Rated Capaci- tance (F)	E Stored Energy (Wh)	Specific Energy Density (Wh/kg)	Specific Power Density (kW/kg)	Weight (g)	Order Code Details: Page 64
3,8 (4,35) 3R8	1,5	0,002	3,41	0,48	0,5	SCCHBL3R8155MLL200512EE3
	5	0,006	7,11	0,75	0,8	SCCHBL3R8505MLL250612EE3
	10	0,011	8,13	1,72	1,4	SCCHBL3R8106MLL350814EE3
	25	0,028	15,80	3,09	1,8	SCCHBL3R8256MLL350820EE3
	30	0,034	15,51	2,34	2,2	SCCHBL3R8306MLL350825EE3
	30	0,034	13,65	2,63	2,5	SCCHBL3R8306MLL501016EE3
	50	0,057	17,77	2,51	3,2	SCCHBL3R8506MLL501020EE3
	70	0,080	20,95	3,80	3,8	SCCHBL3R8706MLL501025EE3
	110	0,125	25,03	3,28	5,0	SCCHBL3R8117MLL501030EE3
	120	0,137	25,28	3,34	5,4	SCCHBL3R8127MLL501225EE3
	220	0,250	26,62	3,84	9,4	SCCHBL3R8227MLL751625EE3
	550	0,626	29,79	2,15	21	SCCHBL3R8557MLL751840EE3

- Highest capacitance
- up to 250 000 cycles
- low temperature
- high power density
- low leakage current
- low self discharge

HBR BR
500 000 cycles
-15°C ~ 70°C

wider temperature range

HBRL BL
250 000 cycles
-25°C ~ 70°C

higher
capacitance

HBE BE
250 000 cycles
-25°C ~ 70°C

ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-25 ~ +70
Voltage Range (V)	3,8 ~ 2,5
Min. allowed Operating Voltage (V)	2,2
Surge Voltage (V)	4,35
Capacitance Range (F)	3 ~ 1 400
Capacitance Tolerance (25°C)	±20%

The usage at lower temperatures than indicated may be possible. Please contact the Jianghai Europe sales office for approval.

Leakage Current	After 72 hours at 25°C application of rated voltage, leakage current is not more than specified in table.		
Self Discharge Current	After initial charging at U_R and 3 months of storage at 25°C, 25~85% RH, leakage current is not more than specified in table.		
Self Discharge Voltage	After 72 hours storage at 25°C, 25~85% RH, and initial charging at U_R , the remaining voltage shall be $\geq 3,7$ V.		
Temperature Characteristics	The specification shall be met at upper category temperature of 70°C	Capacitance Change	±10% of specified value
		ESR Change	less than specified value
	The specification shall be met at lower category temperature of -25°C	Capacitance Change	±50% of specified value
		ESR Change	less than 1 000% of specified value
Load Life	The specification shall be met after rated voltage applied at 70°C for 1 000h	Capacitance Change	±30% of specified value
		ESR Change	less than 200% of specified value
Cycle Life	The specification shall be met after 250 000 cycles at 25°C; 1 cycle=charge-discharge from 3,8V to 2,5V	Capacitance Change	±30% of specified value
		ESR Change	less than 200% of specified value

ENVIRONMENTAL

The products are RoHS, WEEE and REACH compliant. The detailed version please see separate "Environmental Certificates" document or www.jianghai-europe.com

SAFETY NOTE

Never discharge below 2,5V or short-circuit. See instructions for soldering at page 8.



SPECIFICATIONS

U _R Rated Voltage (Surge Voltage) Code (V)	C _R Rated Capacitance (F)	ESR _{DC,max} Equivalent Series Resistance 25°C (mΩ)	ESR _{AC,max} Equivalent Series Resistance 25°C 1kHz (mΩ)	I _{leak} Leakage Current 25°C (72h) (μA)	I _{SD} Self Discharge Current (3months) (μA)	I _R Rated Current (A)	I _{MAX} Max. Continuous Current ΔT15°C (A)	I _S Surge Current <3sec (A)	Size mm DxL	Order Code Details: Page 64
3,8 (4,35) 3R8	3	4 000	9 000	1,8	0,5	0,015	0,14	0,1	5 x 12	SCCHBE3R8305MLL200512EE3
	8	2 600	1 200	2,0	1,0	0,04	0,5	0,25	6,3 x 12	SCCHBE3R8805MLL250612EE3
	22	1 000	450	3,5	2,2	0,11	1	0,7	6,3 x 22	SCCHBE3R8226MLL250622EE3
	25	900	400	2,5	2,4	0,125	1,1	0,8	8 x 14	SCCHBE3R8256MLL350814EE3
	40	550	250	3,2	3,8	0,2	1,4	1,2	8 x 20	SCCHBE3R8406MLL350820EE3
	55	450	200	5,0	3,5	0,275	1,7	1,8	8 x 25	SCCHBE3R8556MLL350825EE3
	55	450	200	5,0	2,5	0,275	1,8	1,8	10 x 16	SCCHBE3R8556MLL501016EE3
	85	250	120	8,0	3,5	0,425	2,1	3,5	10 x 20	SCCHBE3R8856MLL501020EE3
	110	220	90	9,0	5,5	0,55	2,3	4,0	10 x 25	SCCHBE3R8117MLL501025EE3
	150	140	70	15	7,5	0,75	2,3	6,0	10 x 30	SCCHBE3R8157MLL501030EE3
	200	120	60	22	9,5	1,0	2,9	7,0	10 x 40	SCCHBE3R8207MLL501040EE3
	200	135	65	18	8,5	1,0	3,0	6,0	12,5 x 25	SCCHBE3R8207MLL501225EE3
	300	100	50	30	13	1,5	3,6	10	12,5 x 35	SCCHBE3R8307MLL501235EE3
	350	90	45	35	17	1,75	3,9	11	12,5 x 40	SCCHBE3R8357MLL501240EE3
	400	80	45	70	20	2,0	4,1	12	12,5 x 45	SCCHBE3R8407MLL501245EE3
	450	60	40	70	22	2,25	4,3	15	16 x 30	SCCHBE3R8457MLL751630EE3
	850	70	35	70	32	4,25	4,8	28	18 x 40	SCCHBE3R8857MLL751840EE3
	1 000	65	30	100	36	5,0	5,7	30	18 x 50	SCCHBE3R8108MLL751850EE3
	1 400	50	28	120	68	7,0	8,0	31	18 x 60	SCCHBE3R8148MLL751860EE3

ENERGY STORAGE

U _R Rated Voltage (Surge Voltage) Code (V)	C _R Rated Capacitance (F)	E Stored Energy (Wh)	Specific Energy Density (Wh/kg)	Specific Power Density (kW/kg)	Weight (g)	Order Code Details: Page 64
3,8 (4,35) 3R8	3	0,003	6,83	1,81	0,5	SCCHBE3R8305MLL200512EE3
	8	0,009	11,38	1,74	0,8	SCCHBE3R8805MLL250612EE3
	22	0,025	19,25	2,78	1,3	SCCHBE3R8226MLL250622EE3
	25	0,028	20,31	2,87	1,4	SCCHBE3R8256MLL350814EE3
	40	0,046	22,75	3,28	2,0	SCCHBE3R8406MLL350820EE3
	55	0,063	28,44	3,65	2,2	SCCHBE3R8556MLL350825EE3
	55	0,063	25,03	3,21	2,5	SCCHBE3R8556MLL501016EE3
	85	0,097	30,21	4,51	3,2	SCCHBE3R8856MLL501020EE3
	110	0,125	32,93	4,32	3,8	SCCHBE3R8117MLL501025EE3
	150	0,171	34,13	5,16	5,0	SCCHBE3R8157MLL501030EE3
	200	0,228	35,55	4,70	6,4	SCCHBE3R8207MLL501040EE3
	200	0,228	37,92	4,46	6,0	SCCHBE3R8207MLL501225EE3
	300	0,341	37,92	4,01	9,0	SCCHBE3R8307MLL501235EE3
	350	0,398	40,63	4,09	9,8	SCCHBE3R8357MLL501240EE3
	400	0,455	41,36	4,10	11	SCCHBE3R8407MLL501245EE3
	450	0,512	40,95	4,81	12,5	SCCHBE3R8457MLL751630EE3
	850	0,967	46,04	2,46	21	SCCHBE3R8857MLL751840EE3
	1 000	1,138	42,13	2,06	27	SCCHBE3R8108MLL751850EE3
	1 400	1,593	53,08	2,41	30	SCCHBE3R8148MLL751860EE3



- High power density
- High energy density
- Welded column terminal
- New improved cell design



ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-25 ~ +65
Voltage Range (V)	2,5 ~ 4,0
Min. allowed Operating Voltage (V)	2,0
Surge Voltage (V)	4,35
Capacitance Range (F)	3 000 ~ 25 000
Capacitance Tolerance (25°C)	±20%



The usage at lower temperatures than indicated may be possible. Please contact the Jianghai Europe sales office for approval.

Leakage Current	After 72 hours at 25°C application of rated voltage, leakage current is not more than specified in table.
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Self Discharge Voltage	After 72 hours storage at 25°C, 25~85% RH, and initial charging at U_R , the remaining voltage shall be $\geq 3,92V$
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Temperature Characteristics	The specification shall be met at upper category temperature of 65°C	Capacitance Change	±10% of specified value
		ESR Change	less than specified value
	The specification shall be met at lower category temperature of -40°C	Capacitance Change	±50% of specified value
		ESR Change	less than 400% of specified value

Load Life	The specification shall be met after rated voltage applied at 65°C for 1 000h	Capacitance Change	±20% of specified value
		ESR Change	less than 200% of specified value

Cycle Life	The specification shall be met after 50 000 cycles at 25°C; 1 cycle=charge-discharge from 4,0V to 2,5V	Capacitance Change	±20% of specified value
		ESR Change	less than 200% of specified value

2. Cycle Life	The specification shall be met after 500 000 cycles at 25°C; 1 cycle=charge-discharge from 3,5V to 2,5V	Capacitance Change	±20% of specified value
		ESR Change	less than 200% of specified value

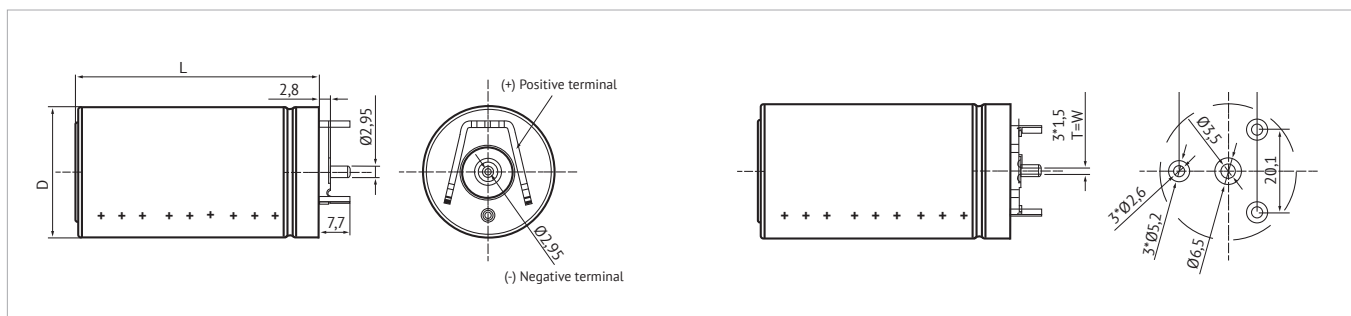
ENVIRONMENTAL

The products are RoHS, WEEE and REACH compliant. The detailed version please see separate "Environmental Certificates" document or www.jianghai-europe.com

! SAFETY NOTE

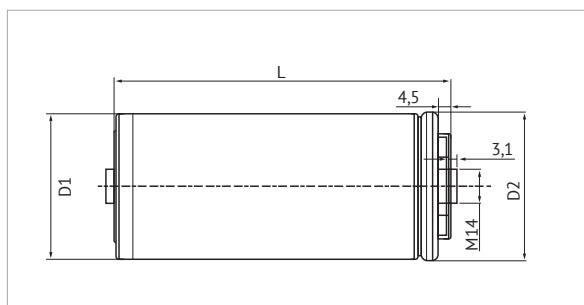
Never discharge below 2,5V or short-circuit. Never discharge below 2,5V or short-circuit. See instructions for soldering at page 8.

DIMENSIONS ONLY FOR HGA GA (TYPE A)



Diameter	$D = 33\text{mm} \pm 1\text{mm}$
Length	$L = 62\text{mm} \pm 1\text{mm}$

DIMENSIONS ONLY FOR HGA GA (TYPE B)



Diameter	$D1 = 60 \pm 1\text{mm}$ $D2 = 61 \pm 1\text{mm}$
Length	$L = 138 \pm 2\text{mm}$

OTHER TERMINAL TYPES ON REQUEST

SPECIFICATIONS

U_R	C_R	$ESR_{DC, \max}$	$ESR_{AC, \max}$	I_R	I_{MAX}	I_S	Size	Type	Order Code
Rated Voltage (Surge Voltage) Code	Rated Capacitance	Equivalent Series Resistance 25°C	Equivalent Series Resistance 25°C 1kHz	Rated Current	Max. Continuous Current $\Delta T 15^\circ\text{C}$	Surge Current <3sec	mm DxL		
(V)	(F)	(mΩ)	(mΩ)	(A)	(A)	(A)			
4.0 (4,35) 4R0	3 000	3,0	2,5	13	15	145	33 x 62	A	SCCHGA4R0308ME3
	11 000	0,47	0,46	55	65	250	61 x 74	B	SCCHGA4R0119ME3
	25 000	0,46	0,45	100	105	400	61 x 138	B	SCCHGA4R0259ME3

ENERGY STORAGE

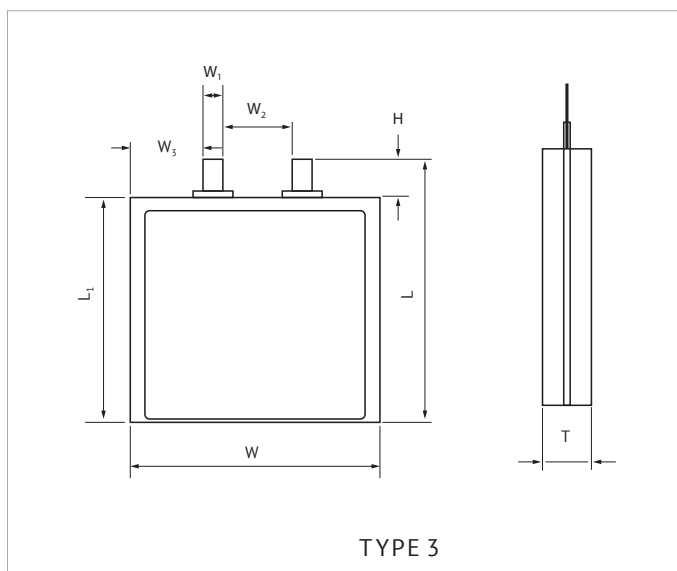
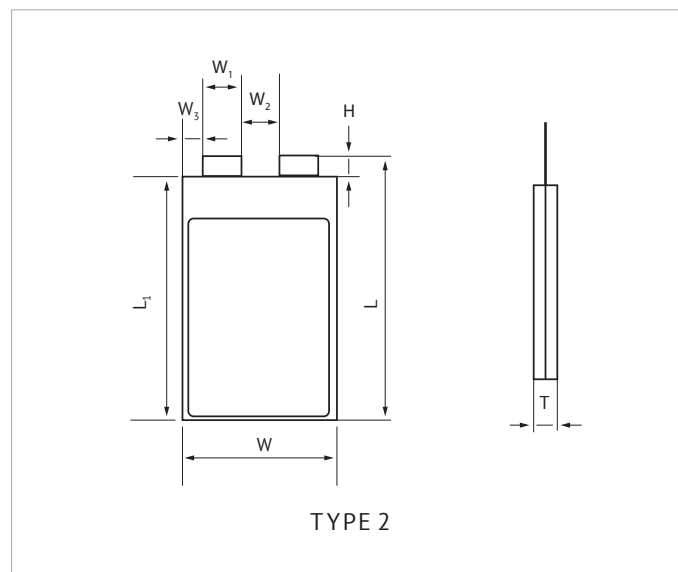
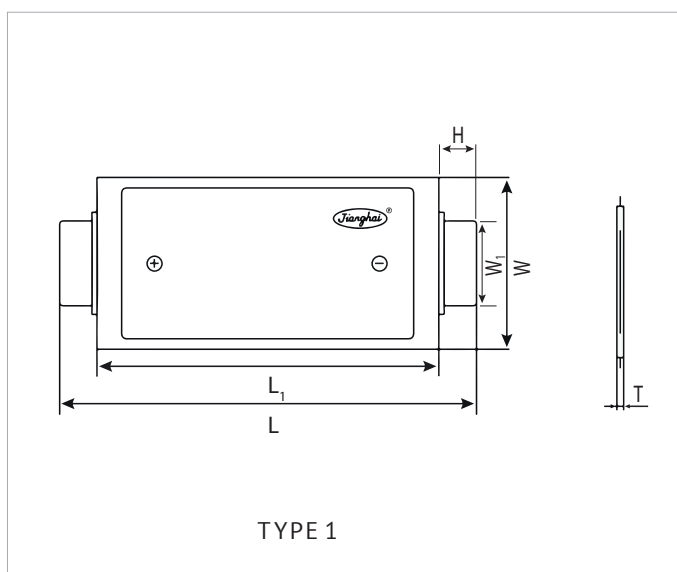
U_R	C_R	E				Order Code
Rated Voltage (Surge Voltage) Code	Rated Capacitance	Stored Energy	Energy Density	Power Density	Weight	
(V)	(F)	(Wh)	(Wh/kg)	(kW/kg)	(g)	
4.0 (4,35) 4R0	3 000	6,5	39,06	12,82	104	SCCHGA4R0308ME3
	11 000	15,5	40,26	22,11	385	SCCHGA4R0119ME3
	25 000	35	47,30	11,75	740	SCCHGA4R0259ME3

OTHERS ON REQUEST



SC	C		H		AA		4R0		108		M		S		15		BB055		E3	JExxxxx
Technology	Design Code		Energy-Capacitor Type		Series Code		Rated Voltage Code (V)		Capacitance Code (in F)		Capacitance Tolerance Code (%)		Terminal Type		Terminal Width W _t		Dimension L x W x T		for internal use	for Specials only
SC = Energy-Capacitor	Single Cell	C	Li-C	H	HAA	AA	4,0	4R0	550	557	+20% / -20%	M	Contacts two sides (Type 1)	D	4mm	04	57x60x4,0	AA040	E3	
					HAE	AE			930	937			Contacts one side (Type 2)	S	15mm	15	57x60x4,8	AA048		
	HAH	AH	1000	108	Contacts one side (Type 3)	M	60mm	60	100x60x9,2	BA092										
			2000	208			100x71x3,0	BB030												
			3000	308			100x71x5,5	BB055												
			3400	348			100x71x9,0	BB090												
			5000	508			300x123x3,5	DC035												
			6000	608			300x123x5,5	DC055												
			10000	109			300x123x8,0	DC080												
			12000	129			300x123x5,2	DC052												
			16000	169			300x123x8,2	DC082												
			21000	219			300x123x8,3	DC083												
			22000	229			300x123x10,8	DC108												
		29000	299																	

DIMENSIONS

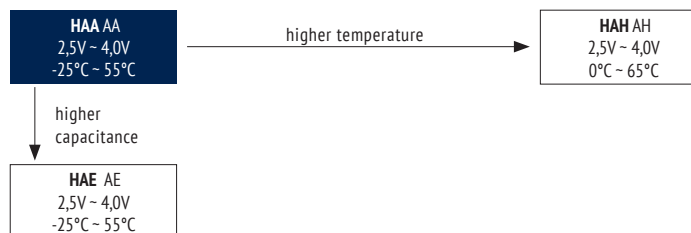


Type	L ± 5	L ₁ ± 3	W ± 3	W ₁ ± 1	W ₂ ± 1	W ₃ ± 0,5	H ± 1	T ± 0,5
Type 1	300	245	123	60	-	-	25	3,5
								5,2
								5,5
								8,0
								8,2
								8,3
								10,8
Type 2	100	95	71	15	15	13	5	3,0
			71			13		5,5
			60			7,5		9,0
			60			7,5		9,2
Type 3	57	45	60	4	14	19	12	4,0
								4,8

in mm



- Standard
- wide temperature range
- very high energy density
- low ESR

**ITEM CHARACTERISTICS**

Operating Temperature Range (°C)	-25 ~ +55
Voltage Range (V)	4,0 ~ 2,5
Surge Voltage (V)	4,35
Capacitance Range (F)	550 ~ 16 000
Capacitance Tolerance (25°C)	±20%



The usage at lower temperatures than indicated may be possible. Please contact the Jianghai Europe sales office for approval.

Leakage Current After 72 hours at 25°C application of rated voltage, leakage current is not more than specified in table.

Self Discharge Voltage After 72 hours storage at 25°C, 25~85% RH, and initial charging at U_R , the remaining voltage shall be $\geq 3,92$ V.

Temperature Characteristics	The specification shall be met at upper category temperature of 55°C	Capacitance Change	±10% of specified value
		ESR Change	less than specified value
	The specification shall be met at lower category temperature of -25°C	Capacitance Change	±50% of specified value
		ESR Change	less than 400% of specified value
Load Life	The specification shall be met after rated voltage applied at 55°C for 1 000h	Capacitance Change	±20% of specified value
		ESR Change	less than 200% of specified value
Cycle Life	The specification shall be met after 50 000 cycles at 25°C; 1 cycle=charge-discharge from 4,0V to 2,5V	Capacitance Change	±20% of specified value
		ESR Change	less than 200% of specified value

ENVIRONMENTAL

The products are RoHS, WEEE and REACH compliant. The detailed version please see separate "Environmental Certificates" document or www.jianghai-europe.com

SAFETY NOTE

Never discharge below 2,5V or short-circuit. See Handling Precautions page 6.



SPECIFICATIONS

U _R	U _{min}	C _R	ESR _{DC, max}	ESR _{AC, max}	I _{leak}	I _{SD}	I _R *	I _{MAX}	I _S	Size			Order Code
Rated Voltage (Surge Voltage) Code	Min. Operating Voltage	Rated Capacitance	Equivalent Series Resistance 25°C	Equivalent Series Resistance 25°C (1kHz)	Leakage Current 25°C (72h)	Self Discharge Current (3months)	Rated Current	Max. Continuous Current ΔT15°C	Surge Current <5sec				Details: Page 74
(V)	(V)	(F)	(mΩ)	(mΩ)	(μA)	(μA)	(A)	(A)	(A)	(mm)			
										W	L	H	
4 (4,35) 4R0	2,5	550	80,0	40,0	40	4,4	1	6,5	3	57	60	4,0	SCCHAA4R0557MM04AA040E3
		1 000	20,0	9,0	235	26	5	12,5	20	100	71	3,0	SCCHAA4R0108MS15BB030E3
		2 000	10,0	6,0	295	51	10	15	30	100	71	5,5	SCCHAA4R0208MS15BB055E3
		3 200	6,5	3,2	335	82	16	20	40	100	60	9,0	SCCHAA4R0328MS15BA090E3
		6 000	4,5	3,0	480	154	30	40	100	300	123	3,5	SCCHAA4R0608MD60DC035E3
		10 000	1,8	1,2	530	257	50	50	150	300	123	5,2	SCCHAA4R0109MD60DC055E3
		16 000	1,5	1,2	580	412	50	65	200	300	123	8,0	SCCHAA4R0169MD60DC080E3

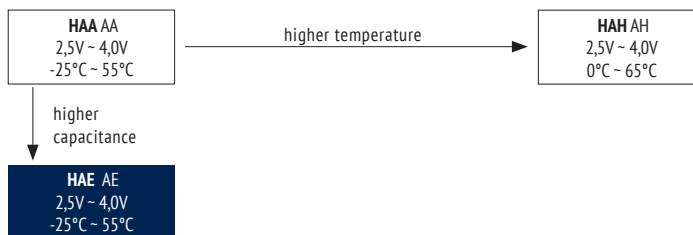
* Rated current I_R = 4*I_A = 4*C_R*U_R/3600 (IEC 62391-1)

ENERGY STORAGE

U _R	U _{min}	C _R	E				Type	Order Code
Rated Voltage (Surge Voltage) Code	Min. Operating Voltage	Rated Capacitance	Stored Energy	Weight	Specific Energy Density	Power Density		Details: Page 74
(V)	(V)	(F)	(Wh)	(g)	(Wh/kg)	(kW/kg)		
4 (4,35) 4R0	2,5	550	0,75	18	41,38	2,78	3	SCCHAA4R0557MM04AA040E3
		1 000	1,36	27	50,37	7,41	2	SCCHAA4R0108MS15BB030E3
		2 000	2,92	50	58,40	8,00	2	SCCHAA4R0208MS15BB055E3
		3 200	4,65	78	59,62	7,89	2	SCCHAA4R0328MS15BA090E3
		6 000	8,10	165	49,09	5,39	1	SCCHAA4R0608MD60DC035E3
		10 000	13,20	240	55,00	9,26	1	SCCHAA4R0109MD60DC055E3
		16 000	22,00	355	61,97	7,51	1	SCCHAA4R0169MD60DC080E3



- Highest capacitance
- wide temperature range
- very high energy density
- low ESR

**ITEM CHARACTERISTICS**

Operating Temperature Range (°C)	-25 ~ +55
Voltage Range (V)	4,0 ~ 2,5
Surge Voltage (V)	4,35
Capacitance Range (F)	930 ~ 29 000
Capacitance Tolerance (25°C)	±20%



The usage at lower temperatures than indicated may be possible. Please contact the Jianghai Europe sales office for approval.

Leakage Current After 72 hours at 25°C application of rated voltage, leakage current is not more than specified in table.

Self Discharge Voltage After 72 hours storage at 25°C, 25~85% RH, and initial charging at U_R , the remaining voltage shall be $\geq 3,92$ V.

Temperature Characteristics	The specification shall be met at upper category temperature of 55°C	Capacitance Change	±10% of specified value
		ESR Change	less than specified value
	The specification shall be met at lower category temperature of -25°C	Capacitance Change	±50% of specified value
		ESR Change	less than 400% of specified value
Load Life	The specification shall be met after rated voltage applied at 55°C for 1 000h	Capacitance Change	±20% of specified value
		ESR Change	less than 200% of specified value
Cycle Life	The specification shall be met after 50 000 cycles at 25°C; 1 cycle=charge-discharge from 4,0V to 2,5V	Capacitance Change	±20% of specified value
		ESR Change	less than 200% of specified value

ENVIRONMENTAL

The products are RoHS, WEEE and REACH compliant. The detailed version please see separate "Environmental Certificates" document or www.jianghai-europe.com

SAFETY NOTE

Never discharge below 2,5V or short-circuit. See Handling Precautions page 6.



SPECIFICATIONS

U _R	U _{min}	C _R	C _{TP}	ESR _{DC, max}	ESR _{AC, max}	I _{leak}	I _{SD}	I _R *	I _{MAX}	I _S	Size			Order Code
Rated Voltage (Surge Voltage) Code	Min. Operating Voltage	Rated Capacitance QC/T-741	Rated Capacitance IEC	Equivalent Series Resistance 25°C	Equivalent Series Resistance 25°C (1kHz)	Leakage Current 25°C (72h)	Self Discharge Current (3months)	Rated Current	Max. Continuous Current ΔT15°C	Surge Current <5sec				Details: Page 74
(V)	(V)	(F)	(F)	(mΩ)	(mΩ)	(μA)	(μA)	(A)	(A)	(A)	(mm)			
											L	W	T	
4 (4,35) 4R0	2,5	800	930	35	20	80	10	2,0	6,3	10	57	60	4,8	SCCHAE4R0937MM04AA048E3
		3 000	4 000	6,5	3,5	430	57	8,0	15	40	100	60	9,2	SCCHAE4R0408MS15BA092E3
		10 000	12 000	2,5	1,5	525	152	25,0	55	200	300	123	5,2	SCCHAE4R0129MS15DC052E3
		15 000	21 000	1,5	1,2	780	317	37,5	60	250	300	123	8,2	SCCHAE4R0219MD60DC082E3
		17 000	22 000	1,2	1,2	800	460	42,5	65	280	300	123	8,3	SCCHAE4R0229MD60DC083E3
		20 000	29 000	1,1	1,0	850	465	50,0	70	300	300	123	10,8	SCCHAE4R0299MD60DC108E3

* Rated current I_R = 4*I_A = 4*C_R*U_R/3600 (IEC 62391-1)

ENERGY STORAGE

U _R	U _{min}	C _R					Type	Order Code
Rated Voltage (Surge Voltage) Code	Min. Operating Voltage	Rated Capacitance QC/T-741	Weight	Storage Energy	Specific Energy Density	Power Density		Details: Page 74
(V)	(V)	(F)	(g)	(Wh)	(Wh/kg)	(kW/kg)		
4 (4,35) 4R0	2,5	800	18	1,4	69,97	6,35	3	SCCHAE4R0937MM04AA048E3
		3 000	78	5,95	76,28	7,89	2	SCCHAE4R0408MS15BA092E3
		10 000	245	18,5	75,51	6,53	1	SCCHAE4R0129MS15DC052E3
		15 000	375	30	80,00	7,11	1	SCCHAE4R0219MD60DC082E3
		17 000	380	34	89,47	8,77	1	SCCHAE4R0229MD60DC083E3
		20 000	490	42	85,71	7,42	1	SCCHAE4R0299MD60DC108E3



- Higher temperature
- very high energy density
- low ESR

HAA AA
2,5V ~ 4,0V
-25°C ~ 55°C

higher temperature

HAH AH
2,5V ~ 4,0V
0°C ~ 65°C

higher
capacitance

HAE AE
2,5V ~ 4,0V
-25°C ~ 65°C

ITEM CHARACTERISTICS

Operating Temperature Range (°C)	0 ~ +65
Voltage Range (V)	4,0 ~ 2,5
Surge Voltage (V)	4,35
Capacitance Range (F)	1 000 ~ 16 000
Capacitance Tolerance (25°C)	±20%



The usage at lower temperatures than indicated may be possible. Please contact the Jianghai Europe sales office for approval.

Leakage Current

After 72 hours at 25°C application of rated voltage, leakage current is not more than specified in table.

Self Discharge Voltage

After 72 hours storage at 25°C, 25~85% RH, and initial charging at U_R , the remaining voltage shall be $\geq 3,92$ V.

Temperature Characteristics	The specification shall be met at upper category temperature of 55°C	Capacitance Change	±10% of initial value
		ESR Change	less than initial value
	The specification shall be met at lower category temperature of -25°C	Capacitance Change	±50% of initial value
		ESR Change	less than 400% of initial value
Load Life	The specification shall be met after rated voltage applied at 55°C for 1 000h	Capacitance Change	±20% of initial value
		ESR Change	less than 200% of initial value
Cycle Life	The specification shall be met after 50 000 cycles at 25°C; 1 cycle=charge-discharge from 4,0V to 2,5V	Capacitance Change	±20% of initial value
		ESR Change	less than 200% of initial value

ENVIRONMENTAL

The products are RoHS, WEEE and REACH compliant. The detailed version please see separate "Environmental Certificates" document or www.jianghai-europe.com

SAFETY NOTE

Never discharge below 2,5V or short-circuit. See Handling Precautions page 6.



SPECIFICATIONS

U _R	U _{min}	C _R	ESR _{DC, max}	ESR _{AC, max}	I _{leak}	I _{SD}	I _R [*]	I _{MAX}	I _S	Size			Order Code
Rated Voltage (Surge Voltage) Code	Min. Operating Voltage	Rated Capacitance	Equivalent Series Resistance 25°C	Equivalent Series Resistance 25°C (1kHz)	Leakage Current 25°C (72h)	Self Discharge Current (3months)	Rated Current	Max. Continuous Current ΔT15°C	Surge Current <5sec				Details: Page 74
(V)	(V)	(F)	(mΩ)	(mΩ)	(μA)	(μA)	(A)	(A)	(A)	(mm)			
										W	L	H	
4 (4,35) 4R0	2,5	1 000	25,0	11,5	235	26	5	12,5	20	100	71	3,0	SCCHAH4R0108MS15BB030E3
		2 000	11,5	6,5	295	51	10	15	30	100	71	5,5	SCCHAH4R0208MS15BB055E3
		3 200	7,0	4,0	335	82	16	20	40	100	60	9,0	SCCHAH4R0328MS15BA090E3
		6 000	4,5	3,5	480	154	30	40	100	300	123	3,5	SCCHAH4R0608MD60DC035E3
		10 000	2,2	1,5	530	257	50	50	150	300	123	5,2	SCCHAH4R0109MD60DC052E3
		16 000	1,8	1,4	580	412	50	65	200	300	123	8,0	SCCHAH4R0169MD60DC080E3

* Rated current $I_R = 4 \cdot I_A = 4 \cdot C_R \cdot U_R / 3600$ (IEC 62391-1)

ENERGY STORAGE

U_R	U_{min}	C_R	E				Type	Order Code
Rated Voltage (Surge Voltage) Code	Min. Operating Voltage	Rated Capacitance	Stored Energy	Weight	Specific Energy Density	Specific Power Density		Details: Page 74
(V)	(V)	(F)	(Wh)	(g)	(Wh/kg)	(kW/kg)		
4 (4,35) 4R0	2,5	1 000	1,36	27	50,37	5,93	2	SCCHAH4R0108MS15BB030E3
		2 000	2,92	50	58,40	6,96	2	SCCHAH4R0208MS15BB055E3
		3 200	4,65	78	59,62	7,33	2	SCCHAH4R0328MS15BA090E3
		6 000	8,1	165	49,09	5,39	1	SCCHAH4R0608MD60DC035E3
		10 000	13,2	240	55,00	7,58	1	SCCHAH4R0109MD60DC052E3
		16 000	22	355	61,97	6,26	1	SCCHAH4R0169MD60DC080E3



DIMENSIONS

CUSTOMER SPECIFIC ON REQUEST

ENERGY DENSITY & POWER DENSITY

EVERY MODUL IS DESIGNED ACCORDING TO CUSTOMERS REQUIREMENTS

ELECTRONICAL CELL MANAGEMENT SYSTEM (CMS)

JIANGHAI PROVIDES MODULES CONTAINING AN ELECTRONICAL CHARGE/DISCHARGE CONTROL UNIT INCLUDING BALANCING AND CELL MANAGEMENT SYSTEMS INSIDE

VOLTAGE & CAPACITY RANGE

CUSTOMER SPECIFIC ON REQUEST

NUMBERS OF CYCLES

UP TO 1 000 000 CHARGE-DISCHARGE CYCLES



ALL ADVANTAGES AT A GLANCE

HIGH ENERGY DENSITY

HIGH POWER DENSITY

WIDE VOLTAGE RANGE

MANY CHARGE/ DISCHARGE CYCLES

LOW LEAKAGE CURRENT

HIGH SAFETY! NO EXPLODING OR BURNING!

ASSISTANCE IN MAKING THE RIGHT CHOICE

Most of the modules are customized and tailored to a specific application. We need your requirements so that we can find and build the right energy storage for you. The questions below should help you to gather all the information together.

Which maximum voltage do you need and up to which voltage does your circuit work?

Voltage range:

How much power do you need and how long is this energy needed?

Capacitance or energy:

Time:

In what temperature range does the module have to work?

Temperature range:

Which lifespan and / or no. of cycles should the energy storage, provide energy?

Lifetime:

Number of cycles:

How much space is available?

Dimensions:

**Any questions?
Please contact:**

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