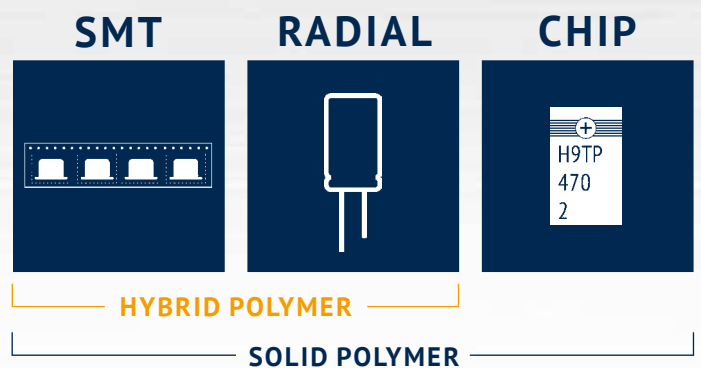




■ SOLID ■ HYBRID
**POLYMER
CAPACITORS**
2025/2026



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

Jianghai Europe Electronic Components GmbH
Uerdinger Str. 95 · 47799 Krefeld, Germany
T: +49 (21 51) 65 20 88-0 | F: +49 (21 51) 65 20 88-88
info@jianghai-europe.com | www.jianghai-europe.com

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SOLID POLYMER CAPACITORS: SMT 11

Solid Polymer: Order Code SMT	12
Solid Polymer: Technical Specifications SMT	13

SERIES	CODE	TYPE	TEMPERATURE	VOLTAGE	LIFETIME	INFO	
PC HVC	VC	SMT	105°C	2,5~25V	2 000h	Standard	14
PC HVF	VF	SMT	105°C	16~200V	3 000h	Full Voltage Range	16
PC HVG	VG	SMT	125°C	2,5~20V	1 000h	High Temperature	18
PC HVK	VK	SMT	125°C	16~80V	2 000h	Extended Voltage, 125°C	20
PC HVM	VM	SMT	105°C	2,5~16V	2 000h	Low ESR	22
PC HVS	SV	SMT	105°C	4~25V	5 000h	Long Life	24

SOLID POLYMER CAPACITORS: RADIAL 27

Solid Polymer: Order Code RADIAL	28
Solid Polymer: Technical Specifications RADIAL	29

SERIES	CODE	TYPE	TEMPERATURE	VOLTAGE	LIFETIME	INFO	
PC HCN	CN	RADIAL	105°C	2,5~35V	2 000h	Standard	30
PC HCS	CS	RADIAL	105°C	2,5~16V	5 000h	Longest Life	32
PC HEG	EG	RADIAL	105°C	16~63V	2 000h	Larger Case Sizes	34
PC HEL	EL	RADIAL	105°C	2,5~16V	2 000h	Ultra Low ESR	36
PC HEN	EN	RADIAL	105°C	2,5~16V	2 000h	Standard	38
PC HGN	GN	RADIAL	125°C	4~25V	1 000h	High Temperature	40
PC HPF	PF	RADIAL	105°C	16~200V	3 000h	Full Voltage	42
PC HPK	PK	RADIAL	125°C	16~80V	2 000h	Extended Voltage, 125°C	46



SOLID POLYMER CAPACITORS: STACKED CHIP (MLPC) 49

Solid Polymer: Order Code CHIP (MLPC – Multilayer Polymer Capacitor) 50

Solid Polymer: Technical Specifications CHIP (MLPC – Multilayer Polymer Capacitor) 50/51

SERIES	CODE	TYPE	TEMPERATURE	VOLTAGE	LIFETIME	INFO	
PC HPA	PA	CHIP	105°C	2,5~16V	2 000h	Standard	52
PC HPE	PE	CHIP	85°C	4~6,3V	2 000h	Standard	56
PC HPG	PG	CHIP	125°C	2~16V	1 000h	High Temperature	58
PC HPS	PS	CHIP	105°C	2~10V	2 000h	Low Profile	60

HYBRID POLYMER CAPACITORS: SMT 63

Hybrid Polymer: Order Code SMT 64

Hybrid Polymer: Technical Specifications SMT 65

SERIES	CODE	TYPE	TEMPERATURE	VOLTAGE	LIFETIME	INFO	
PH VA	VA	SMT	105°C	25~80V	5 000h	Standard	66
PH VB	VB	SMT	125°C	25~80V	4 000h	High Temperature	68
PH VD	VD	SMT	125°C	25~63V	4 000h	Low ESR	70
PH VE	VE	SMT	105°C	25~80V	10 000h	Low ESR	72
PH VF	VF	SMT	135°C	25~63V	4 000h	Low ESR +++PRELIMINARY +++	74

HYBRID POLYMER CAPACITORS: RADIAL 77

Hybrid Polymer: Order Code RADIAL 78

Hybrid Polymer: Technical Specifications RADIAL 79

SERIES	CODE	TYPE	TEMPERATURE	VOLTAGE	LIFETIME	INFO	
PH LA	LA	Radial	105°C	25~80V	5 000h	Standard	80
PH LB	LB	Radial	125°C	25~80V	4 000h	High Temperatures	82
PH LD	LD	Radial	125°C	25~63V	4 000h	Low ESR	84
PH LE	LE	Radial	105°C	25~80V	10 000h	Low ESR	86
PH LF	LF	Radial	135°C	25~63V	4 000h	Low ESR +++PRELIMINARY +++	88

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 capacitors. Misapplications which may cause failures include, but are not limited to: ripple current or peak current or voltage above specification, operating voltage above the voltage specified, temperature exposure outside 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 electrolytic 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 capacitors in any application, please read these Handling Precautions, familiarizing thoroughly with the information contained herein. Please check before using any of our 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 catalogue does not form part of any quotation or contract, 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 will not assume any liability beyond the replacement of defective components. This applies in particular to any consequential damage caused by 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 (statistic 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 support 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 catalogue supersedes all previous versions. Latest versions of datasheets can be found on our homepage: www.jianghai-europe.com.

POLARITY

Polymer capacitors are polar and shall never be used with incorrect polarity, as there is a possible danger of shorting or destruction.

RATED VOLTAGE U_R

The rated voltage is marked on the capacitor and defined in the datasheets as U_R . This voltage should never be exceeded and is the maximum peak voltage including any ripple voltages allowed to avoid a shortening of the lifetime or damage of the capacitor. When a ripple current is applied to the capacitor, the sum of the peak ripple voltage and bias DC voltage shall never exceed the rated voltage. It might be necessary to lower the maximum allowed bias DC voltage, when certain ripple currents are applied to the capacitor.

REVERSE VOLTAGE

Reverse voltages or voltages $<0V$ are not allowed.

OVER-VOLTAGE / SURGE VOLTAGE

Over-voltages higher than the rated voltage will destroy the capacitors and must be avoided. The sum of DC voltage and the ripple voltage peak must not exceed the rated voltage.

LOW VOLTAGE

If the rated voltage is low, take care that any negative ripple voltage peak does not become a reverse voltage. Ripple voltages shall never become larger than $0,1 \cdot U_R$.

RECOVERY VOLTAGE

Electric potential between the positive and negative terminal may exist as a result of dielectric absorption. Please take action that this load does not damage other devices or scare workers during the production process (sparks possible). If needed please discharge the capacitor through a $1k\Omega$ resistor.

TEMPERATURE RANGE

Use solid polymer and hybrid capacitors only within the specified operating temperature range.

OVER-CURRENT

Ripple currents above the specified rating must be avoided as they may damage the capacitor.

RIPPLE CURRENT/VOLTAGE

The combined value of DC voltage and peak AC voltage (due to

ripple current) shall not exceed the rated voltage and shall never be $<0V$. Use of solid polymer and hybrid electrolytic capacitors under ripple current with wide amplitudes is equivalent to rapid charge-discharge operation.

RAPID CHARGING/DISCHARGING

Rapid charging/discharging generates severe heat and gas may be emitted which may lead to explosion. Consult JIANGHAI about specially designed capacitors suitable for such kind of applications.

Example: Servo Drive Application

SERIAL CONNECTION

Serial connections shall be avoided to prevent possible overvoltage conditions.

PARALLEL CONNECTION

When parallel connections between polymer capacitors are planned, please take proper current balancing into account.

INRUSH CURRENT LIMITATION

Use a protection circuit when the inrush current exceeds 10A. Especially higher voltage capacitor might need an individual protection against high inrush currents.

SHORT-CIRCUIT PROTECTION

Protect solid polymer and hybrid capacitors from short-circuiting. Such high currents might destroy the capacitor and in rare cases ignite the rubber inside the capacitor.

LEAKAGE CURRENT

Leakage Currents might increase as consequence of longer storage, critical soldering processes, overload conditions, heavy charging/discharging, mechanical stress. Please note that solid polymer capacitors need a longer time for an internal repair than liquid capacitors like hybrid capacitors. An increase of the leakage current shall be taken as an indication of a possible damage and should be avoided generally. It is essential to ensure a correct soldering profile. Please follow the recommendation of Jianghai. In case of any questions please contact Jianghai Europe.

LIFETIME

There are many different lifetime definitions known without any true industry standard. Take special care when capacitors are compared that the capacitors fulfill the needed requirements. JIANGHAI publishes all conditions to be as transparent as possible. In the case of lifetime tests with additional ripple current, the bias DC voltage must be reduced, so that the sum of bias DC voltage and the peak of the ripple voltage does not exceed the Rated Voltage U_R .

LIMITATION ON USAGE

Polymer Capacitors cannot be used:

- in circuits with frequent and/or rapid charging and discharging function,
- in time-constant or coupling circuits,
- in high impedance circuits or applications, where the leakage current affects the circuit operation,

- after heavy thermal stress during soldering as the capacitance and leakage current may change,
- under mechanical stress. Avoid mechanical vibration and shock.
- in applications with heavy discharges / negative transients higher than 10% of U_R .

VIBRATION AND MECHANICAL STRESS

Capacitors are sensitive to vibration and mechanical forces applied to 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. The sleeve is not recognized as an isolator and therefore the standard capacitor should not be used in a place where insulation function is needed. Laminated capacitors need to be handled like non-isolated components. Please take care of a complete separation of the lead wires and the case of the capacitor. Please contact JIANGHAI if a higher grade of insulation is required.

CURRENT DERATING

For Polymer Capacitors of $>105^{\circ}C$ temperature class, current deratings for temperatures $>105^{\circ}C$ might be necessary. Please check carefully the individual datasheet.

SAFETY OF DESIGN

Always consider the safety when designing circuits. Plan for worst case failures such as short circuits and open circuits. Never reuse capacitors if they have been assembled and energized already.

HIGH RELIABILITY LIMITATION

Without written consent by Jianghai, Polymer capacitors should not be used in highly reliable or life sustaining applications such as: medical equipment, aviation/aerospace equipment, automotive and nuclear applications and others, where a capacitor failure may have a major impact.

ENVIRONMENTAL CONDITIONS

Avoid direct contact with water, salt solution, oil, dewing conditions. Halogens generally, especially fumigation treatment with bromides and flame retardant agents containing halogens must be avoided. Avoid exposing to direct sunshine, ozone, ultraviolet rays and x-ray radiation. Air Pressure: Max. 150kPa, min. 8kPa. For usage $>2000m$ altitude above sea level current deratings might be necessary. No heavy air pressure changes are allowed. Do not use or store in an environment containing any hazardous gas (e.g., hydrogen sulphide, sulphurous acid, nitrous acid, chlorine, ammonia, bromine, methyl bromide, other halogens, noxious gases) or acidic or alkaline solutions.

STORAGE

Temperature 5 to $30^{\circ}C$, relative humidity below 60%. These capacitors may accumulate charge naturally during storage. In

this case discharge through a 1kOhm resistor before use (recovery voltage). Leakage current may be increased after long storage time. In order to keep a good solderability, store the capacitors in plastic bags. The maximum storage time shall be limited to one year. Stacked solid polymer capacitors do have additional instructions, see datasheet.

SOLDERING

Soldering conditions (temperature, times) should be within specified conditions, especially for SMT components. Avoid high soldering temperatures as this may reduce lifetime or damage the capacitor. Do never dip the capacitor body into molten solder. Flux should not be adhered to the capacitor's body but only to its terminals. For details and different methods please contact us.

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 capacitor from the environment. Also, never use solvents containing: halogenated hydrocarbons, alkali, petroleum, trichloroethylene/-ethane, xylene, acetones, trichlorotrifluoroethane, tetrachloroethylene, methylenechloride, chloroform, acetates, ketones, esters, chlorides and bromides. If a circuit board cleaning is planned, please contact Jianghai Europe for approval of the cleaning process to avoid damages of the capacitors.

MOUNTING

Other devices, which are mounted near the capacitor, should not touch the capacitor. Additional heat coming from other components near 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. Screw Terminal capacitors should only be mounted in an upright position.

TRANSPORT

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.

MAINTENANCE

Periodical inspection should be carried out for the capacitor: visual inspection to check pressure relief open or leakage of electrolyte, electrical characteristics as leakage current, capacitance, and dissipation factor.

ELECTROLYTE AND SEPARATOR PAPER

Electrolyte and separator paper used in solid polymer or hybrid 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

The safety vent needs some free space to open properly. Allow for free headroom of at least 2mm for diameter $\leq 16\text{mm}$, more than 3mm for diameter 18-35mm, more than 5mm for case diameter 40mm and larger.

EMERGENCY ACTIONS

When the pressure relief vent is open and some gas blows out from the capacitor, please turn the mains 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. Do not touch electrolyte but wash skin with soap and water in case of skin contact. After exposure, consult a physician.

DEFINITION OF ELECTRICAL PARAMETERS

Separate documents as application notes, equivalent circuit diagrams and so on are available on request.

DISPOSAL

Capacitors going out of service are classified as scrapped metal. For disposal they are handled as controllable industrial waste because of the nature of the contents (electrolyte). Most of the material is aluminum and cannot be completely burned.

Jianghai Europe Electronic Components GmbH

VERSION 01/2024

SOLID

INTRODUCTION SOLID POLYMER CAPACITORS

Aluminum Solid Electrolyte Capacitors with conductive polymer are aluminum electrolytic capacitors that use a solid polythiophene electrolyte system. The conductive polymer yields extremely low ESR-values that allow for very high ripple currents at high frequencies. Typically, these types of capacitors are used in smoothing circuits of DC-DC converters and in high-frequency applications. The rated voltage range of Polymer Capacitors from Jianghai has been extended to voltages up to 200V, which allows the usage in many power supply applications.

COMPARISON OF SOLID POLYMER CAPACITORS AND LIQUID ELECTROLYTIC CAPACITORS

The characteristics of solid capacitors differ from liquid capacitors in many ways. As the electrolytic system is implemented as a solid, dry substance, the limiting effect of drying-out known from liquid electrolytic capacitors does only have a minor impact on the lifetime. As a consequence, the temperature characteristics allow a usage in a wide range of ambient temperatures. Temperatures in the range from -55°C to 105°C lead merely to capacitance changes from 10...15%, while the ESR remains almost constant. The stability of its low ESR-values (especially in low temperature range) makes the polymer capacitor attractive for many applications. Compared to tantalum electrolytic capacitors, polymer capacitors offer a more reliable solution with a similar functionality.

HYBRID

HYBRID POLYMER CAPACITORS

Hybrid Polymer Capacitors combine the technology of Solid Polymer and Liquid Electrolytic Capacitors. As a result, the rules of both technologies need to be applied. The lifetime of Hybrid Polymer Capacitors follows roughly the rules of Arrhenius like for Liquid Aluminum Electrolytic Capacitors, while the limitations of voltages and currents of the Polymer technology need to be applied. The additional liquid electrolyte leads to an improved self-healing performance. Compared to the solid technology, hybrid capacitors are seen as an optimized technical solution today for high ripple current applications.

For details, please contact Jianghai Europe.

SOLID

LIFETIME ESTIMATION SOLID POLYMER

Most lifetime tests for polymer capacitors are performed as a voltage-temperature test. The changes of the typical parameter like capacitance, leakage current and ohmic values are specified with a corresponding lifetime. Most lifetime models found in the literature on polymer capacitors are based on the such voltage-temperature tests without any additional current applied. As the capacitors are typically used under load conditions where ripple currents are present, most of the lifetime models do not meet the actual condition of usage well. Please take care when capacitors of different manufacturers are compared that similar lifetime test conditions have been deployed. The lifetime of solid polymer capacitors is affected by temperature, voltages, and the applied ripple currents generating heat due to power losses. But also additional factors like humidity or the impact of oxygen seeping in through the rubber seal are limiting the total lifetime. Oxidation and thermal degradation of the conductive polymer appear to be the dominant aging mechanisms. Jianghai offers a lifetime model for the estimation of the total lifetime of solid polymer capacitors that takes both the impact of the applied ripple current and the ambient temperature into account. In order to be comparable to other products available to the market, Jianghai defines the life time found on the datasheets as Endurance Lifetime L_e . The Endurance Lifetime is obtained by testing the capacitors at rated voltage and upper category temperature (i.e., without any ripple current applied) until a parametric failure is observed. For some high temperature series, current deratings for temperature $>105^\circ\text{C}$ need to be applied. Please check the individual datasheets carefully. Additionally, ΔT_0 shall be adapted depending on the temperature rating of the product. Please consult Jianghai Europe for lifetime estimations in case of doubt.

$$L = L_e \cdot 2^{\frac{(T_0 - T_A)}{10}} \cdot 2^{\frac{-\Delta T_0 \cdot \left(\frac{I_A}{I_R}\right)^2}{10}}$$

WHERE

- L Total Lifetime
- L_e Endurance Lifetime
- T_0 Upper Category Temperature
- T_A Ambient Temperature (in case of $T_A < 40^\circ\text{C}$ please take $T_A = 40^\circ\text{C}$)
- I_A Actual Ripple Current (at 100kHz)
- I_R Max. Allowed Rated Ripple Current (at 100kHz), see datasheet
- Please note: $I_A \leq I_R$
- ΔT_0 For $T_0 \leq 105^\circ\text{C}$ capacitors: $\Delta T_0 = 20\text{K}$
- For $T_0 > 105^\circ\text{C}$ capacitors: $\Delta T_0 = 20\text{K}$ for temperature range $T_A \leq 105^\circ\text{C}$
- $\Delta T_0 = 3\text{K}$ for temperature range $T_A > 105^\circ\text{C}$
- Please consider additionally possible current deratings.

HYBRID

LIFETIME ESTIMATION HYBRID POLYMER

The aging mechanism of hybrid polymer capacitors is dominated by the effect of drying out of the liquid electrolyte. Consequently, the lifetime model follows the rule of Arrhenius like with Liquid Electrolytic Capacitors.

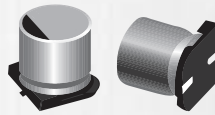
As mentioned before, there are lifetime models described in literature which do not include any current for estimating the lifetime. Please take care when comparing different lifetimes from different series or manufacturers.

Jianghai is defining the lifetime by a certain change of some capacitor parameters including the max. allowed ripple current applied at the upper category temperature together with a DC voltage. The sum of this DC voltage and the peak of the applied ripple voltage must not exceed the rated voltage.

$$L = L_0 \cdot 2^{\frac{(T_0 - T_A)}{10}} \cdot 2^{\frac{\left\{1 - \left(\frac{I_A}{I_R}\right)^2\right\} \Delta T_0}{10}}$$

WHERE

- L Total Lifetime
- L_0 Load Lifetime
- T_0 Upper Category Temperature
- T_A Ambient Temperature (in case of $T_A < 40^\circ\text{C}$ please take $T_A = 40^\circ\text{C}$)
- I_A Actual Ripple Current
- I_R Max. Allowed Rated Ripple Current (databook value)
- Please note: $I_A \leq I_R$
- ΔT_0 Please see value in specification of each series



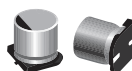
SOLID POLYMER CAPACITORS SMT TYPE

Solid Polymer: Order Code SMT	12
Solid Polymer: Technical Specifications SMT	13

SERIES	CODE	TYPE	TEMPERATURE	VOLTAGE	LIFETIME	INFO	
PC HVC	VC	SMT	105°C	2,5~25V	2 000h	Standard	14
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PC HVG	VG	SMT	125°C	2,5~20V	1 000h	High Temperature	18
PC HVK	VK	SMT	125°C	16~80V	2 000h	Extended Voltage, 125°C	20
PC HVM	VM	SMT	105°C	2,5~16V	2 000h	Low ESR	22
PC HVS	SV	SMT	105°C	4~25V	5 000h	Long Life	24

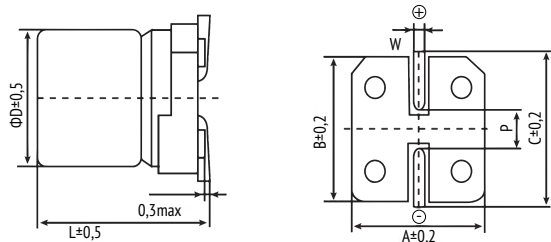


ORDER CODE SOLID POLYMER SMT TYPE



PC	V		1V		VG		101		M		B10		FV		-		W		E3	JExxxxx
Techno- logy	Terminal Type		Rated Voltage Code		Series Code		Capa- cittance Code (µF)		Capacitance Tolerance		Size Code (ΦDxL)		Lead Form		Pitch		Material Code		for internal use	for Specials only
PC = Polymer Capacitor	SMT	V	2,0V	OD	HVC	VC	0,1	0R1	±20%	M	F60	6,3 x 5,7	Taped	FV	Standard	-	Laminated	W		
			2,5V	OE	HVF	VF	0,47	R47	±10%	K	F80	6,3 x 7,7								
			4V	OG	HVG	VG	1,0	010	+30/-10%	Q	F10	6,3 x 10,0								
			6,3V	OJ	HVK	VK	2,2	2R2	preferred		B70	8,0 x 6,7								
			6,8V	06	HVM	VM	47	470			B80	8,0 x 7,7								
			7,0V	07	HVS	SV	100	101			B10	8,0 x 10,0								
			7,5V	75			1000	102			B12	8,0 x 12,2								
			10V	1A							C80	10 x 8,0								
			12,0V	A2							C10	10 x 10,0								
			12,5V	1B							C12	10 x 12,2								
			16V	1C																
			20V	1D																
			25V	1E																
			28V	L1																
			32V	1F																
			35V	1V																
			40V	1G																
			50V	1H																
			63V	1J																
			80V	1K																
			100V	2A																
			125V	2B																
			160V	2C																
			180V	2K																
			200V	2D																

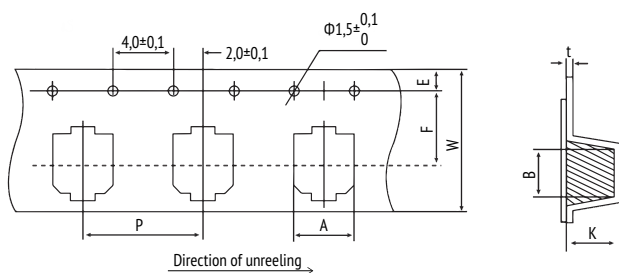
DIMENSIONS FOR SMT TYPE



Size Code	ΦD	L	A	B	C	W	$P \pm 0,2$
F60	6,3	5,7	6,6	6,6	7,3	0,5-0,85	2,0
F80	6,3	7,7	6,6	6,6	7,3	0,5-0,85	2,0
F10	6,3	10,0	6,6	6,6	7,3	0,7-1,1	2,0
B70	8,0	6,7	8,3	8,3	9,0	0,5-0,85	3,1
B80	8,0	7,7	8,3	8,3	9,0	0,7-1,1	3,1
B10	8,0	10,0	8,3	8,3	9,0	0,7-1,1	3,1
B12	8,0	12,2	8,3	8,3	9,0	0,7-1,1	3,1
C80	10,0	8,0	10,3	10,3	11,0	0,7-1,1	4,6
C10	10,0	10,0	10,3	10,3	11,0	0,7-1,1	4,6
C12	10,0	12,2	10,3	10,3	11,0	0,7-1,1	4,6

in mm

DIMENSIONS FOR TAPING

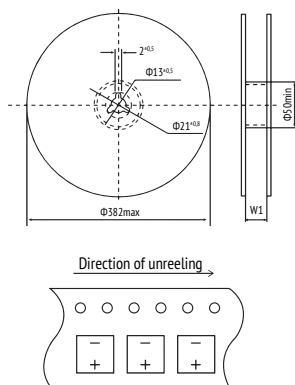


$E = 1,75 \pm 0,1 \text{ mm}$
 $t = 0,4 \pm 0,1 \text{ mm}$

Dimension	A	B	W	F	P	K
Case Code	$\pm 0,2$	$\pm 0,2$	$\pm 0,3$	$\pm 0,1$	$\pm 0,1$	$\pm 0,2$
F60	7,0	7,0	16,0	7,5	12,0	6,3
F80	7,0	7,0	16,0	7,5	12,0	8,3
F10	7,0	7,0	24,0	11,5	16,0	10,5
B70	8,7	8,7	24,0	11,5	12,0	7,3
B80	8,7	8,7	24,0	11,5	12,0	8,3
B10	8,7	8,7	24,0	11,5	16,0	11,0
B12	8,7	8,7	24,0	11,5	16,0	13,0
C80	10,7	10,7	24,0	11,5	16,0	8,3
C10	10,7	10,7	24,0	11,5	16,0	11,0
C12	10,7	10,7	24,0	11,5	16,0	13,0

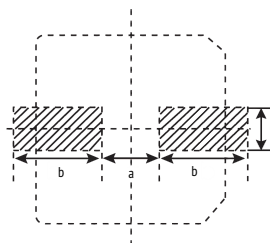
in mm

REEL DIMENSIONS



Case Code	Quantity (pcs/reel)	W_1 (mm)
F60	1 000	18
F80	900	18
F10	500	26
B70	1 000	26
B80	900	26
B10	500	26
B12	400	26
C80	500	26
C10	500	26
C12	400	26

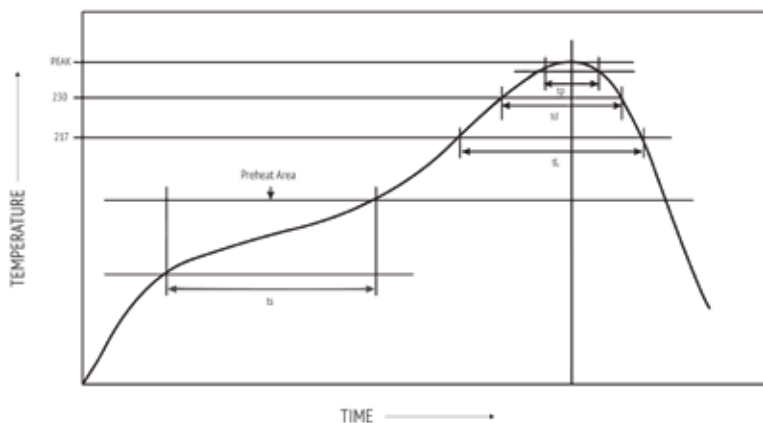
RECOMMENDED SOLDERING PAD DIMENSIONS



ΦD (code)	a	b	c
$\Phi 6,3$ (F)	1,9	3,5	1,6
$\Phi 8$ (B)	3,1	4,2	2,2
$\Phi 10$ (C)	4,5	4,4	2,2

in mm

RECOMMENDED SOLDERING PROFILE SMT

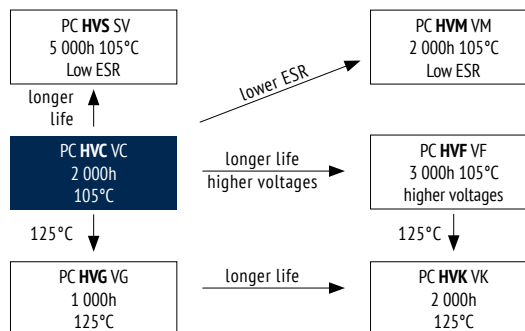


Voltage Range (Vdc)	Preheat	Time maintained above 217°C	Time maintained above 230°C	Peak Temperature
2,5 ~ 16V	150-180°C 60-120 seconds	50 seconds max.	40 seconds max.	260°C max.
20 ~ 200V	150-180°C 60-120 seconds	50 seconds max.	40 seconds max.	250°C max.

Only 1x soldering cycle allowed.

**2 000h
at 105°C**

- Standard
- Solid Polymer Electrolyte

**ITEM CHARACTERISTICS**

Operating Temperature Range (°C)	-55 ~ +105
Voltage Range (V)	2,5 ~ 25
Capacitance Range (µF)	10 ~ 1 200
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,15$
Dissipation Factor	at 20°C, 120 Hz, see table
Leakage Current (µA)	at 20°C after 2 minutes
Temperature Stability	$Z_{105^\circ\text{C}} / Z_{20^\circ\text{C}} \leq 1,25$
	$Z_{-55^\circ\text{C}} / Z_{+20^\circ\text{C}} \leq 1,25$



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

ITEM	ENDURANCE LIFETIME L_e	DAMP HEAT (Steady State)	RESISTANCE TO SOLDERING HEAT SMT
Lifetime	2 000h	1 000h	5sec, Reflow
Leakage Current	≤ the specified value	≤ the specified value (after voltage processing)	≤ the specified value (after voltage processing)
Capacitance Change	Within ± 20% of initial value	Within ± 20% of initial value	Within ± 10% of initial value
Dissipation Factor	≤ 150% of specified value	≤ 150% of specified value	≤ 130% of specified value
ESR Change	≤ 150% of specified value	≤ 150% of specified value	≤ 130% of specified value
Condition	T_0 (upper category temperature) $U_R = 0$ $I_R = 0$	60°C (90-95% relative humidity) $U_R = 0$ $I_R = 0$	260°C

details see page 8, 13

MULTIPLIER FOR RIPPLE CURRENT (FREQUENCY COEFFICIENT)

Frequency	120Hz ≤ f < 1kHz	1kHz ≤ f < 10kHz	10kHz ≤ f < 100kHz	100kHz ≤ f < 500kHz
Factor	0,05	0,30	0,70	1,00

Multipliers for typical operating conditions.

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

U _{RDC} Rated Voltage Code	C _R Rated Capacitance	ESR _{max} Equivalent Series Resistance	tanδ Dissipation Factor	I _{leak} Leakage Current	I _R Max.Allowed Ripple Current	Size øD x L	Order code
(V)	(μF)	(mΩ)	20°C 120kHz	(μA)	≤105°C 100kHz	(mm)	Details: Page 12
2,5 OE	220	20	0,12	110	2 800	6,3 x 5,7	PCV0EVC221MF60FV-WE3
	470	20	0,12	235	3 300	8 x 6,7	PCV0EVC471MB70FV-WE3
	560	20	0,12	280	3 300	8 x 6,7	PCV0EVC561MB70FV-WE3
	680	12	0,12	340	4 770	8 x 12,2	PCV0EVC681MB12FV-WE3
	1 500	10	0,12	750	5 500	10 x 12,2	PCV0EVC152MC12FV-WE3
4 OG	100	22	0,12	80	2 600	6,3 x 5,7	PCV0GVC101MF60FV-WE3
	150	22	0,12	120	2 800	6,3 x 5,7	PCV0GVC151MF60FV-WE3
	220	21	0,12	176	3 220	8 x 6,7	PCV0GVC221MB70FV-WE3
	270	21	0,12	216	3 220	8 x 6,7	PCV0GVC271MB70FV-WE3
	330	21	0,12	264	3 400	8 x 6,7	PCV0GVC331MB70FV-WE3
	560	12	0,12	448	4 770	8 x 12,2	PCV0GVC561MB12FV-WE3
	820	10	0,12	656	5 500	10 x 12,2	PCV0GVC821MC12FV-WE3
	1 200	10	0,12	960	5 500	10 x 12,2	PCV0GVC122MC12FV-WE3
6,3 OJ	68	27	0,12	86	2 400	6,3 x 5,7	PCV0JVC680MF60FV-WE3
	82	23	0,12	104	2 600	6,3 x 5,7	PCV0JVC820MF60FV-WE3
	100	23	0,12	126	2 800	6,3 x 5,7	PCV0JVC101MF60FV-WE3
	120	17	0,12	152	3 000	6,3 x 5,7	PCV0JVC121MF60FV-WE3
	150	22	0,12	189	3 200	8 x 6,7	PCV0JVC151MB70FV-WE3
	180	22	0,12	227	3 200	8 x 6,7	PCV0JVC181MB70FV-WE3
	220	22	0,12	278	3 400	8 x 6,7	PCV0JVC221MB70FV-WE3
	390	12	0,12	492	4 770	8 x 12,2	PCV0JVC391MB12FV-WE3
	470	12	0,12	593	4 770	8 x 12,2	PCV0JVC471MB12FV-WE3
	560	12	0,12	706	4 770	8 x 12,2	PCV0JVC561MB12FV-WE3
	680	10	0,12	857	5 500	10 x 12,2	PCV0JVC681MC12FV-WE3
	820	10	0,12	1 034	5 500	10 x 12,2	PCV0JVC821MC12FV-WE3
	1 000	10	0,12	1 260	5 500	10 x 12,2	PCV0JVC102MC12FV-WE3
10 1A	47	31	0,12	300	2 250	6,3 x 5,7	PCV1AVC470MF60FV-WE3
	56	28	0,12	300	2 300	6,3 x 5,7	PCV1AVC560MF60FV-WE3
	68	25	0,12	500	2 500	6,3 x 5,7	PCV1AVC680MF60FV-WE3
	120	23	0,12	300	3 000	8 x 6,7	PCV1AVC121MB70FV-WE3
	150	23	0,12	300	3 000	8 x 6,7	PCV1AVC151MB70FV-WE3
	270	13	0,12	540	4 500	8 x 12,2	PCV1AVC271MB12FV-WE3
	330	14	0,12	660	4 420	8 x 12,2	PCV1AVC331MB12FV-WE3
	470	12	0,12	940	5 300	10 x 12,2	PCV1AVC471MC12FV-WE3
	560	12	0,12	1 120	5 300	10 x 12,2	PCV1AVC561MC12FV-WE3
16 1C	33	31	0,12	106	2 400	6,3 x 5,7	PCV1CVC330MF60FV-WE3
	39	24	0,12	125	2 500	6,3 x 5,7	PCV1CVC390MF60FV-WE3
	47	24	0,12	151	2 500	6,3 x 5,7	PCV1CVC470MF60FV-WE3
	56	30	0,12	180	2 900	8 x 6,7	PCV1CVC560MB70FV-WE3
	82	28	0,12	263	3 200	8 x 6,7	PCV1CVC820MB70FV-WE3
	100	25	0,12	320	3 000	8 x 12,2	PCV1CVC101MB12FV-WE3
	150	20	0,12	480	4 320	10 x 12,2	PCV1CVC151MC12FV-WE3
	180	16	0,12	576	4 400	8 x 12,2	PCV1CVC181MB12FV-WE3
	220	16	0,12	704	4 400	8 x 12,2	PCV1CVC221MB12FV-WE3
		14	0,12	792	5 050	10 x 12,2	PCV1CVC221MC12FV-WE3
	330	14	0,12	1 056	5 050	10 x 12,2	PCV1CVC331MC12FV-WE3
20 1D	22	35	0,12	88	2 040	6,3 x 5,7	PCV1DVC220MF60FV-WE3
	27	35	0,12	108	2 040	6,3 x 5,7	PCV1DVC270MF60FV-WE3
	33	45	0,12	132	2 000	8 x 6,7	PCV1DVC330MB70FV-WE3
	39	45	0,12	156	2 000	8 x 6,7	PCV1DVC390MB70FV-WE3
	47	33	0,12	188	2 630	8 x 6,7	PCV1DVC470MB70FV-WE3
	100	22	0,12	400	3 320	8 x 12,2	PCV1DVC101MB12FV-WE3
	150	20	0,12	600	4 320	10 x 12,2	PCV1DVC151MC12FV-WE3
25 1E	10	65	0,12	50	1 500	6,3 x 5,7	PCV1EVC100MF60FV-WE3
		60	0,12	50	1 600	8 x 6,7	PCV1EVC100MB70FV-WE3
	22	50	0,12	110	1 800	8 x 6,7	PCV1EVC220MB70FV-WE3
	33	30	0,12	413	3 000	8 x 12,2	PCV1EVC330MB12FV-WE3
	47	30	0,12	588	3 000	8 x 12,2	PCV1EVC470MB12FV-WE3
	56	28	0,12	700	3 800	10 x 12,2	PCV1EVC560MC12FV-WE3

**3 000h
at 105°C**

- High Voltage
- Low ESR
- Solid Polymer Electrolyte

PC HVS SV
5 000h · 105°C
Low ESR

longer life
↑

PC HVC VC
2 000h
105°C

125°C
↓

PC HVG VG
1 000h
125°C

lower ESR
↗

PC HVM VM
2 000h · 105°C
Low ESR

longer life
higher voltages
→

PC HVF VF
3 000h · 105°C
higher voltages

125°C
↓

PC HVK VK
2 000h
125°C

longer life
→

ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-55 ~ +105
Voltage Range (V)	16 ~ 200
Capacitance Range (μF)	4,7 ~ 1 200
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,15$
Dissipation Factor	at 20°C, 120 Hz, see table
Leakage Current (μA)	at 20°C after 2 minutes
Temperature Stability	$Z_{105^\circ\text{C}} / Z_{20^\circ\text{C}} \leq 1,25$
	$Z_{-55^\circ\text{C}} / Z_{+20^\circ\text{C}} \leq 1,25$



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

ITEM	ENDURANCE LIFETIME L_e	DAMP HEAT (Steady State)	RESISTANCE TO SOLDERING HEAT SMT
Lifetime	3 000h	1 000h	5sec, Reflow
Leakage Current	≤ the specified value	≤ the specified value (after voltage processing)	≤ the specified value (after voltage processing)
Capacitance Change	Within ± 20% of initial value	Within ± 20% of initial value	Within ± 10% of initial value
Dissipation Factor	≤ 150% of specified value	≤ 150% of specified value	≤ 130% of specified value
ESR Change	≤ 150% of specified value	≤ 150% of specified value	≤ 130% of specified value
Condition	T_0 (upper category temperature) $U_R = 0$ $I_R = 0$	60°C (90~95% relative humidity) $U_R = 0$ $I_R = 0$	260°C

details see page 8, 13

MULTIPLIER FOR RIPPLE CURRENT (FREQUENCY COEFFICIENT)

Frequency	120Hz ≤ f < 1kHz	1kHz ≤ f < 10kHz	10kHz ≤ f < 100kHz	100kHz ≤ f < 500kHz
Factor	0,05	0,30	0,70	1,00

Multipliers for typical operating conditions.

ENVIRONMENTAL

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

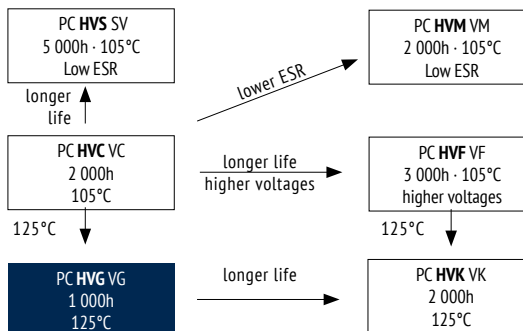


U _{RDC} Rated Voltage Code	C _R Rated Capacitance 20°C 120Hz	ESR _{max} Equivalent Series Resistance 20°C 100kHz	tanδ Dissipation Factor 20°C 120Hz	I _{leak} Leakage Current	I _R Max. Allowed Ripple Current ≤105°C 100kHz	Size øD x L	Order code
(V)	(µF)	(mΩ)		(µA)	(mAmps)	(mm)	Details: Page 12
16 1C	150	25	0,12	480	2 800	6,3 x 5,7	PCV1CVF151MF60FV-WE3
	180	25	0,12	576	2 800	6,3 x 5,7	PCV1CVF181MF60FV-WE3
	270	22	0,12	864	3 300	8 x 6,7	PCV1CVF271MB70FV-WE3
	330	22	0,12	1 056	3 300	8 x 6,7	PCV1CVF331MB70FV-WE3
	470	14	0,12	1 504	4 950	8 x 12,2	PCV1CVF471MB12FV-WE3
	560	14	0,12	1 792	4 950	8 x 12,2	PCV1CVF561MB12FV-WE3
	680	14	0,12	2 176	4 950	8 x 12,2	PCV1CVF681MB12FV-WE3
	1 000	12	0,12	3 200	5 400	10 x 12,2	PCV1CVF102MC12FV-WE3
	1 200	12	0,12	3 840	5 400	10 x 12,2	PCV1CVF122MC12FV-WE3
20 1D	120	28	0,12	480	2 650	6,3 x 5,7	PCV1DVF121MF60FV-WE3
	150	28	0,12	600	2 650	6,3 x 5,7	PCV1DVF151MF60FV-WE3
	220	24	0,12	880	3 200	8 x 6,7	PCV1DVF221MB70FV-WE3
	270	24	0,12	1 080	3 200	8 x 6,7	PCV1DVF271MB70FV-WE3
	390	14	0,12	1 560	4 950	8 x 12,2	PCV1DVF391MB12FV-WE3
	470	14	0,12	1 880	4 950	8 x 12,2	PCV1DVF471MB12FV-WE3
	560	14	0,12	2 240	4 950	8 x 12,2	PCV1DVF561MB12FV-WE3
		12	0,12	2 240	5 400	10 x 12,2	PCV1DVF561MC12FV-WE3
	680	12	0,12	2 720	5 400	10 x 12,2	PCV1DVF681MC12FV-WE3
	820	12	0,12	3 280	5 400	10 x 12,2	PCV1DVF821MC12FV-WE3
25 1E	100	30	0,12	500	2 550	6,3 x 5,7	PCV1EVF101MF60FV-WE3
	120	30	0,12	600	2 550	6,3 x 5,7	PCV1EVF121MF60FV-WE3
	180	24	0,12	900	3 200	8 x 6,7	PCV1EVF181MB70FV-WE3
	220	24	0,12	1 100	3 200	8 x 6,7	PCV1EVF221MB70FV-WE3
	330	16	0,12	1 650	4 650	8 x 12,2	PCV1EVF331MB12FV-WE3
	390	16	0,12	1 950	4 650	8 x 12,2	PCV1EVF391MB12FV-WE3
	470	16	0,12	2 350	4 650	8 x 12,2	PCV1EVF471MB12FV-WE3
		14	0,12	2 350	5 000	10 x 12,2	PCV1EVF471MC12FV-WE3
	560	14	0,12	2 800	5 000	10 x 12,2	PCV1EVF561MC12FV-WE3
28 1L	680	14	0,12	3 400	5 000	10 x 12,2	PCV1EVF681MC12FV-WE3
	82	33	0,12	460	2 450	6,3 x 5,7	PCV1LVF820MF60FV-WE3
	150	28	0,12	840	2 950	8 x 6,7	PCV1LVF151MB70FV-WE3
	270	18	0,12	1 512	4 350	8 x 12,2	PCV1LVF271MB12FV-WE3
	330	18	0,12	1 848	4 350	8 x 12,2	PCV1LVF331MB12FV-WE3
	470	16	0,12	2 632	4 650	10 x 12,2	PCV1LVF471MC12FV-WE3
32 1F	560	16	0,12	3 136	4 650	10 x 12,2	PCV1LVF561MC12FV-WE3
	68	35	0,12	436	2 350	6,3 x 5,7	PCV1FVF680MF60FV-WE3
	120	30	0,12	768	2 800	8 x 6,7	PCV1FVF121MB70FV-WE3
	220	20	0,12	1 408	4 000	8 x 12,2	PCV1FVF221MB12FV-WE3
	270	20	0,12	1 728	4 000	8 x 12,2	PCV1FVF271MB12FV-WE3
	390	18	0,12	2 496	4 400	10 x 12,2	PCV1FVF391MC12FV-WE3
35 1V	470	18	0,12	3 008	4 400	10 x 12,2	PCV1FVF471MC12FV-WE3
	47	35	0,12	329	2 350	6,3 x 5,7	PCV1VVF470MF60FV-WE3
	56	35	0,12	392	2 350	6,3 x 5,7	PCV1VVF560MF60FV-WE3
	100	30	0,12	700	2 800	8 x 6,7	PCV1VVF101MB70FV-WE3
	180	20	0,12	1 260	4 000	8 x 12,2	PCV1VVF181MB12FV-WE3
	220	20	0,12	1 540	4 000	8 x 12,2	PCV1VVF221MB12FV-WE3
40 1G	330	18	0,12	2 310	4 400	10 x 12,2	PCV1VVF331MC12FV-WE3
	390	18	0,12	2 730	4 400	10 x 12,2	PCV1VVF391MC12FV-WE3
	33	40	0,12	264	2 200	6,3 x 5,7	PCV1GVF330MF60FV-WE3
	39	37	0,12	312	2 300	6,3 x 5,7	PCV1GVF390MF60FV-WE3
	82	32	0,12	656	2 700	8 x 6,7	PCV1GVF820MB70FV-WE3
	150	21	0,12	1 200	3 900	8 x 12,2	PCV1GVF151MB12FV-WE3
	220	18	0,12	1 760	4 400	10 x 12,2	PCV1GVF221MC12FV-WE3
	270	18	0,12	2 160	4 400	10 x 12,2	PCV1GVF271MC12FV-WE3
	330	18	0,12	2 640	4 400	10 x 12,2	PCV1GVF331MC12FV-WE3

U _{RDC} Rated Voltage Code	C _R Rated Capacitance 20°C 120Hz	ESR _{max} Equivalent Series Resistance 20°C 100kHz	tanδ Dissipation Factor 20°C 120Hz	I _{leak} Leakage Current	I _R Max. Allowed Ripple Current ≤105°C 100kHz	Size øD x L	Order code
(V)	(µF)	(mΩ)		(µA)	(mAmps)	(mm)	Details: Page 12
50 1H	22	40	0,12	220	2 200	6,3 x 5,7	PCV1HVF220MF60FV-WE3
	33	35	0,12	330	2 600	8 x 6,7	PCV1HVF330MB70FV-WE3
	39	35	0,12	390	2 600	8 x 6,7	PCV1HVF390MB70FV-WE3
	82	25	0,12	820	3 800	8 x 12,2	PCV1HVF820MB12FV-WE3
	100	25	0,12	1 000	3 800	8 x 12,2	PCV1HVF101MB12FV-WE3
		20	0,12	1 000	4 300	10 x 12,2	PCV1HVF101MC12FV-WE3
	120	20	0,12	1 200	4 300	10 x 12,2	PCV1HVF121MC12FV-WE3
	150	20	0,12	1 500	4 300	10 x 12,2	PCV1HVF151MC12FV-WE3
63 1J	10	50	0,12	126	1 950	6,3 x 5,7	PCV1JVF100MF60FV-WE3
	12	50	0,12	152	1 950	6,3 x 5,7	PCV1JVF120MF60FV-WE3
	22	45	0,12	278	2 350	8 x 6,7	PCV1JVF220MB70FV-WE3
	27	45	0,12	341	2 350	8 x 6,7	PCV1JVF270MB70FV-WE3
	47	26	0,12	593	3 600	8 x 12,2	PCV1JVF470MB12FV-WE3
	56	26	0,12	706	3 600	8 x 12,2	PCV1JVF560MB12FV-WE3
		22	0,12	706	4 100	10 x 12,2	PCV1JVF560MC12FV-WE3
	68	22	0,12	857	4 100	10 x 12,2	PCV1JVF680MC12FV-WE3
	82	22	0,12	1 034	4 100	10 x 12,2	PCV1JVF820MC12FV-WE3
	100	22	0,12	1 260	4 100	10 x 12,2	PCV1JVF101MC12FV-WE3
80 1K	33	32	0,12	528	3 200	8 x 12,2	PCV1KVF330MB12FV-WE3
	39	32	0,12	624	3 200	8 x 12,2	PCV1KVF390MB12FV-WE3
	47	28	0,12	752	3 600	10 x 12,2	PCV1KVF470MC12FV-WE3
	56	28	0,12	896	3 600	10 x 12,2	PCV1KVF560MC12FV-WE3
100 2A	12	36	0,12	240	3 000	8 x 12,2	PCV2AVF120MB12FV-WE3
	15	36	0,12	300	3 000	8 x 12,2	PCV2AVF150MB12FV-WE3
	22	32	0,12	440	3 300	10 x 12,2	PCV2AVF220MC12FV-WE3
	27	32	0,12	540	3 300	10 x 12,2	PCV2AVF270MC12FV-WE3
125 2B	10	45	0,12	250	2 700	8 x 12,2	PCV2BVF100MB12FV-WE3
	12	45	0,12	300	2 700	8 x 12,2	PCV2BVF120MB12FV-WE3
	18	40	0,12	450	3 000	10 x 12,2	PCV2BVF180MC12FV-WE3
	22	40	0,12	550	3 000	10 x 12,2	PCV2BVF220MC12FV-WE3
160 2C	10	60	0,12	320	2 400	10 x 12,2	PCV2CVF100MC12FV-WE3
	12	60	0,12	384	2 400	10 x 12,2	PCV2CVF120MC12FV-WE3
200 2D	8,2	100	0,12	328	1 850	10 x 12,2	PCV2DVF8R2MC12FV-WE3
	10	100	0,12	400	1 850	10 x 12,2	PCV2DVF100MC12FV-WE3

**1 000h
at 125°C**

- High Temperature
- Low ESR
- Solid Polymer Electrolyte

**ITEM CHARACTERISTICS**

Operating Temperature Range (°C)	-55 ~ +125
Voltage Range (V)	2,5 ~ 20
Capacitance Range (μF)	22 ~ 560
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,15$
Dissipation Factor	at 20°C, 120 Hz, see table
Leakage Current (μA)	at 20°C after 2 minutes
Temperature Stability	$Z_{125°C} / Z_{+20°C} \leq 1,25$ $Z_{-55°C} / Z_{+20°C} \leq 1,25$



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

ITEM	ENDURANCE LIFETIME L_e	DAMP HEAT (Steady State)	RESISTANCE TO SOLDERING HEAT SMT
Lifetime	1 000h	1 000h	5sec, Reflow
Leakage Current	≤ the specified value	≤ the specified value (after voltage processing)	≤ the specified value (after voltage processing)
Capacitance Change	Within ± 20% of initial value	Within ± 20% of initial value	Within ± 10% of initial value
Dissipation Factor	≤ 200% of specified value	≤ 150% of specified value	≤ 130% of specified value
ESR Change	≤ 200% of specified value	≤ 150% of specified value	≤ 130% of specified value
Condition	T_0 (upper category temperature) $U_R = 0$ $I_R = 0$	60°C (90~95% relative humidity) $U_R = 0$ $I_R = 0$	260°C

details see page 8, 13

MULTIPLIER FOR RIPPLE CURRENT (FREQUENCY COEFFICIENT)

Frequency	120Hz ≤ f < 1kHz	1kHz ≤ f < 10kHz	10kHz ≤ f < 100kHz	100kHz ≤ f < 500kHz
Factor	0,05	0,30	0,70	1,00

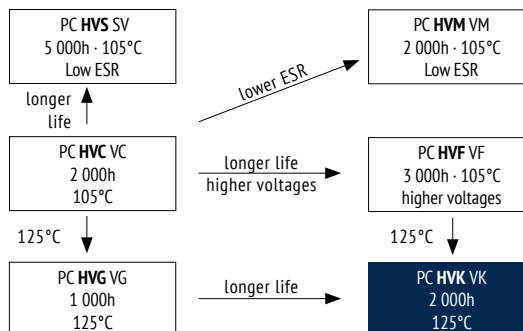
Multipliers for typical operating conditions.

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

U_{RDC} Rated Voltage Code	C_R Rated Capacitance	ESR_{max} Equivalent Series Resistance	$\tan\delta$ Dissipation Factor	I_{leak} Leakage Current	$I_{max 105^\circ C}$ Max. Allowed Ripple Current	$I_{max 125^\circ C}$ Max. Allowed Ripple Current	Size $\varnothing D \times L$	Order code
(V)	(μF)	(m Ω)	(μA)	(μA)	(mA _{rms})	(mA _{rms})	(mm)	Details: Page 12
2,5 OE	220	35	0,12	110	2 500	770	6,3 x 5,7	PCV0EVG221MF60FV-WE3
	560	30	0,12	280	3 100	960	8 x 6,7	PCV0EVG561MB70FV-WE3
4 OG	150	35	0,12	120	2 450	770	6,3 x 5,7	PCV0GVG151MF60FV-WE3
	220	30	0,12	176	3 020	960	8 x 6,7	PCV0GVG221MB70FV-WE3
6,3 OJ	82	40	0,12	103	2 400	720	6,3 x 5,7	PCV0JVG820MF60FV-WE3
	100	40	0,12	126	2 400	720	6,3 x 5,7	PCV0JVG101MF60FV-WE3
	150	30	0,12	189	3 020	960	8 x 6,7	PCV0JVG151MB70FV-WE3
	220	30	0,12	277	3 020	960	8 x 6,7	PCV0JVG221MB70FV-WE3
10 1A	56	45	0,12	112	2 250	680	6,3 x 5,7	PCV1AVG560MF60FV-WE3
	120	35	0,12	240	2 800	880	8 x 6,7	PCV1AVG121MB70FV-WE3
	150	35	0,12	300	2 800	880	8 x 6,7	PCV1AVG151MB70FV-WE3
	330	35	0,12	660	2 800	880	8 x 6,7	PCV1AVG331MB70FV-WE3
16 1C	39	50	0,12	125	2 050	650	6,3 x 5,7	PCV1CVG390MF60FV-WE3
	82	40	0,12	262	2 700	830	8 x 6,7	PCV1CVG820MB70FV-WE3
20 1D	22	60	0,12	88	1 650	590	6,3 x 5,7	PCV1DVG220MF60FV-WE3
	47	45	0,12	188	2 000	780	8 x 6,7	PCV1DVG470MB70FV-WE3

**2 000h
at 125°C**

- Low ESR
- High Voltage
- High Temperature
- Solid Polymer Electrolyte



ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-55 ~ +125
Voltage Range (V)	16 ~ 80
Capacitance Range (μF)	18 ~ 1 000
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,15$
Dissipation Factor	at 20°C, 120 Hz, see table
Leakage Current (μA)	at 20°C after 2 minutes
Temperature Stability	$Z_{125^\circ\text{C}} / Z_{+20^\circ\text{C}} \leq 1,25$
	$Z_{-55^\circ\text{C}} / Z_{+20^\circ\text{C}} \leq 1,25$



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

ITEM	ENDURANCE LIFETIME L_e	DAMP HEAT (Steady State)	RESISTANCE TO SOLDERING HEAT SMT
Lifetime	2 000h	1 000h	5sec, Reflow
Leakage Current	≤ the specified value	≤ the specified value (after voltage processing)	≤ the specified value (after voltage processing)
Capacitance Change	Within ± 20% of initial value	Within ± 20% of initial value	Within ± 10% of initial value
Dissipation Factor	≤ 200% of specified value	≤ 150% of specified value	≤ 130% of specified value
ESR Change	≤ 200% of specified value	≤ 150% of specified value	≤ 130% of specified value
Condition	T_0 (upper category temperature) $U_R = 0$ $I_R = 0$	60°C (90-95% relative humidity) $U_R = 0$ $I_R = 0$	260°C

details see page 8, 13

MULTIPLIER FOR RIPPLE CURRENT (FREQUENCY COEFFICIENT)

Frequency	120Hz ≤ f < 1kHz	1kHz ≤ f < 10kHz	10kHz ≤ f < 100kHz	100kHz ≤ f < 500kHz
Factor	0,05	0,30	0,70	1,00

Multipliers for typical operating conditions.

ENVIRONMENTAL

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

U _{RDC} Rated Voltage Code	C _R Rated Capacitance	ESR _{max} Equivalent Series Resistance	tanδ Dissipation Factor	I _{leak} Leakage Current	I _{max 125°C} Max. Allowed Ripple Current	Size øD x L	Order code
(V)	(μF)	(mΩ)	20°C 120kHz	(μA)	≤125°C 100kHz	(mm)	Details: Page 12
16 1C	470	17	0,12	1 504	2 500	8 x 12,2	PCV1CVK471MB12FV-WE3
	560	17	0,12	1 792	2 500	8 x 12,2	PCV1CVK561MB12FV-WE3
	1 000	15	0,12	3 200	2 700	10 x 12,2	PCV1CVK102MC12FV-WE3
20 1D	120	34	0,12	480	1 300	6,3 x 5,7	PCV1DVK121MF60FV-WE3
	180	29	0,12	720	1 600	8 x 6,7	PCV1DVK181MB70FV-WE3
	220	29	0,12	880	1 600	8 x 6,7	PCV1DVK221MB70FV-WE3
	390	17	0,12	1 560	2 400	8 x 12,2	PCV1DVK391MB12FV-WE3
	680	15	0,12	2 720	2 600	10 x 12,2	PCV1DVK681MC12FV-WE3
25 1E	47	42	0,12	235	1 175	6,3 x 5,7	PCV1EVK470MF60FV-WE3
	82	36	0,12	410	1 255	6,3 x 5,7	PCV1EVK820MF60FV-WE3
	100	36	0,12	500	1 255	6,3 x 5,7	PCV1EVK101MF60FV-WE3
	150	29	0,12	750	1 600	8 x 6,7	PCV1EVK151MB70FV-WE3
	180	29	0,12	900	1 600	8 x 6,7	PCV1EVK181MB70FV-WE3
	330	19	0,12	1 650	2 325	8 x 12,2	PCV1EVK331MB12FV-WE3
	390	19	0,12	1 950	2 325	8 x 12,2	PCV1EVK391MB12FV-WE3
	470	17	0,12	2 350	2 500	10 x 12,2	PCV1EVK471MC12FV-WE3
	560	17	0,12	2 800	2 500	10 x 12,2	PCV1EVK561MC12FV-WE3
35 1V	47	42	0,12	329	1 175	6,3 x 5,7	PCV1VVK470MF60FV-WE3
	56	42	0,12	392	1 175	6,3 x 5,7	PCV1VVK560MF60FV-WE3
	82	36	0,12	574	1 400	8 x 6,7	PCV1VVK820MB70FV-WE3
	100	36	0,12	700	1 400	8 x 6,7	PCV1VVK101MB70FV-WE3
	180	24	0,12	1 260	2 000	8 x 12,2	PCV1VVK181MB12FV-WE3
	220	24	0,12	1 540	2 000	8 x 12,2	PCV1VVK221MB12FV-WE3
	270	22	0,12	1 890	2 200	10 x 12,2	PCV1VVK271MC12FV-WE3
	330	22	0,12	2 310	2 200	10 x 12,2	PCV1VVK331MC12FV-WE3
40 1G	33	45	0,12	264	1 150	6,3 x 5,7	PCV1GVK330MF60FV-WE3
	39	45	0,12	312	1 150	6,3 x 5,7	PCV1GVK390MF60FV-WE3
	68	38	0,12	544	1 350	8 x 6,7	PCV1GVK680MB70FV-WE3
	82	38	0,12	656	1 350	8 x 6,7	PCV1GVK820MB70FV-WE3
	150	25	0,12	1 200	1 950	8 x 12,2	PCV1GVK151MB12FV-WE3
	220	22	0,12	1 760	2 200	10 x 12,2	PCV1GVK221MC12FV-WE3
	270	22	0,12	2 160	2 200	10 x 12,2	PCV1GVK271MC12FV-WE3
50 1H	18	48	0,12	180	1 100	6,3 x 5,7	PCV1HVK180MF60FV-WE3
	22	48	0,12	220	1 100	6,3 x 5,7	PCV1HVK220MF60FV-WE3
	33	42	0,12	330	1 300	8 x 6,7	PCV1HVK330MB70FV-WE3
	39	42	0,12	390	1 300	8 x 6,7	PCV1HVK390MB70FV-WE3
	82	20	0,12	820	1 900	8 x 12,2	PCV1HVK820MB12FV-WE3
	100	30	0,12	1 000	1 900	8 x 12,2	PCV1HVK101MB12FV-WE3
		24	0,12	1 000	2 150	10 x 12,2	PCV1HVK101MC12FV-WE3
	120	24	0,12	1 200	2 150	10 x 12,2	PCV1HVK121MC12FV-WE3
	150	24	0,12	1 500	2 150	10 x 12,2	PCV1HVK151MC12FV-WE3
63 1J	22	54	0,12	278	1 175	8 x 6,7	PCV1JVK220MB70FV-WE3
	27	54	0,12	341	1 175	8 x 6,7	PCV1JVK270MB70FV-WE3
	47	31	0,12	593	1 800	8 x 12,2	PCV1JVK470MB12FV-WE3
	56	31	0,12	706	1 800	8 x 12,2	PCV1JVK560MB12FV-WE3
	82	27	0,12	1 034	2 000	10 x 12,2	PCV1JVK820MC12FV-WE3
	100	27	0,12	1 260	2 000	10 x 12,2	PCV1JVK101MC12FV-WE3
80 1K	33	38	0,12	528	1 600	8 x 12,2	PCV1KVK330MB12FV-WE3
	39	38	0,12	624	1 600	8 x 12,2	PCV1KVK390MB12FV-WE3
	47	34	0,12	752	1 800	10 x 12,2	PCV1KVK470MC12FV-WE3
	56	34	0,12	896	1 800	10 x 12,2	PCV1KVK560MC12FV-WE3

**2 000h
at 105°C**

- Low ESR
- Solid Polymer Electrolyte

PC HVS SV
5 000h 105°C
Low ESRlonger
life ↑PC HVC VC
2 000h
105°C

125°C ↓

PC HVG VG
1 000h
125°C

lower ESR ↗

PC HVM VM
2 000h 105°C
Low ESRlonger Life
higher voltages →PC HVF VF
3 000h 105°C
higher voltages

125°C ↓

PC HVK VK
2 000h
125°C

longer Life →

ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-55 ~ +105
Voltage Range (V)	2,5 ~ 16
Capacitance Range (μF)	56 ~ 2 700
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,15$
Dissipation Factor	at 20°C, 120 Hz, see table
Leakage Current (μA)	at 20°C after 2 minutes
Temperature Stability	$Z_{105^\circ\text{C}} / Z_{20^\circ\text{C}} \leq 1,25$
	$Z_{-55^\circ\text{C}} / Z_{+20^\circ\text{C}} \leq 1,25$



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

ITEM	ENDURANCE LIFETIME L_e	DAMP HEAT (Steady State)	RESISTANCE TO SOLDERING HEAT SMT
Lifetime	2 000h	1 000h	5sec, Reflow
Leakage Current	≤ the specified value	≤ the specified value (after voltage processing)	≤ the specified value (after voltage processing)
Capacitance Change	Within ± 20% of initial value	Within ± 20% of initial value	Within ± 10% of initial value
Dissipation Factor	≤ 150% of specified value	≤ 150% of specified value	≤ 130% of specified value
ESR Change	≤ 150% of specified value	≤ 150% of specified value	≤ 130% of specified value
Condition	T_0 (upper category temperature) $U_R = 0$ $I_R = 0$	60°C (90-95% relative humidity) $U_R = 0$ $I_R = 0$	260°C

details see page 8, 13

MULTIPLIER FOR RIPPLE CURRENT (FREQUENCY COEFFICIENT)

Frequency	120Hz ≤ f < 1kHz	1kHz ≤ f < 10kHz	10kHz ≤ f < 100kHz	100kHz ≤ f < 500kHz
Factor	0,05	0,3	0,7	1,00

Multipliers for typical operating conditions.

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

U _{RDC}	C _R	ESR _{max}	tanδ	I _{leak}	I _R	Size	Order code
Rated Voltage Code	Rated Capacitance 20°C 120Hz	Equivalent Series Resistance 20°C 100kHz	Dissipation Factor 20°C 120Hz	Leakage Current	Max.Allowed Ripple Current <105°C 100kHz	øD x L	
(V)	(µF)	(mΩ)		(µA)	(mArms)	(mm)	Details: Page 12
2,5 OE	330	14	0,12	165	3 160	6,3 x 5,7	PCV0EVM331MF60FV-WE3
	390	14	0,12	195	3 160	6,3 x 5,7	PCV0EVM391MF60FV-WE3
	470	13	0,12	235	3 600	6,3 x 5,7	PCV0EVM471MF60FV-WE3
		13	0,12	235	3 600	6,3 x 7,7	PCV0EVM471MF80FV-WE3
	560	13	0,12	280	3 600	6,3 x 5,7	PCV0EVM561MF60FV-WE3
		13	0,12	280	3 600	6,3 x 7,7	PCV0EVM561MF80FV-WE3
		13	0,12	280	4 100	8 x 6,7	PCV0EVM561MB70FV-WE3
	680	13	0,12	340	4 100	8 x 6,7	PCV0EVM681MB70FV-WE3
		12	0,12	410	4 260	8 x 7,7	PCV0EVM821MB80FV-WE3
	820	9	0,12	410	5 400	8 x 12,2	PCV0EVM821MB12FV-WE3
		12	0,12	500	4 260	8 x 7,7	PCV0EVM102MB80FV-WE3
	1 000	12	0,12	500	4 260	8 x 7,7	PCV0EVM102MB80FV-WE3
	1 200	13	0,12	600	4 450	10 x 8	PCV0EVM122MC80FV-WE3
	1 500	10	0,12	750	5 220	8 x 10	PCV0EVM152MB10FV-WE3
		10	0,12	750	5 400	8 x 12,2	PCV0EVM152MB12FV-WE3
	2 200	10	0,12	1 100	5 500	10 x 10	PCV0EVM222MC10FV-WE3
	2 700	9	0,12	1 350	5 600	10 x 12,2	PCV0EVM272MC12FV-WE3

4 OG	270	15	0,12	216	3 160	6,3 x 5,7	PCV0GVM271MF60FV-WE3
	330	14	0,12	264	3 160	6,3 x 5,7	PCV0GVM331MF60FV-WE3
	390	14	0,12	312	3 160	6,3 x 5,7	PCV0GVM391MF60FV-WE3
		14	0,12	312	3 470	6,3 x 7,7	PCV0GVM391MF80FV-WE3
	470	14	0,12	376	3 950	8 x 6,7	PCV0GVM471MB70FV-WE3
		14	0,12	448	3 950	8 x 6,7	PCV0GVM561MB70FV-WE3
	560	9	0,12	448	5 400	8 x 12,2	PCV0GVM561MB12FV-WE3
		13	0,12	544	3 950	8 x 7,7	PCV0GVM681MB80FV-WE3
	680	13	0,12	800	5 220	8 x 10	PCV0GVM102MB10FV-WE3
		13	0,12	800	4 300	10 x 8	PCV0GVM102MC80FV-WE3
	1 000	9	0,12	960	5 400	8 x 12,2	PCV0GVM122MB12FV-WE3
		10	0,12	960	5 500	10 x 10	PCV0GVM122MC10FV-WE3
	1 200	10	0,12	1 200	5 400	8 x 12,2	PCV0GVM152MB12FV-WE3
		10	0,12	1 200	5 500	10 x 10	PCV0GVM152MC10FV-WE3
	1 500	10	0,12	1 440	5 500	10 x 10	PCV0GVM182MC10FV-WE3
		9	0,12	1 440	5 600	10 x 12,2	PCV0GVM182MC12FV-WE3

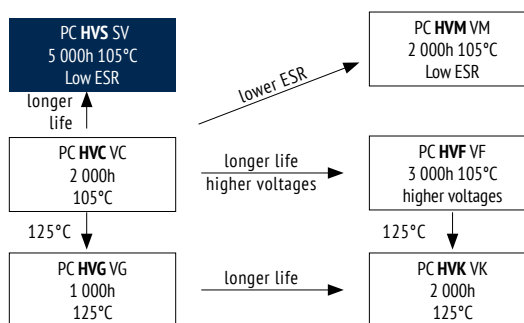
6,3 OJ	220	15	0,12	278	3 160	6,3 x 5,7	PCV0JVM221MF60FV-WE3
	270	14	0,12	341	3 160	6,3 x 5,7	PCV0JVM271MF60FV-WE3
		14	0,12	341	3 470	6,3 x 7,7	PCV0JVM271MF80FV-WE3
	330	14	0,12	416	3 390	6,3 x 5,7	PCV0JVM331MF60FV-WE3
		14	0,12	416	3 470	6,3 x 7,7	PCV0JVM331MF80FV-WE3
		14	0,12	416	3 950	6,3 x 10	PCV0JVM331MF10FV-WE3
		14	0,12	416	3 950	8 x 6,7	PCV0JVM331MB70FV-WE3
	390	14	0,12	492	3 950	8 x 6,7	PCV0JVM391MB70FV-WE3
	470	14	0,12	593	3 950	8 x 6,7	PCV0JVM471MB70FV-WE3
		13	0,12	593	3 950	8 x 7,7	PCV0JVM471MB80FV-WE3
	560	14	0,12	706	3 950	8 x 6,7	PCV0JVM561MB70FV-WE3
	680	14	0,12	857	3 950	8 x 6,7	PCV0JVM681MB70FV-WE3
		12	0,12	857	4 770	8 x 10	PCV0JVM681MB10FV-WE3
	820	12	0,12	1 034	4 770	8 x 10	PCV0JVM821MB10FV-WE3
		10	0,12	1 034	5 150	8 x 12,2	PCV0JVM821MB12FV-WE3
		14	0,12	1 034	4 300	10 x 8	PCV0JVM821MC80FV-WE3
	1 000	10	0,12	1 260	5 150	8 x 12,2	PCV0JVM102MB12FV-WE3
	1 200	10	0,12	1 512	5 025	10 x 10	PCV0JVM122MC10FV-WE3
	1 500	10	0,12	1 890	5 025	10 x 10	PCV0JVM152MC10FV-WE3
		10	0,12	1 890	5 500	10 x 12,2	PCV0JVM152MC12FV-WE3

10 1A	120	18	0,12	240	2 900	6,3 x 5,7	PCV1AVM121MF60FV-WE3
	150	18	0,12	300	2 900	6,3 x 5,7	PCV1AVM151MF60FV-WE3
		21	0,12	300	2 880	6,3 x 7,7	PCV1AVM151MF80FV-WE3
	180	18	0,12	360	2 900	6,3 x 5,7	PCV1AVM181MF60FV-WE3
	220	18	0,12	440	2 900	6,3 x 5,7	PCV1AVM221MF60FV-WE3
		21	0,12	440	3 220	8 x 6,7	PCV1AVM221MB70FV-WE3
	270	21	0,12	540	3 220	8 x 6,7	PCV1AVM271MB70FV-WE3
	330	21	0,12	660	3 220	8 x 6,7	PCV1AVM331MB70FV-WE3
		19	0,12	660	3 390	8 x 7,7	PCV1AVM331MB80FV-WE3
	390	17	0,12	780	4 000	8 x 10	PCV1AVM391MB10FV-WE3
	470	17	0,12	940	3 800	10 x 8	PCV1AVM471MC80FV-WE3
	680	13	0,12	1 360	4 820	10 x 10	PCV1AVM681MC10FV-WE3

U _{RDC}	C _R	ESR _{max}	tanδ	I _{leak}	I _R	Size	Order code
Rated Voltage Code	Rated Capacitance 20°C 120Hz	Equivalent Series Resistance 20°C 100kHz	Dissipation Factor 20°C 120Hz	Leakage Current	Max.Allowed Ripple Current <105°C 100kHz	øD x L	
(V)	(µF)	(mΩ)		(µA)	(mArms)	(mm)	Details: Page 12
16 1C	56	25	0,12	180	2 440	6,3 x 5,7	PCV1CVM560MF60FV-WE3
	68	25	0,12	218	2 440	6,3 x 5,7	PCV1CVM680MF60FV-WE3
	82	24	0,12	263	2 700	6,3 x 7,7	PCV1CVM820MF80FV-WE3
		24	0,12	320	2 490	6,3 x 5,7	PCV1CVM101MF60FV-WE3
	100	24	0,12	320	2 700	6,3 x 7,7	PCV1CVM101MF80FV-WE3
		24	0,12	320	3 010	8 x 6,7	PCV1CVM101MB70FV-WE3
		24	0,12	384	3 010	8 x 6,7	PCV1CVM121MB70FV-WE3
	120	22	0,12	480	3 220	8 x 6,7	PCV1CVM151MB70FV-WE3
		22	0,12	480	3 150	8 x 7,7	PCV1CVM151MB80FV-WE3
	150	22	0,12	576	3 220	8 x 6,7	PCV1CVM181MB70FV-WE3
		22	0,12	576	3 890	8 x 10	PCV1CVM181MB10FV-WE3
	180	22	0,12	704	3 220	8 x 6,7	PCV1CVM221MB70FV-WE3
		18	0,12	704	3 890	8 x 10	PCV1CVM221MB10FV-WE3
		22	0,12	704	3 450	10 x 8	PCV1CVM221MC80FV-WE3
	270	16	0,12	864	4 070	8 x 12,2	PCV1CVM271MB12FV-WE3
		16	0,12	1 056	4 070	8 x 12,2	PCV1CVM331MB12FV-WE3
	330	16	0,12	1 056	4 350	10 x 10	PCV1CVM331MC10FV-WE3
		14	0,12	1 504	5 050	10 x 12,2	PCV1CVM471MC12FV-WE3
	820	14	0,12	2 624	5 050	10 x 12,2	PCV1CVM821MC12FV-WE3
	1 000	14	0,12	3 200	5 050	10 x 12,2	PCV1CVM102MC12FV-WE3

5 000h
at 105°C

- Long Life
- Low ESR
- Solid Polymer Electrolyte



ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-55 ~ +105
Voltage Range (V)	4 ~ 25
Capacitance Range (μF)	10 ~ 560
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,15$
Dissipation Factor	at 20°C, 120 Hz, see table
Leakage Current (μA)	at 20°C after 2 minutes
Temperature Stability	$Z_{105^\circ\text{C}} / Z_{20^\circ\text{C}} \leq 1,25$
	$Z_{-55^\circ\text{C}} / Z_{+20^\circ\text{C}} \leq 1,25$



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

ITEM	ENDURANCE LIFETIME L_e	DAMP HEAT (Steady State)	RESISTANCE TO SOLDERING HEAT SMT
Lifetime	5 000h	1 000h	5sec, Reflow
Leakage Current	≤ the specified value	≤ the specified value (after voltage processing)	≤ the specified value (after voltage processing)
Capacitance Change	Within ± 20% of initial value	Within ± 20% of initial value	Within ± 10% of initial value
Dissipation Factor	≤ 150% of specified value	≤ 150% of specified value	≤ 130% of specified value
ESR Change	≤ 150% of specified value	≤ 150% of specified value	≤ 130% of specified value
Condition	T_0 (upper category temperature) $U_R = 0$ $I_R = 0$	60°C (90~95% relative humidity) $U_R = 0$ $I_R = 0$	260°C

details see page 8, 13

MULTIPLIER FOR RIPPLE CURRENT (FREQUENCY COEFFICIENT)

Frequency	$120\text{Hz} \leq f < 1\text{kHz}$	$1\text{kHz} \leq f < 10\text{kHz}$	$10\text{kHz} \leq f < 100\text{kHz}$	$100\text{kHz} \leq f < 500\text{kHz}$
Factor	0,05	0,30	0,70	1,00

Multipliers for typical operating conditions.

ENVIRONMENTAL

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

U _{RDC} Rated Voltage Code	C _R Rated Capacitance	ESR _{max} Equivalent Series Resistance	tanδ Dissipation Factor	I _{leak} Leakage Current	I _R Max.Allowed Ripple Current	Size øD x L	Order code
(V)	20°C 120Hz (µF)	20°C 100kHz (mΩ)	20°C 120Hz	(µA)	≤105°C 100kHz (mA _{rms})	(mm)	Details: Page 12
4 0G	150	22	0,12	120	2 570	6,3 x 5,7	PCV0GSV151MF60FV-WE3
	270	22	0,12	216	3 220	8 x 6,7	PCV0GSV271MB70FV-WE3
	560	22	0,12	448	3 220	8 x 6,7	PCV0GSV561MB70FV-WE3
6,3 0J	120	22	0,12	152	2 570	6,3 x 5,7	PCV0JSV121MF60FV-WE3
	220	22	0,12	278	2 570	6,3 x 5,7	PCV0JSV221MF60FV-WE3
		22	0,12	278	3 220	8 x 6,7	PCV0JSV221MB70FV-WE3
	390	22	0,12	492	3 220	8 x 6,7	PCV0JSV391MB70FV-WE3
10 1A	68	30	0,12	136	2 200	6,3 x 5,7	PCV1ASV680MF60FV-WE3
	120	27	0,12	240	2 320	6,3 x 5,7	PCV1ASV121MF60FV-WE3
	150	30	0,12	300	2 760	8 x 6,7	PCV1ASV151MB70FV-WE3
16 1C	39	37	0,12	125	2 050	6,3 x 5,7	PCV1CSV390MF60FV-WE3
	68	30	0,12	218	2 200	6,3 x 5,7	PCV1CSV680MF60FV-WE3
	82	30	0,12	263	2 760	8 x 6,7	PCV1CSV820MB70FV-WE3
	120	27	0,12	384	2 900	8 x 6,7	PCV1CSV121MB70FV-WE3
	270	14	0,12	864	4 350	8 x 12,2	PCV1CSV271MB12FV-WE3
20 1D	22	60	0,10	88	1 450	6,3 x 5,7	PCV1DSV220MF60FV-WE3
	47	45	0,12	188	1 890	8 x 6,7	PCV1DSV470MB70FV-WE3
25 1E	10	60	0,10	125	1 500	6,3 x 5,7	PCV1ESV100MF60FV-WE3

GOOD TO KNOW:

Not in the mood for paper?

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product search on our website!



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



SOLID POLYMER CAPACITORS RADIAL TYPE

Solid Polymer: Order Code RADIAL	28
Solid Polymer: Technical Specifications RADIAL	29

SERIES	CODE	TYPE	TEMPERATURE	VOLTAGE	LIFETIME	INFO	
PC HCN	CN	RADIAL	105°C	2,5~35V	2 000h	Standard	30
PC HCS	CS	RADIAL	105°C	2,5~16V	5 000h	Longest Life	32
PC HEG	EG	RADIAL	105°C	16~63V	2 000h	Larger Case Sizes	34
PC HEL	EL	RADIAL	105°C	2,5~16V	2 000h	Ultra Low ESR	36
PC HEN	EN	RADIAL	105°C	2,5~16V	2 000h	Standard	38
PC HGN	GN	RADIAL	125°C	4~25V	1 000h	High Temperature	40
PC HPF	PF	RADIAL	105°C	16~200V	3 000h	Full Voltage	42
PC HPK	PK	RADIAL	125°C	16~80V	2 000h	Extended Voltage, 125°C	46



ORDER CODE SOLID POLYMER RADIAL TYPE



PC	R		1V		PF		101		M		CAC		LL		50		-		S		E3	JExxxxx
Techno- logy	Terminal Type		Rated Voltage Code		Series Code		Capa- citan- ce Code (µF)		Capacitance Tolerance		Size Code (ΦDxL)		Lead Form		Pitch		Material Code		Rubber Code		for internal use	for Specials only
PC = Polymer Capacitor	Radial	R	2,0V	OD	HCN	CN	0,1	OR1	±20%	M	D05	4,0 x 5,7	Taped	FF	2,0 mm	20	Standard	-	Standard	-		
			2,5V	OE	HCS	CS	0,47	R47	±10%	K	D07	4,0 x 7,0	Long Lead	LL	2,5 mm	25	Laminated	W	Flat Rubber	F		
			4V	OG	HEG	EG	1,0	010	+30/-10%	Q	E05	5,0 x 5,7	Cut 5,0 mm	CB	3,5 mm	35	PVC Sleeve	P	Stand-Off	S		
			6,3V	OJ	HEL	EL	2,2	2R2	preferred		E07	5,0 x 7,0	Cut 4,5 mm	CC	5,0 mm	50						
			6,8V	06	HEN	EN	47	470			S09	5,5 x 9,0	Cut 4,0 mm	CD								
			7,0V	07	HGN	GN	100	101			S11	5,5 x 11,0	Cut 3,5 mm	CE								
			7,5V	75	HPF	PF	1000	102			F05	6,3 x 5,7	Cut 3,0 mm	CF								
			10V	1A	HPK	PK					F06	6,3 x 6,7										
			12,0V	A2							F08	6,3 x 8,0										
			12,5V	1B							F09	6,3 x 9,0										
			16V	1C							F10	6,3 x 10,0										
			20V	1D							B05	8,0 x 5,7										
			25V	1E							B06	8,0 x 6,7										
			28V	L1							B07	8,0 x 7,0										
			32V	1F							B08	8,0 x 8,0										
			35V	1V							B09	8,0 x 9,0										
			40V	1G							B10	8,0 x 10,0										
			50V	1H							B11	8,0 x 11,0										
			63V	1J							BAB	8,0 x 11,5										
			80V	1K							B12	8,0 x 12,0										
			100V	2A							BAC	8,0 x 12,5										
			125V	2B							B13	8,0 x 13,0										
			160V	2C							C08	10 x 8,0										
			180V	2K							C09	10 x 9,0										
			200V	2D							C10	10 x 10,0										
											C11	10 x 11,0										
											CAB	10 x 11,5										
											C12	10 x 12,0										
											CAC	10 x 12,5										
											C13	10 x 13,0										

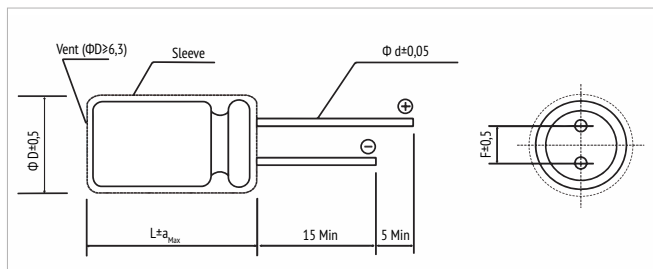
SOLID · RADIAL





DIMENSIONS FOR LOOSE, LONG-LEAD TYPE (BULK)

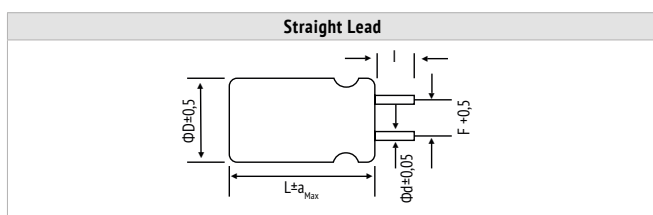
ORDER CODE: LL



L	L < 7				L ≥ 7			
Ø D	5	6,3	8		5	6,3	8	10
F	2,0	2,5	3,5		2,0	2,5	3,5	5,0
Ø d		0,5			0,5		0,6	
aMax		1,0				2,0		

in mm

DIMENSIONS FOR LOOSE, CUT LEADS (BULK)

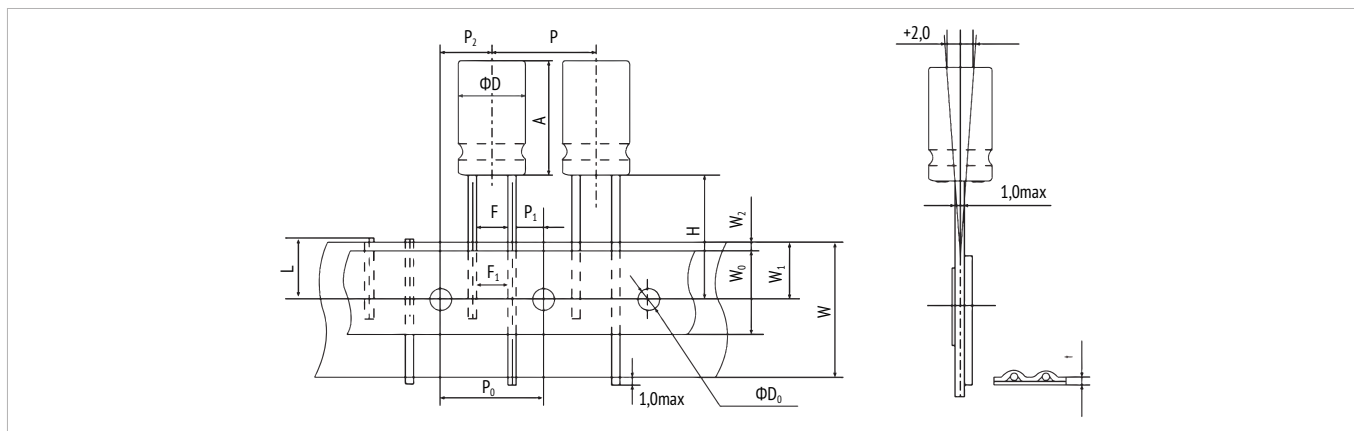


Code	CB	CC	CD	CE	CF
I	5,0 ± 0,5	4,5 ± 0,5	4,0 ± 0,5	3,5 ± 0,5	3,0 ± 0,5

preferred

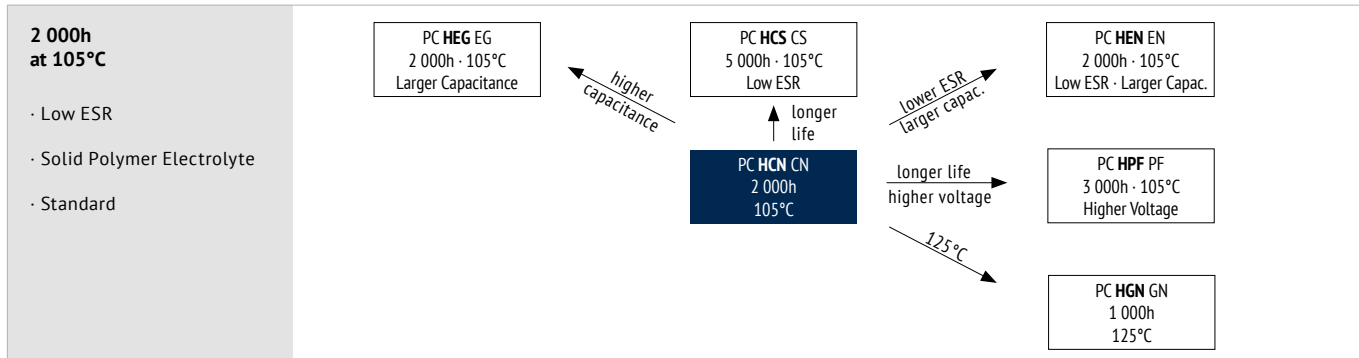
in mm

DIMENSIONS AMMOPACK TAPING



in mm

ØD	A	P	P ₀	P ₁	P ₂	F	F ₁	W	W ₀	W ₁	W ₂	H	L	ØD ₀	t
± 0,5		± 1,0	± 0,2	± 0,5	± 1,0	0,8/ -0,2	± 1,0	± 0,5	min	± 0,5	max	0,75/ -0,5	max	± 0,5	± 0,3
5	5-11	12,7	12,7	5,35	6,35	2,0	3,5	18,0	10,0	9,0	1,5	18,5	11,0	4,0	0,7
6,3	5-12	12,7	12,7	5,1	6,35	2,5	3,5	18,0	10,0	9,0	1,5	18,5	11,0	4,0	0,7
8	6-12	12,7	12,7	4,6	6,35	3,5	3,5	18,0	10,0	9,0	1,5	18,5	11,0	4,0	0,7
10	7-12,5	12,7	12,7	3,85	6,35	5,0	5,0	18,0	10,0	9,0	1,5	18,5	11,0	4,0	0,7

**ITEM CHARACTERISTICS**

Operating Temperature Range (°C)	-55 ~ +105
Voltage Range (V)	2,5 ~ 35
Capacitance Range (μF)	10 ~ 1 500
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,15$
Dissipation Factor	at 20°C, 120Hz, see table
Leakage Current (μA)	at 20°C after 2 minutes
Temperature Stability	$Z_{105°C} / Z_{20°C} \leq 1,25$ $Z_{-55°C} / Z_{+20°C} \leq 1,25$

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

ITEM	ENDURANCE LIFETIME L_e	DAMP HEAT (Steady State)	RESISTANCE TO SOLDERING HEAT RADIAL
Lifetime	2 000h	1 000h	10sec, Wave
Leakage Current	≤ the specified value	≤ the specified value (after voltage processing)	≤ the specified value (after voltage processing)
Capacitance Change	Within ± 20% of initial value	Within ± 20% of initial value	Within ± 5% of initial value
Dissipation Factor	≤ 150% of specified value	≤ 150% of specified value	≤ specified value
ESR Change	≤ 150% of specified value	≤ 150% of specified value	≤ specified value
Condition	T_0 (upper category temperature) U_R $I_R = 0$	60°C (90-95% relative humidity) $U_R = 0$ $I_R = 0$	260°C±5°C

details see page 8

MULTIPLIER FOR RIPPLE CURRENT (FREQUENCY COEFFICIENT)

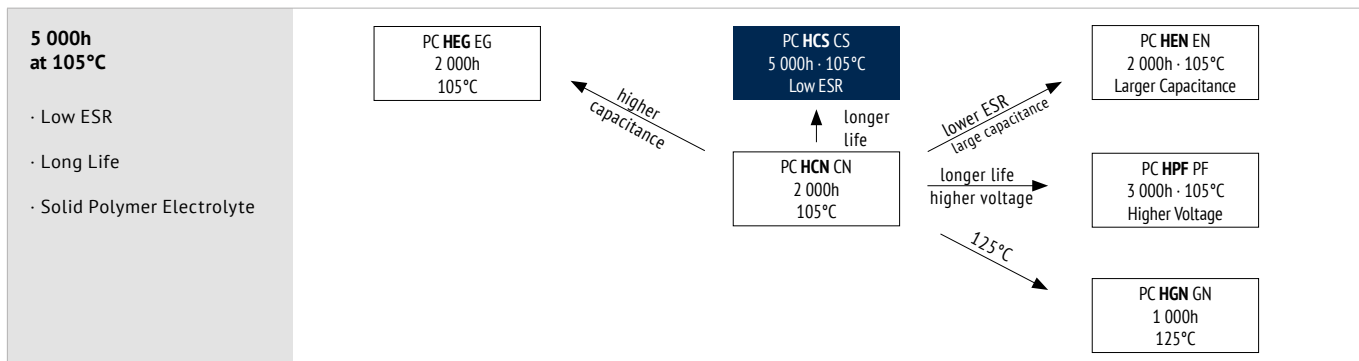
Frequency	120Hz ≤ f < 1kHz	1kHz ≤ f < 10kHz	10kHz ≤ f < 100kHz	100kHz ≤ f < 500kHz
Factor	0,05	0,30	0,70	1,00

Multipliers for typical operating conditions.

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



U _{RDC} Rated Voltage Code	C _R Rated Capacitance	ESR _{max} Equivalent Series Resistance	tanδ Dissipation Factor	I _{leak} Leakage Current	I _{max,105°C} Max. Allowed Ripple Current	Size øD x L	Order Code
(V)	(µF)	20°C 120kHz (mΩ)	20°C 120kHz	(µA)	≤105°C 100kHz (mA _{rms})	(mm)	Details: Page 28
2,5 0E	390	20	0,12	195	3 200	6,3 x 10	PCROECN391MF10◇◇25SE3
	680	12	0,12	340	5 230	8 x 8	PCROECN681MB08◇◇35SE3
	820	10	0,12	410	5 230	8 x 11,5	PCROECN821MBAB◇◇35SE3
	1 200	8	0,12	600	5 500	10 x 12,5	PCROECN122MCAC◇◇50SE3
	1 500	8	0,12	750	5 500	10 x 12,5	PCROECN152MCAC◇◇50SE3
4 0G	270	20	0,12	216	3 200	6,3 x 10	PCROGCN271MF10◇◇25SE3
	390	20	0,12	312	3 300	6,3 x 10	PCROGCN391MF10◇◇25SE3
	560	10	0,12	450	5 230	8 x 11,5	PCROGCN561MBAB◇◇35SE3
	820	8	0,12	660	5 500	10 x 12,5	PCROGCN821MCAC◇◇50SE3
	1 000	8	0,12	800	5 500	10 x 12,5	PCROGCN102MCAC◇◇50SE3
	1 200	8	0,12	960	5 500	10 x 12,5	PCROGCN122MCAC◇◇50SE3
6,3 0J	220	20	0,12	280	3 200	6,3 x 10	PCROJCN221MF10◇◇25SE3
	330	20	0,12	420	3 300	6,3 x 10	PCROJCN331MF10◇◇25SE3
	390	12	0,12	495	4 770	8 x 11,5	PCROJCN391MBAB◇◇35SE3
	470	12	0,12	595	4 770	8 x 11,5	PCROJCN471MBAB◇◇35SE3
	680	10	0,12	645	5 500	10 x 12,5	PCROJCN681MCAC◇◇50SE3
	820	10	0,12	775	5 500	10 x 12,5	PCROJCN821MCAC◇◇50SE3
	1 000	10	0,12	950	5 500	10 x 12,5	PCROJCN102MCAC◇◇50SE3
10 1A	47	25	0,12	95	2 900	6,3 x 10	PCR1ACN470MF10◇◇25SE3
	68	25	0,12	136	2 900	6,3 x 10	PCR1ACN680MF10◇◇25SE3
	100	25	0,12	200	2 900	6,3 x 10	PCR1ACN101MF10◇◇25SE3
	150	25	0,12	300	2 900	6,3 x 10	PCR1ACN151MF10◇◇25SE3
	220	25	0,12	440	2 900	6,3 x 10	PCR1ACN221MF10◇◇25SE3
		10	0,12	330	5 500	10 x 12,5	PCR1ACN221MCAC◇◇50SE3
	270	14	0,12	540	4 420	8 x 11,5	PCR1ACN271MBAB◇◇35SE3
	330	14	0,12	660	4 420	8 x 11,5	PCR1ACN331MBAB◇◇35SE3
	470	12	0,12	705	5 500	10 x 12,5	PCR1ACN471MCAC◇◇50SE3
	560	10	0,12	840	5 300	10 x 12,5	PCR1ACN561MCAC◇◇50SE3
16 1C	100	24	0,12	320	4 360	8 x 11,5	PCR1CCN101MBAB◇◇35SE3
		16	0,12	480	4 000	8 x 8	PCR1CCN151MB08◇◇35SE3
	150	16	0,12	480	4 360	8 x 11,5	PCR1CCN151MBAB◇◇35SE3
		10	0,12	360	5 500	10 x 12,5	PCR1CCN151MCAC◇◇50SE3
	180	16	0,12	580	4 360	8 x 11,5	PCR1CCN181MBAB◇◇35SE3
	220	16	0,12	705	4 000	8 x 8	PCR1CCN221MB08◇◇35SE3
		16	0,12	705	4 360	8 x 11,5	PCR1CCN221MBAB◇◇35SE3
	270	14	0,12	650	5 050	10 x 12,5	PCR1CCN271MCAC◇◇50SE3
	330	14	0,12	795	5 050	10 x 12,5	PCR1CCN331MCAC◇◇50SE3
20 1D	33	48	0,12	135	2 200	6,3 x 10	PCR1DCN330MF10◇◇25SE3
	47	30	0,12	190	2 800	8 x 8	PCR1DCN470MB08◇◇35SE3
		24	0,12	400	3 320	8 x 11,5	PCR1DCN101MBAB◇◇35SE3
	100	20	0,12	400	4 320	10 x 12,5	PCR1DCN101MCAC◇◇50SE3
	150	20	0,12	600	4 320	10 x 12,5	PCR1DCN151MCAC◇◇50SE3
25 1E	10	50	0,12	50	2 000	6,3 x 8	PCR1ECN100MF08◇◇25SE3
	15	48	0,12	75	2 200	6,3 x 10	PCR1ECN150MF10◇◇25SE3
	22	30	0,12	110	2 800	8 x 8	PCR1ECN220MB08◇◇35SE3
	33	24	0,12	165	3 600	8 x 11,5	PCR1ECN330MBAB◇◇35SE3
	47	24	0,12	235	3 320	8 x 11,5	PCR1ECN470MBAB◇◇35SE3
	56	24	0,12	280	3 320	8 x 11,5	PCR1ECN560MBAB◇◇35SE3
	68	20	0,12	340	3 800	10 x 12,5	PCR1ECN680MCAC◇◇50SE3
	100	20	0,12	500	4 320	10 x 12,5	PCR1ECN101MCAC◇◇50SE3
35 1V	10	50	0,12	175	2 300	8 x 8	PCR1VCN100MB08◇◇35SE3
	18	34	0,12	315	2 830	8 x 11,5	PCR1VCN180MBAB◇◇35SE3
	33	30	0,12	580	3 270	10 x 12,5	PCR1VCN330MCAC◇◇50SE3



ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-55 ~ +105
Voltage Range (V)	2,5 ~ 100
Capacitance Range (μF)	47 ~ 2 700
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,15$
Dissipation Factor	at 20°C, 120Hz, see table
Leakage Current (μA)	at 20°C after 2 minutes
Temperature Stability	$Z_{105°C} / Z_{20°C} \leq 1,25$ $Z_{-55°C} / Z_{+20°C} \leq 1,25$



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

ITEM	ENDURANCE LIFETIME L_e	DAMP HEAT (Steady State)	RESISTANCE TO SOLDERING HEAT RADIAL
Lifetime	5 000h	1 000h	10sec, Wave
Leakage Current	≤ the specified value	≤ the specified value (after voltage processing)	≤ the specified value (after voltage processing)
Capacitance Change	Within ± 20% of initial value	Within ± 20% of initial value	Within ± 5% of initial value
Dissipation Factor	≤ 150% of specified value	≤ 150% of specified value	≤ specified value
ESR Change	≤ 150% of specified value	≤ 150% of specified value	≤ specified value
Condition	T_0 (upper category temperature) U_R $I_R = 0$	60°C (90-95% relative humidity) $U_R = 0$ $I_R = 0$	260°C±5°C

details see page 8

MULTIPLIER FOR RIPPLE CURRENT (FREQUENCY COEFFICIENT)

Frequency	120Hz ≤ f < 1kHz	1kHz ≤ f < 10kHz	10kHz ≤ f < 100kHz	100kHz ≤ f < 500kHz
Factor	0,05	0,30	0,70	1,00

Multipliers for typical operating conditions.

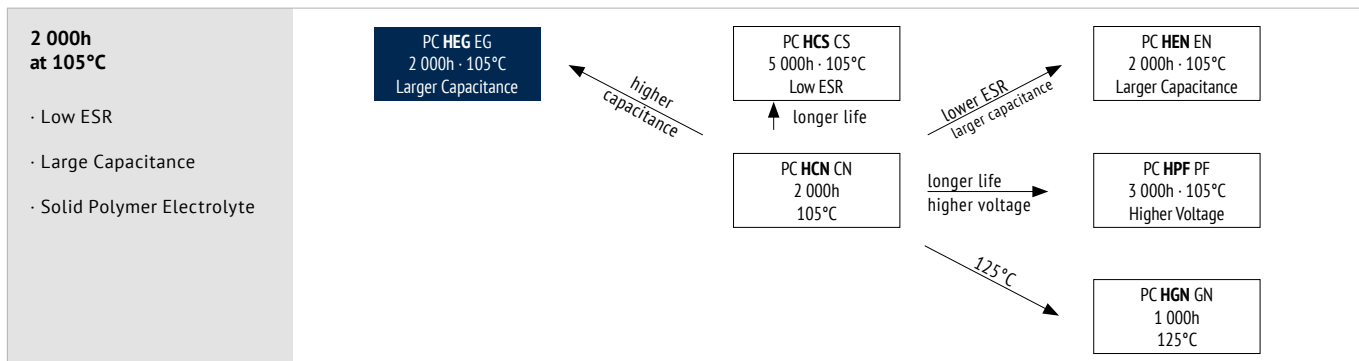
ENVIRONMENTAL

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





U _{RDC} Rated Voltage Code	C _R Rated Capacitance	ESR _{max} Equivalent Series Resistance	tanδ Dissipation Factor	I _{leak} Leakage Current	I _{max,105°C} Max.Allowed Ripple Current	Size øD x L	Order Code
(V)	(µF)	(mΩ)	20°C 120kHz	(µA)	≤105°C 100kHz	(mm)	Details: Page 28
2,5 0E	330	7	0,12	500	5 600	6,3 x 8	PCROECS331MF08♦♦25SE3
	560	7	0,12	500	5 600	6,3 x 8	PCROECS561MF08♦♦25SE3
	820	7	0,12	500	5 600	6,3 x 8	PCROECS821MF08♦♦25SE3
		7	0,12	500	6 100	8 x 8	PCROECS821MB08♦♦35SE3
	1 000	7	0,12	500	6 100	8 x 8	PCROECS102MB08♦♦35SE3
	2 700	10	0,12	1 350	5 560	10 x 12,5	PCROECS272MCAC♦♦50SE3
4 0G	560	8	0,12	500	5 600	6,3 x 8	PCROGCS561MF08♦♦25SE3
		8	0,12	500	6 100	8 x 8	PCROGCS561MB08♦♦35SE3
	680	8	0,12	545	6 100	8 x 11,5	PCROGCS681MBAB♦♦35SE3
	820	8	0,12	660	6 640	8 x 11,5	PCROGCS821MBAB♦♦35SE3
6,3 0J	390	15	0,12	495	3 900	8 x 8	PCROJCS391MB08♦♦35SE3
	470	10	0,12	595	5 600	6,3 x 8	PCROJCS471MF08♦♦25SE3
		10	0,12	595	5 700	8 x 8	PCROJCS471MB08♦♦35SE3
		10	0,12	706	5 600	6,3 x 8	PCROJCS561MF08♦♦25SE3
	560	8	0,12	706	6 100	8 x 8	PCROJCS561MB08♦♦35SE3
		8	0,12	860	6 640	10 x 12,5	PCROJCS681MCAC♦♦50SE3
	1 500	8	0,12	1 890	5 560	10 x 12,5	PCROJCS152MCAC♦♦50SE3
	2 200	8	0,12	2 773	5 560	10 x 12,5	PCROJCS222MCAC♦♦50SE3
10 1A	330	10	0,12	660	5 000	8 x 8	PCR1ACS331MB08♦♦35SE3
	470	10	0,12	940	5 100	8 x 11,5	PCR1ACS471MBAB♦♦35SE3
	560	10	0,12	1 120	5 100	8 x 11,5	PCR1ACS561MBAB♦♦35SE3
	680	10	0,12	1 360	5 650	8 x 11,5	PCR1ACS681MBAB♦♦35SE3
16 1C	100	35	0,12	500	4 680	6,3 x 8	PCR1CCS101MF08♦♦25SE3
	180	10	0,12	576	5 000	8 x 8	PCR1CCS181MB08♦♦35SE3
	270	10	0,12	865	5 000	8 x 8	PCR1CCS271MB08♦♦35SE3
	470	10	0,12	1 505	6 100	10 x 12,5	PCR1CCS471MCAC♦♦50SE3
20 1D	150	25	0,12	600	3 200	6,3 x 8	PCR1DCS151MF08♦♦25SE3
	560	10	0,12	2 240	6 100	10 x 12,5	PCR1DCS561MCAC♦♦50SE3
25 1E	470	20	0,12	1 175	4 000	8 x 11,5	PCR1ECS471MBAB♦♦35SE3
		18	0,12	2 350	3 200	10 x 12,5	PCR1ECS471MCAC♦♦50SE3
	1 000	20	0,12	5 000	5 050	10 x 16	PCR1ECS102MC16♦♦50SE3
	1 500	20	0,12	7 500	4 000	10 x 20	PCR1ECS152MC20♦♦50SE3
35 1V	100	35	0,12	700	2 350	6,3 x 8	PCR1VCS101MF80♦♦25SE3
	220	20	0,12	1 540	4 500	8 x 11,5	PCR1VCS221MBAB♦♦35SE3
	470	18	0,12	3 290	3 200	10 x 12,5	PCR1VCS471MCAC♦♦50SE3
		18	0,12	3 290	5 000	10 x 16	PCR1VCS471MC16♦♦50SE3
	1 000	19	0,12	7 000	5 000	10 x 20	PCR1VCS102MC20♦♦50SE3
50 1H	100	25	0,12	1 000	5 000	8 x 11,5	PCR1HCS101MBAB♦♦35SE3
	220	20	0,12	2 200	4 300	10 x 12,5	PCR1HCS221MCAC♦♦50SE3
	330	20	0,12	3 300	5 000	10 x 16	PCR1HCS331MC16♦♦50SE3
	470	30	0,12	4 700	4 300	10 x 20	PCR1HCS471MC20♦♦50SE3
63 1J	220	30	0,12	2 772	4 300	10 x 20	PCR1JCS221MC20♦♦50SE3
100 2A	47	30	0,12	940	3 600	10 x 12,5	PCR2ACS470MCAC♦♦50SE3

**ITEM CHARACTERISTICS**

Operating Temperature Range (°C)	-55 ~ +105
Voltage Range (V)	16 ~ 63
Capacitance Range (μF)	150 ~ 2 200
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,15$
Dissipation Factor	at 20°C, 120Hz, see table
Leakage Current (μA)	at 20°C after 2 minutes
Temperature Stability	$Z_{105°C} / Z_{20°C} \leq 1,25$ $Z_{-55°C} / Z_{+20°C} \leq 1,25$

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

ITEM	ENDURANCE LIFETIME L_e	DAMP HEAT (Steady State)	RESISTANCE TO SOLDERING HEAT RADIAL
Lifetime	2 000h	1 000h	10sec, Wave
Leakage Current	≤ the specified value	≤ the specified value (after voltage processing)	≤ the specified value (after voltage processing)
Capacitance Change	Within ± 20% of initial value	Within ± 20% of initial value	Within ± 5% of initial value
Dissipation Factor	≤ 150% of specified value	≤ 150% of specified value	≤ specified value
ESR Change	≤ 150% of specified value	≤ 150% of specified value	≤ specified value
Condition	T_0 (upper category temperature) U_R $I_R = 0$	60°C (90-95% relative humidity) $U_R = 0$ $I_R = 0$	260°C±5°C

details see page 8

MULTIPLIER FOR RIPPLE CURRENT (FREQUENCY COEFFICIENT)

Frequency	120Hz ≤ f < 1kHz	1kHz ≤ f < 10kHz	10kHz ≤ f < 100kHz	100kHz ≤ f < 500kHz
Factor	0,05	0,30	0,70	1,00

Multipliers for typical operating conditions.

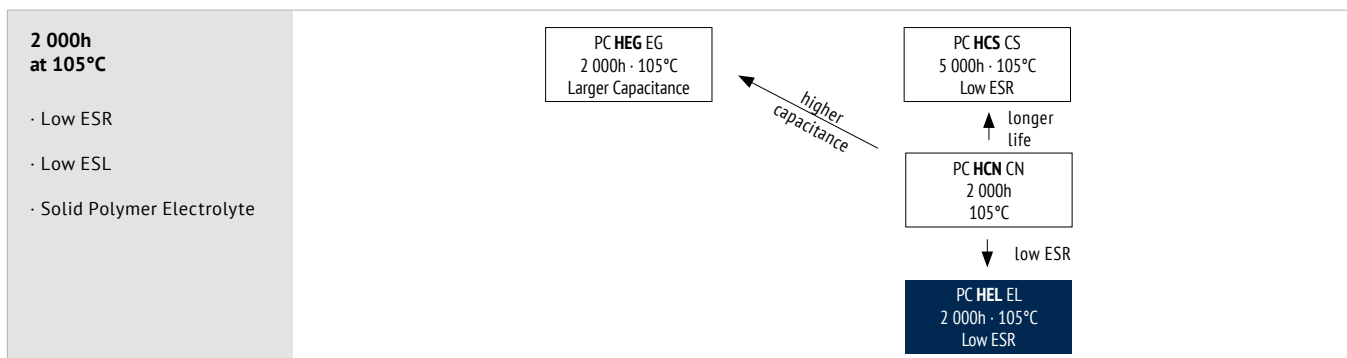
ENVIRONMENTALThe products are RoHS, WEEE and REACH compliant. The detailed version please see separate "Environmental Certificates" document or www.jianghai-europe.com



U _{RDC} Rated Voltage Code	C _R Rated Capacitance	ESR _{max} Equivalent Series Resistance	tanδ Dissipation Factor	I _{leak} Leakage Current	I _{max,105°C} Max.Allowed Ripple Current	Size øD x L	Order Code
(V)	(µF)	(mΩ)	(20°C 120kHz)	(µA)	(mA _{rms})	(mm)	Details: Page 28
16 1C	820	14	0,12	2 624	4 950	8 x 14	PCR1CEG821MB14◇◇35SE3
	1 000	14	0,12	3 200	4 950	8 x 14	PCR1CEG102MB14◇◇35SE3
	1 200	12	0,12	3 840	6 100	10 x 14	PCR1CEG122MC14◇◇50SE3
	1 500	10	0,12	4 800	6 100	10 x 14	PCR1CEG152MC14◇◇50SE3
	1 800	10	0,12	5 760	7 000	10 x 16	PCR1CEG182MC16◇◇50SE3
	2 200	10	0,12	7 040	7 000	10 x 16	PCR1CEG222MC16◇◇50SE3
20 1D	560	18	0,12	2 240	4 350	8 x 14	PCR1DEG561MB14◇◇35SE3
	680	18	0,12	2 720	4 350	8 x 14	PCR1DEG681MB14◇◇35SE3
	820	16	0,12	3 280	4 650	10 x 14	PCR1DEG821MC14◇◇50SE3
	1 000	14	0,12	4 000	5 100	10 x 14	PCR1DEG102MC14◇◇50SE3
	1 200	14	0,12	4 800	5 000	10 x 16	PCR1DEG122MC16◇◇50SE3
25 1E	560	16	0,12	2 800	4 600	8 x 14	PCR1EEG561MB14◇◇35SE3
	680	16	0,12	3 400	4 650	8 x 16	PCR1EEG681MB16◇◇35SE3
	820	14	0,12	4 100	5 100	10 x 14	PCR1EEG821MC14◇◇50SE3
	1 000	14	0,12	5 000	5 100	10 x 14	PCR1EEG102MC14◇◇50SE3
	1 200	14	0,12	6 000	5 910	10 x 16	PCR1EEG122MC16◇◇50SE3
32 1F	330	20	0,12	2 112	4 000	8 x 14	PCR1FEG331MB14◇◇35SE3
	390	18	0,12	2 496	4 350	8 x 14	PCR1FEG391MB14◇◇35SE3
	470	18	0,12	3 008	4 500	10 x 14	PCR1FEG471MC14◇◇50SE3
	560	18	0,12	3 584	4 500	10 x 14	PCR1FEG561MC14◇◇50SE3
	680	18	0,12	4 352	4 690	10 x 16	PCR1FEG681MC16◇◇50SE3
35 1V	270	20	0,12	1 890	4 000	8 x 14	PCR1VEG271MB14◇◇35SE3
	330	20	0,12	2 310	4 100	8 x 16	PCR1VEG331MB16◇◇35SE3
		22	0,12	2 310	4 100	10 x 14	PCR1VEG331MC14◇◇50SE3
	390	20	0,12	2 730	4 300	10 x 14	PCR1VEG391MC14◇◇50SE3
	470	18	0,12	3 290	4 500	10 x 14	PCR1VEG471MC14◇◇50SE3
	560	18	0,12	3 920	4 690	10 x 16	PCR1VEG561MC16◇◇50SE3
	680	18	0,12	4 760	4 690	10 x 16	PCR1VEG681MC16◇◇50SE3
40 1G	270	20	0,12	2 160	4 000	8 x 14	PCR1GEG271MB14◇◇35SE3
	330	18	0,12	2 640	4 500	10 x 14	PCR1GEG331MC14◇◇50SE3
	390	18	0,12	3 120	4 500	10 x 14	PCR1GEG391MC14◇◇50SE3
	470	18	0,12	3 760	4 690	10 x 16	PCR1GEG471MC16◇◇50SE3
50 1H	180	22	0,12	1 800	4 100	10 x 14	PCR1HEG181MC14◇◇50SE3
	220	20	0,12	2 200	4 300	10 x 14	PCR1HEG221MC14◇◇50SE3
	270	18	0,12	2 700	4 500	10 x 14	PCR1HEG271MC14◇◇50SE3
	330	20	0,12	3 300	4 950	10 x 16	PCR1HEG331MC16◇◇50SE3
63 1J	150	22	0,12	1 890	4 100	10 x 16	PCR1JEG151MC16◇◇50SE3
	180	20	0,12	2 268	4 950	10 x 16	PCR1JEG181MC16◇◇50SE3

◇◇ = pin style & length

SOLID · RADIAL



ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-55 ~ +105
Voltage Range (V)	2,5 ~ 16
Capacitance Range (μF)	100 ~ 1 0000
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,15$
Dissipation Factor	at 20°C, 120Hz, see table
Leakage Current (μA)	at 20°C after 2 minutes
Temperature Stability	$Z_{105°C} / Z_{20°C} \leq 1,25$ $Z_{-55°C} / Z_{+20°C} \leq 1,25$

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

ITEM	ENDURANCE LIFETIME L_e	DAMP HEAT (Steady State)	RESISTANCE TO SOLDERING HEAT RADIAL
Lifetime	2 000h	1 000h	10sec, Wave
Leakage Current	$\leq$ the specified value	$\leq$ the specified value (after voltage processing)	$\leq$ the specified value (after voltage processing)
Capacitance Change	Within $\pm 20\%$ of initial value	Within $\pm 20\%$ of initial value	Within $\pm 5\%$ of initial value
Dissipation Factor	$\leq 150\%$ of specified value	$\leq 150\%$ of specified value	$\leq$ specified value
ESR Change	$\leq 150\%$ of specified value	$\leq 150\%$ of specified value	$\leq$ specified value
Condition	T_0 (upper category temperature) U_R $I_R = 0$	60°C (90-95% relative humidity) $U_R = 0$ $I_R = 0$	260°C $\pm 5^\circ$ C

details see page 8

MULTIPLIER FOR RIPPLE CURRENT (FREQUENCY COEFFICIENT)

Frequency	120Hz $\leq f < 1$ kHz	1kHz $\leq f < 10$ kHz	10kHz $\leq f < 100$ kHz	100kHz $\leq f < 500$ kHz
Factor	0,05	0,30	0,70	1,00

Multipliers for typical operating conditions.

ENVIRONMENTAL

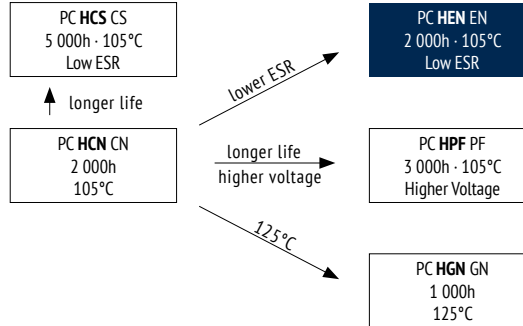
The products are RoHS, WEEE and REACH compliant. The detailed version please see separate "Environmental Certificates" document or www.jianghai-europe.com



U _{RDC} Rated Voltage Code	C _R Rated Capacitance	ESR _{max} Equivalent Series Resistance	tanδ Dissipation Factor	I _{leak} Leakage Current	I _{max,105°C} Max.Allowed Ripple Current	Size øD x L	Order Code
(V)	(µF)	(mΩ)	20°C 120kHz	20°C 120kHz	≤105°C 100kHz	(mm)	Details: Page 28
2,5 0E	330	7	0,10	500	5 600	6,3 x 8,0	PCR0EEL331MF08♦♦25SE3
	470	7	0,10	500	5 600	6,3 x 8,0	PCR0EEL471MF08♦♦25SE3
	560	7	0,10	500	5 600	6,3 x 8,0	PCR0EEL561MF08♦♦25SE3
	820	7	0,10	500	5 600	6,3 x 8,0	PCR0EEL821MF08♦♦25SE3
4 0G	560	7	0,10	500	5 600	6,3 x 8,0	PCR0GEL561MF08♦♦25SE3
6,3 0J	270	11	0,10	341	3 700	5,0 x 8,0	PCR0JEL271ME08♦♦20SE3
	330	11	0,10	420	3 700	5,0 x 8,0	PCR0JEL331ME08♦♦20SE3
	390	11	0,10	495	3 700	5,0 x 8,0	PCR0JEL391ME08♦♦20SE3
	470	11	0,10	595	3 700	5,0 x 11,0	PCR0JEL471ME11♦♦20SE3
		8	0,10	595	5 000	6,3 x 8,0	PCR0JEL471MF08♦♦25SE3
	560	8	0,10	710	5 000	6,3 x 8,0	PCR0JEL561MF08♦♦25SE3
	680	8	0,10	860	5 000	6,3 x 8,0	PCR0JEL681MF08♦♦25SE3
	820	8	0,10	1 035	5 000	6,3 x 9,0	PCR0JEL821MF09♦♦25SE3
	1 000	8	0,10	1 260	5 000	6,3 x 11,0	PCR0JEL102MF11♦♦25SE3
6,8 06	270	11	0,10	370	3 700	5,0 x 8,0	PCR06EL271ME08♦♦20SE3
	330	11	0,10	450	3 700	5,0 x 8,0	PCR06EL331ME08♦♦20SE3
	390	11	0,10	531	3 700	5,0 x 9,0	PCR06EL391ME09♦♦20SE3
	470	8	0,10	640	5 000	6,3 x 8,0	PCR06EL471MF08♦♦25SE3
	560	8	0,10	765	5 000	6,3 x 8,0	PCR06EL561MF08♦♦25SE3
	680	8	0,10	925	5 000	6,3 x 9,0	PCR06EL681MF09♦♦25SE3
7 07	270	11	0,10	380	3 700	5,0 x 8,0	PCR07EL271ME08♦♦20SE3
	330	11	0,10	465	3 700	5,0 x 8,0	PCR07EL331ME08♦♦20SE3
	390	11	0,10	550	3 700	5,0 x 9,0	PCR07EL391ME09♦♦20SE3
	470	8	0,10	660	5 000	6,3 x 8,0	PCR07EL471MF08♦♦25SE3
	560	8	0,10	785	5 000	6,3 x 8,0	PCR07EL561MF08♦♦25SE3
	680	8	0,10	955	5 000	6,3 x 9,0	PCR07EL681MF09♦♦25SE3
7,5 75	270	11	0,10	405	3 700	5,0 x 8,0	PCR75EL271ME08♦♦20SE3
	330	11	0,10	495	3 700	5,0 x 8,0	PCR75EL331ME08♦♦20SE3
	390	11	0,10	585	3 700	5,0 x 9,0	PCR75EL391ME09♦♦20SE3
	470	11	0,10	705	3 100	5,0 x 10,0	PCR75EL471ME10♦♦20SE3
		8	0,10	705	5 000	6,3 x 8,0	PCR75EL471MF08♦♦25SE3
	500	11	0,10	750	3 100	5,0 x 10,0	PCR75EL501ME10♦♦20SE3
	560	8	0,10	840	5 000	6,3 x 8,0	PCR75EL561MF08♦♦25SE3
	680	8	0,10	1 020	5 000	6,3 x 9,0	PCR75EL681MF09♦♦25SE3
10 1A	100	24	0,10	200	2 490	5,0 x 8,0	PCR1AEL101ME08♦♦20SE3
	120	24	0,10	240	2 490	5,0 x 8,0	PCR1AEL121ME08♦♦20SE3
	220	10	0,10	500	4 680	6,3 x 8,0	PCR1AEL221MF08♦♦25SE3
	270	10	0,10	540	4 680	6,3 x 8,0	PCR1AEL271MF08♦♦25SE3
	330	15	0,10	660	3 600	6,3 x 9,0	PCR1AEL331MF09♦♦25SE3
	470	12	0,10	940	4 100	6,3 x 9,0	PCR1AEL471MF09♦♦25SE3
	560	12	0,10	1 120	4 100	6,3 x 11,0	PCR1AEL561MF11♦♦25SE3
	680	15	0,10	1 360	3 600	6,3 x 11,0	PCR1AEL681MF11♦♦25SE3
16 1C	220	15	0,12	705	3 000	5,0 x 11,0	PCR1CEL221ME11♦♦20SE3
	270	15	0,12	865	3 000	5,0 x 11,0	PCR1CEL271ME11♦♦20SE3
		15	0,12	865	3 600	6,3 x 9,0	PCR1CEL271MF09♦♦25SE3
	330	15	0,12	1 060	3 600	6,3 x 9,0	PCR1CEL331MF09♦♦25SE3
	390	15	0,12	1 250	3 600	6,3 x 12,0	PCR1CEL391MF12♦♦25SE3
	470	15	0,12	1 505	3 600	6,3 x 12,0	PCR1CEL471MF12♦♦25SE3

**2 000h
at 105°C**

- Low ESR
- Larger Capacitance
- Solid Polymer Electrolyte

**ITEM CHARACTERISTICS**

Operating Temperature Range (°C)	-55 ~ +105
Voltage Range (V)	2,5 ~ 16
Capacitance Range (μF)	180 ~ 2 700
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,15$
Dissipation Factor	at 20°C, 120Hz, see table
Leakage Current (μA)	at 20°C after 2 minutes
Temperature Stability	$Z_{105°C} / Z_{20°C} \leq 1,25$
	$Z_{-55°C} / Z_{+20°C} \leq 1,25$



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

ITEM	ENDURANCE LIFETIME L_e	DAMP HEAT (Steady State)	RESISTANCE TO SOLDERING HEAT RADIAL
Lifetime	2 000h	1 000h	10sec, Wave
Leakage Current	≤ the specified value	≤ the specified value (after voltage processing)	≤ the specified value (after voltage processing)
Capacitance Change	Within ± 20% of initial value	Within ± 20% of initial value	Within ± 5% of initial value
Dissipation Factor	≤ 150% of specified value	≤ 150% of specified value	≤ specified value
ESR Change	≤ 150% of specified value	≤ 150% of specified value	≤ specified value
Condition	T_0 (upper category temperature) U_R $I_R = 0$	60°C (90-95% relative humidity) $U_R = 0$ $I_R = 0$	260°C±5°C

details see page 8

MULTIPLIER FOR RIPPLE CURRENT (FREQUENCY COEFFICIENT)

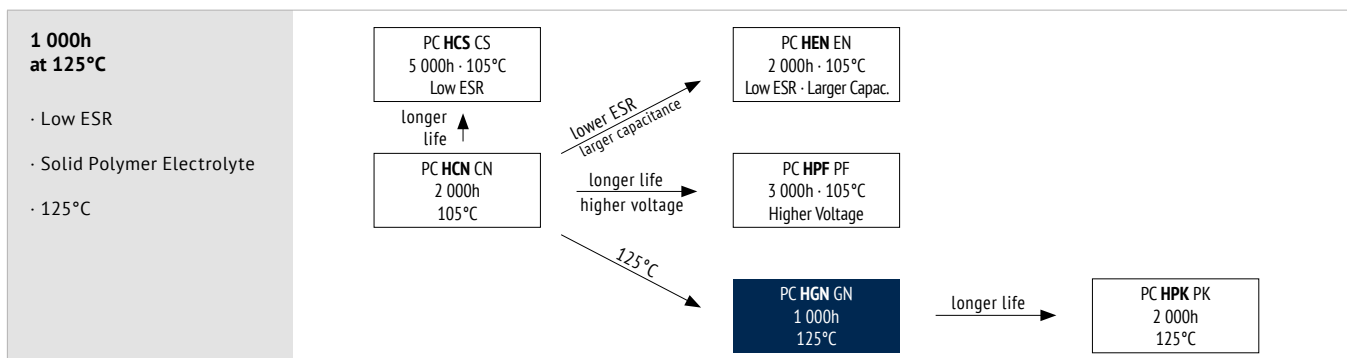
Frequency	120Hz ≤ f < 1kHz	1kHz ≤ f < 10kHz	10kHz ≤ f < 100kHz	100kHz ≤ f < 500kHz
Factor	0,05	0,30	0,70	1,00

Multipliers for typical operating conditions.

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



U _{RDC} Rated Voltage Code	C _R Rated Capacitance	ESR _{max} Equivalent Series Resistance	tanδ Dissipation Factor	I _{leak} Leakage Current	I _{max, 105°C} Max. Allowed Ripple Current	Size øD x L	Order Code
(V)	(µF)	20°C 120Hz (mΩ)	20°C 120Hz	(µA)	≤105°C 100kHz (mA _{RMS})	(mm)	Details: Page 28
2,5 0E	680	7	0,08	340	5 700	8 x 11,5	PCROEEN681MBAB◇◇35SE3
	820	7	0,08	410	6 100	8 x 11,5	PCROEEN821MBAB◇◇35SE3
	1 000	7	0,08	500	6 100	8 x 11,5	PCROEEN102MBAB◇◇35SE3
		6	0,08	500	6 640	10 x 12,5	PCROEEN102MCAC◇◇50SE3
	1 200	6	0,08	600	6 640	10 x 12,5	PCROEEN122MCAC◇◇50SE3
	1 500	7	0,08	750	6 100	8 x 11,5	PCROEEN152MBAB◇◇35SE3
		7	0,08	750	6 100	10 x 12,5	PCROEEN152MCAC◇◇50SE3
	2 700	7	0,08	1 350	6 100	10 x 12,5	PCROEEN272MCAC◇◇50SE3
4 0G	560	7	0,08	450	6 100	8 x 11,5	PCROGEN561MBAB◇◇35SE3
	680	7	0,08	550	6 100	8 x 11,5	PCROGEN681MBAB◇◇35SE3
	820	7	0,08	660	6 100	8 x 11,5	PCROGEN821MBAB◇◇35SE3
		6	0,08	660	6 640	10 x 12,5	PCROGEN821MCAC◇◇50SE3
	1 000	7	0,08	800	6 100	8 x 11,5	PCROGEN102MBAB◇◇35SE3
		6	0,08	800	6 640	10 x 12,5	PCROGEN102MCAC◇◇50SE3
	1 200	7	0,08	960	6 100	8 x 11,5	PCROGEN122MBAB◇◇35SE3
		7	0,08	960	6 100	10 x 12,5	PCROGEN122MCAC◇◇50SE3
	1 800	7	0,08	1 440	6 100	10 x 12,5	PCROGEN182MCAC◇◇50SE3
	2 200	7	0,08	1 760	6 100	10 x 12,5	PCROGEN222MCAC◇◇50SE3
6,3 0J	330	7	0,08	420	5 700	8 x 11,5	PCROJEN331MBAB◇◇35SE3
	390	7	0,08	495	5 700	8 x 11,5	PCROJEN391MBAB◇◇35SE3
	470	7	0,08	595	5 700	8 x 11,5	PCROJEN471MBAB◇◇35SE3
	560	7	0,08	706	5 700	8 x 11,5	PCROJEN561MBAB◇◇35SE3
	680	7	0,08	860	5 700	8 x 11,5	PCROJEN681MBAB◇◇35SE3
		7	0,08	860	6 640	10 x 12,5	PCROJEN681MCAC◇◇50SE3
	820	7	0,08	1 035	5 700	8 x 11,5	PCROJEN821MBAB◇◇35SE3
		7	0,08	1 035	6 640	10 x 12,5	PCROJEN821MCAC◇◇50SE3
	1 000	7	0,08	1 260	5 700	8 x 11,5	PCROJEN102MBAB◇◇35SE3
		7	0,08	1 260	6 100	10 x 12,5	PCROJEN102MCAC◇◇50SE3
	1 500	7	0,08	1 890	5 700	8 x 11,5	PCROJEN152MBAB◇◇35SE3
		10	0,08	1 890	5 560	10 x 12,5	PCROJEN152MCAC◇◇50SE3
	2 200	10	0,08	2 775	5 560	10 x 12,5	PCROJEN222MCAC◇◇50SE3
10 1A	270	8	0,08	540	5 650	8 x 11,5	PCR1AEN271MBAB◇◇35SE3
	390	8	0,08	780	5 650	8 x 11,5	PCR1AEN391MBAB◇◇35SE3
	470	8	0,08	940	5 650	8 x 11,5	PCR1AEN471MBAB◇◇35SE3
		7	0,08	940	6 100	10 x 12,5	PCR1AEN471MCAC◇◇50SE3
	560	8	0,08	1 120	5 650	8 x 11,5	PCR1AEN561MBAB◇◇35SE3
		7	0,08	1 120	6 100	10 x 12,5	PCR1AEN561MCAC◇◇50SE3
	680	8	0,08	1 360	5 650	8 x 11,5	PCR1AEN681MBAB◇◇35SE3
		7	0,08	1 360	6 100	10 x 12,5	PCR1AEN681MCAC◇◇50SE3
	1 000	8	0,08	2 000	6 100	10 x 12,5	PCR1AEN102MCAC◇◇50SE3
16 1C	180	11	0,08	580	5 100	8 x 11,5	PCR1CEN181MBAB◇◇35SE3
	270	10	0,08	865	5 100	8 x 11,5	PCR1CEN271MBAB◇◇35SE3
	330	10	0,08	1 060	5 100	8 x 11,5	PCR1CEN331MBAB◇◇35SE3
		10	0,08	1 060	6 100	10 x 12,5	PCR1CEN331MCAC◇◇50SE3
	470	10	0,08	1 505	6 100	10 x 12,5	PCR1CEN471MCAC◇◇50SE3
	560	10	0,12	1 795	6 100	10 x 12,5	PCR1CEN561MCAC◇◇50SE3
	680	10	0,12	2 180	6 100	10 x 12,5	PCR1CEN681MCAC◇◇50SE3
	820	10	0,12	2 625	6 100	10 x 12,5	PCR1CEN821MCAC◇◇50SE3
	1 000	10	0,12	3 200	6 100	10 x 12,5	PCR1CEN102MCAC◇◇50SE3

**ITEM CHARACTERISTICS**

Operating Temperature Range (°C)	-55 ~ +125
Voltage Range (V)	4 ~ 25
Capacitance Range (μF)	47 ~ 1 200
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,15$
Dissipation Factor	at 20°C, 120Hz, see table
Leakage Current (μA)	at 20°C after 2 minutes
Temperature Stability	$Z_{125°C} / Z_{20°C} \leq 1,25$ $Z_{-55°C} / Z_{+20°C} \leq 1,25$

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

ITEM	ENDURANCE LIFETIME L_e	DAMP HEAT (Steady State)	RESISTANCE TO SOLDERING HEAT RADIAL
Lifetime	1 000h	1 000h	10sec, Wave
Leakage Current	≤ the specified value	≤ the specified value (after voltage processing)	≤ the specified value (after voltage processing)
Capacitance Change	Within ± 20% of initial value	Within ± 20% of initial value	Within ± 5% of initial value
Dissipation Factor	≤ 200% of specified value	≤ 150% of specified value	≤ specified value
ESR Change	≤ 200% of specified value	≤ 150% of specified value	≤ specified value
Condition	T_0 (upper category temperature) U_R $I_R = 0$	60°C (90-95% relative humidity) $U_R = 0$ $I_R = 0$	260°C±5°C

details see page 8

MULTIPLIER FOR RIPPLE CURRENT (FREQUENCY COEFFICIENT)

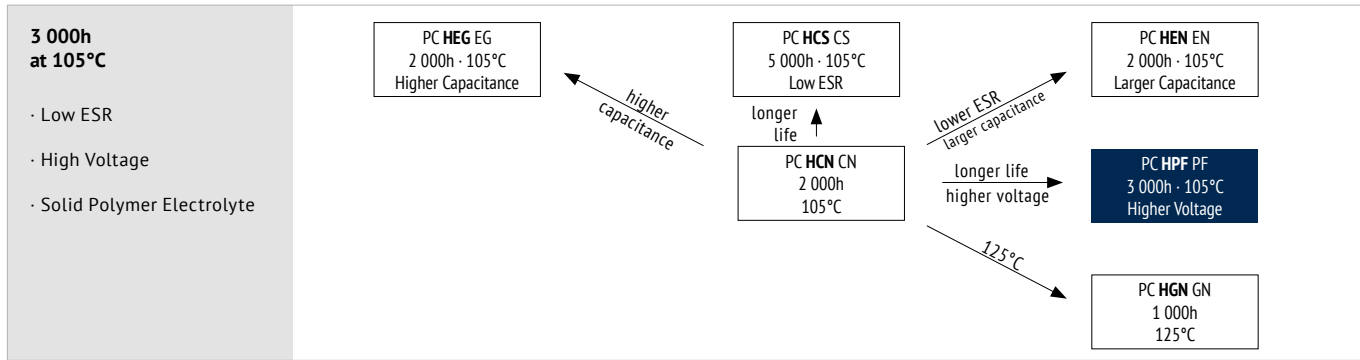
Frequency	120Hz ≤ f < 1kHz	1kHz ≤ f < 10kHz	10kHz ≤ f < 100kHz	100kHz ≤ f < 500kHz
Factor	0,05	0,30	0,70	1,00

Multipliers for typical operating conditions.

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



U_{RDC} Rated Voltage Code	C_R Rated Capacitance 20°C 120Hz	ESR_{max} Equivalent Series Resistance 20°C 100kHz	$\tan\delta$ Dissipation Factor 20°C 120Hz	I_{leak} Leakage Current	$I_{max, 105^\circ C}$ Max. Allowed Ripple Current $\leq 105^\circ C$ 100kHz	$I_{max, 125^\circ C}$ Max. Allowed Ripple Current $105^\circ C < T \leq 125^\circ C$ 100kHz	Size $\varnothing D \times L$	Order Code ◇◇ = pin style & length Details: Page 28
(V)	(μF)	(m Ω)		(μA)	(mA _{rms})	(mA _{rms})	(mm)	
4 0G	330	35	0,12	660	2 560	810	8 x 6	PCR0GGN331MB06◇◇35SE3
	560	13	0,12	450	4 520	1 430	8 x 11,5	PCR0GGN561MBAB◇◇35SE3
	680	25	0,12	545	3 700	1 170	10 x 7	PCR0GGN681MC07◇◇50SE3
	1 200	12	0,12	960	5 450	1 740	10 x 12,5	PCR0GGN122MCAC◇◇50SE3
6,3 0J	150	35	0,12	475	2 560	810	8 x 6	PCR0JGN151MB06◇◇35SE3
	330	25	0,12	416	3 700	1 170	10 x 7	PCR0JGN331MC07◇◇50SE3
	470	15	0,12	595	4 210	1 332	8 x 11,5	PCR0JGN471MBAB◇◇35SE3
	680	12	0,12	645	5 450	1 740	10 x 12,5	PCR0JGN681MCAC◇◇50SE3
	820	12	0,12	775	5 450	1 740	10 x 12,5	PCR0JGN821MCAC◇◇50SE3
10 1A	120	35	0,12	600	2 560	810	8 x 6	PCR1AGN121MB06◇◇35SE3
	220	17	0,12	440	3 950	1 260	8 x 11,5	PCR1AGN221MBAB◇◇35SE3
	270	25	0,12	540	3 700	1 170	10 x 7	PCR1AGN271MC07◇◇50SE3
	330	17	0,12	660	3 950	1 260	8 x 11,5	PCR1AGN331MBAB◇◇35SE3
	560	13	0,12	840	5 250	1 680	10 x 12,5	PCR1AGN561MCAC◇◇50SE3
16 1C	82	40	0,12	656	2 120	670	8 x 6	PCR1CGN820MB06◇◇35SE3
	150	30	0,12	480	3 020	955	10 x 7	PCR1CGN151MC07◇◇50SE3
	180	20	0,12	580	3 640	1 151	8 x 11,5	PCR1CGN181MBAB◇◇35SE3
	330	16	0,12	795	4 750	1 520	10 x 12,5	PCR1CGN331MCAC◇◇50SE3
20 1D	47	45	0,12	470	1 890	598	8 x 6	PCR1DGN470MB06◇◇35SE3
	68	40	0,12	275	2 400	759	10 x 7	PCR1DGN680MC07◇◇50SE3
	100	24	0,12	400	3 320	1 050	8 x 11,5	PCR1DGN101MBAB◇◇35SE3
	150	20	0,12	600	4 350	1 390	10 x 12,5	PCR1DGN151MCAC◇◇50SE3
25 1E	68	24	0,12	340	3 320	1 050	8 x 11,5	PCR1EGN680MBAB◇◇35SE3
	100	20	0,12	500	4 350	1 390	10 x 12,5	PCR1EGN101MCAC◇◇50SE3



ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-55 ~ +105
Voltage Range (V)	16 ~ 200
Capacitance Range (μF)	4,7 ~ 2 700
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,15$
Dissipation Factor	at 20°C, 120Hz, see table
Leakage Current (μA)	at 20°C after 2 minutes
Temperature Stability	$Z_{105°C} / Z_{20°C} \leq 1,25$
	$Z_{-55°C} / Z_{+20°C} \leq 1,25$

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

ITEM	ENDURANCE LIFETIME L_e	DAMP HEAT (Steady State)	RESISTANCE TO SOLDERING HEAT RADIAL
Lifetime	3 000h	1 000h	10sec, Wave
Leakage Current	≤ the specified value	≤ the specified value (after voltage processing)	≤ the specified value (after voltage processing)
Capacitance Change	Within ± 20% of initial value	Within ± 20% of initial value	Within ± 5% of initial value
Dissipation Factor	≤ 150% of specified value	≤ 150% of specified value	≤ specified value
ESR Change	≤ 150% of specified value	≤ 150% of specified value	≤ specified value
Condition	T_0 (upper category temperature) U_R $I_R = 0$	60°C (90-95% relative humidity) $U_R = 0$ $I_R = 0$	260°C±5°C

details see page 8

MULTIPLIER FOR RIPPLE CURRENT (FREQUENCY COEFFICIENT)

Frequency	120Hz ≤ f < 1kHz	1kHz ≤ f < 10kHz	10kHz ≤ f < 100kHz	100kHz ≤ f < 500kHz
Factor	0,05	0,30	0,70	1,00

Multipliers for typical operating conditions.

ENVIRONMENTAL

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





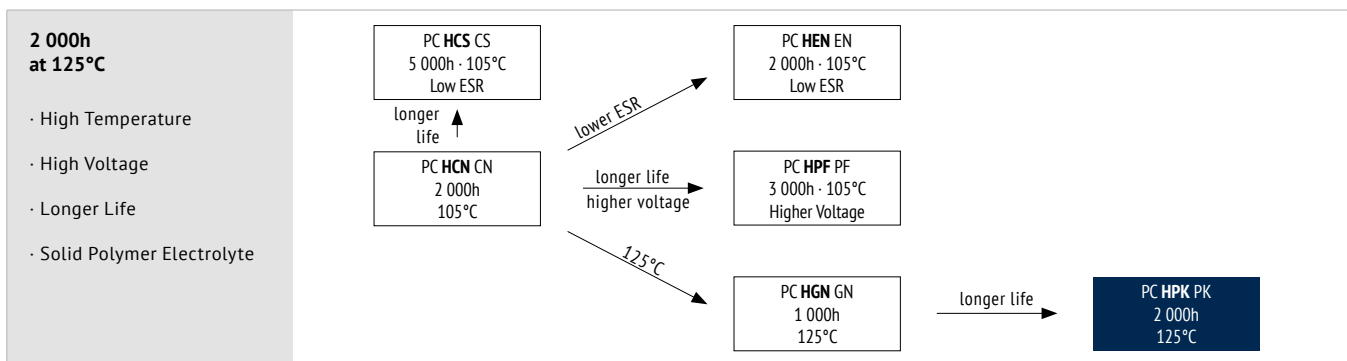
U_{RDC} Rated Voltage Code	C_R Rated Capacitance	ESR_{max} Equivalent Series Resistance	$\tan\delta$ Dissipation Factor	I_{leak} Leakage Current	$I_{max, 105^\circ C}$ Max. Allowed Ripple Current	Size $\varnothing D \times L$	Order Code ◇◇ = pin style & length
(V)	(μF)	(m Ω)	20°C 120kHz	(μA)	(mA rms)	(mm)	Details: Page 28
16 1C	100	38	0,12	320	1 900	5 x 5	PCR1CPF101ME05◇◇20SE3
	150	25	0,12	480	2 800	6,3 x 5	PCR1CPF151MF05◇◇25SE3
	180	25	0,12	576	2 800	6,3 x 5	PCR1CPF181MF05◇◇25SE3
	270	22	0,12	864	3 300	6,3 x 8	PCR1CPF271MF08◇◇25SE3
		22	0,12	864	3 300	8 x 6	PCR1CPF271MB06◇◇35SE3
	330	22	0,12	1 056	3 300	6,3 x 8	PCR1CPF331MF08◇◇25SE3
		22	0,12	1 056	3 300	8 x 6	PCR1CPF331MB06◇◇35SE3
	470	16	0,12	1 504	4 400	8 x 8	PCR1CPF471MB08◇◇35SE3
		14	0,12	1 504	4 950	8 x 11,5	PCR1CPF471MBAB◇◇35SE3
	560	16	0,12	1 792	4 400	8 x 8	PCR1CPF561MB08◇◇35SE3
		14	0,12	1 792	4 950	8 x 11,5	PCR1CPF561MBAB◇◇35SE3
	680	14	0,12	2 176	4 950	8 x 11,5	PCR1CPF681MBAB◇◇35SE3
	1 000	12	0,12	3 200	5 400	10 x 12,5	PCR1CPF102MCAC◇◇50SE3
	1 200	12	0,12	3 840	5 400	10 x 12,5	PCR1CPF122MCAC◇◇50SE3
	2 700	16	0,12	8 640	7 000	10 x 20	PCR1CPF272MC20◇◇50SE3
20 1D	68	40	0,12	272	1 900	5 x 5	PCR1DPF680ME05◇◇20SE3
	82	40	0,12	328	1 900	5 x 5	PCR1DPF820ME05◇◇20SE3
	120	28	0,12	480	2 650	6,3 x 5	PCR1DPF121MF05◇◇25SE3
	150	28	0,12	600	2 650	8 x 6	PCR1DPF151MB06◇◇35SE3
	220	24	0,12	880	3 200	6,3 x 8	PCR1DPF221MF08◇◇25SE3
		24	0,12	880	3 200	8 x 6	PCR1DPF221MB06◇◇35SE3
	270	24	0,12	1 080	3 200	8 x 6	PCR1DPF271MB06◇◇35SE3
	330	17	0,12	1 320	4 300	8 x 8	PCR1DPF331MB08◇◇35SE3
	390	17	0,12	1 560	4 300	8 x 8	PCR1DPF391MB08◇◇35SE3
		14	0,12	1 560	4 950	8 x 11,5	PCR1DPF391MBAB◇◇35SE3
	470	14	0,12	1 880	4 950	8 x 11,5	PCR1DPF471MBAB◇◇35SE3
	560	14	0,12	2 240	4 950	8 x 11,5	PCR1DPF561MBAB◇◇35SE3
		12	0,12	2 240	5 400	10 x 12,5	PCR1DPF561MCAC◇◇50SE3
	680	12	0,12	2 720	5 400	10 x 12,5	PCR1DPF681MCAC◇◇50SE3
	820	12	0,12	3 280	5 400	10 x 12,5	PCR1DPF821MCAC◇◇50SE3
25 1E	56	50	0,12	280	1 700	5 x 5	PCR1EPF560ME05◇◇20SE3
	68	50	0,12	340	1 700	5 x 5	PCR1EPF680ME05◇◇20SE3
	100	30	0,12	500	2 550	6,3 x 5	PCR1EPF101MF05◇◇25SE3
	120	30	0,12	600	2 550	6,3 x 5	PCR1EPF121MF05◇◇25SE3
	180	24	0,12	900	3 200	6,3 x 8	PCR1EPF181MF08◇◇25SE3
		24	0,12	900	3 200	8 x 6	PCR1EPF181MB06◇◇35SE3
	220	24	0,12	1 100	3 200	8 x 6	PCR1EPF221MB06◇◇35SE3
	270	18	0,12	1 350	4 100	8 x 8	PCR1EPF271MB08◇◇35SE3
	330	18	0,12	1 650	4 100	8 x 8	PCR1EPF331MB08◇◇35SE3
		16	0,12	1 650	4 650	8 x 11,5	PCR1EPF331MBAB◇◇35SE3
	390	16	0,12	1 950	4 650	8 x 11,5	PCR1EPF391MBAB◇◇35SE3
	470	16	0,12	2 350	4 650	8 x 11,5	PCR1EPF471MBAB◇◇35SE3
		14	0,12	2 350	5 000	10 x 12,5	PCR1EPF471MCAC◇◇50SE3
	560	14	0,12	2 800	5 000	10 x 12,5	PCR1EPF561MCAC◇◇50SE3
	680	14	0,12	3 400	5 000	10 x 12,5	PCR1EPF681MCAC◇◇50SE3
28 1L	47	50	0,12	264	1 700	5 x 5	PCR1LPF470ME05◇◇20SE3
	82	33	0,12	460	2 450	6,3 x 5	PCR1LPF820MF05◇◇25SE3
	150	28	0,12	840	2 950	6,3 x 8	PCR1LPF151MF08◇◇25SE3
		28	0,12	840	2 950	8 x 6	PCR1LPF151MB06◇◇35SE3
	180	22	0,12	1 008	3 700	8 x 8	PCR1LPF181MB08◇◇35SE3
	220	22	0,12	1 232	3 700	8 x 8	PCR1LPF221MB08◇◇35SE3
	270	18	0,12	1 512	4 350	8 x 11,5	PCR1LPF271MBAB◇◇35SE3
	330	18	0,12	1 848	4 350	8 x 11,5	PCR1LPF331MBAB◇◇35SE3
	470	16	0,12	2 632	4 650	10 x 12,5	PCR1LPF471MCAC◇◇50SE3
	560	16	0,12	3 136	4 650	10 x 12,5	PCR1LPF561MCAC◇◇50SE3
32 1F	39	55	0,12	250	1 600	5 x 5	PCR1FPF390ME05◇◇20SE3
	68	35	0,12	436	2 350	6,3 x 5	PCR1FPF680MF05◇◇25SE3
	120	30	0,12	768	2 800	6,3 x 8	PCR1FPF121MF08◇◇25SE3
		30	0,12	768	2 800	8 x 6	PCR1FPF121MB06◇◇35SE3
	180	24	0,12	1 152	3 600	8 x 8	PCR1FPF181MB08◇◇35SE3
	220	20	0,12	1 408	4 000	8 x 11,5	PCR1FPF221MBAB◇◇35SE3
	270	20	0,12	1 728	4 000	8 x 11,5	PCR1FPF271MBAB◇◇35SE3
	390	18	0,12	2 496	4 400	10 x 12,5	PCR1FPF391MCAC◇◇50SE3
	470	18	0,12	3 008	4 400	10 x 12,5	PCR1FPF471MCAC◇◇50SE3



U _{RDC} Rated Voltage Code	C _R Rated Capacitance	ESR _{max} Equivalent Series Resistance	tanδ Dissipation Factor	I _{leak} Leakage Current	I _{max, 105°C} Max. Allowed Ripple Current	Size øD x L	Order Code ♦♦ = pin style & length
(V)	(μF)	(mΩ)	20°C 120Hz	20°C 100kHz	≤105°C 100kHz	(mm)	Details: Page 28
35 1V	33	55	0,12	231	1 600	5 x 5	PCR1VPF330ME05♦♦20SE3
	47	35	0,12	329	2 350	6,3 x 5	PCR1VPF470MF05♦♦25SE3
	56	35	0,12	392	2 350	6,3 x 5	PCR1VPF560MF05♦♦25SE3
	100	30	0,12	700	2 800	6,3 x 8	PCR1VPF101MF08♦♦25SE3
		30	0,12	700	2 800	8 x 6	PCR1VPF101MB06♦♦35SE3
	150	24	0,12	1 050	3 600	8 x 8	PCR1VPF151MB08♦♦35SE3
	180	24	0,12	1 260	3 600	8 x 11,5	PCR1VPF181MBAB♦♦35SE3
	220	20	0,12	1 540	4 000	8 x 11,5	PCR1VPF221MBAB♦♦35SE3
	330	18	0,12	2 310	4 400	10 x 12,5	PCR1VPF331MCAC♦♦50SE3
	390	18	0,12	2 730	4 400	10 x 12,5	PCR1VPF391MCAC♦♦50SE3
680	18	0,12	4 760	4 690	10 x 16	PCR1VPF681MC16♦♦50SE3	
1 000	16	0,12	7 000	4 650	10 x 20	PCR1VPF102MC20♦♦50SE3	
40 1G	22	60	0,12	176	1 550	5 x 5	PCR1GPF220ME05♦♦20SE3
	33	40	0,12	264	2 200	6,3 x 5	PCR1GPF330MF05♦♦25SE3
	39	37	0,12	312	2 300	6,3 x 5	PCR1GPF390MF05♦♦25SE3
	82	32	0,12	656	2 700	6,3 x 8	PCR1GPF820MF08♦♦25SE3
		32	0,12	656	2 700	8 x 6	PCR1GPF820MB06♦♦35SE3
	120	26	0,12	960	3 500	8 x 8	PCR1GPF121MB08♦♦35SE3
	150	21	0,12	1 200	3 500	8 x 11,5	PCR1GPF151MBAB♦♦35SE3
	220	18	0,12	1 760	4 400	10 x 12,5	PCR1GPF221MCAC♦♦50SE3
	270	18	0,12	2 160	4 400	10 x 12,5	PCR1GPF271MCAC♦♦50SE3
	330	18	0,12	2 640	4 400	10 x 12,5	PCR1GPF331MCAC♦♦50SE3
50 1H	10	70	0,12	100	1 400	5 x 5	PCR1HPF100ME05♦♦20SE3
	12	70	0,12	120	1 400	5 x 5	PCR1HPF120ME05♦♦20SE3
	22	40	0,12	220	2 200	6,3 x 5	PCR1HPF220MF05♦♦25SE3
	33	35	0,12	330	2 600	8 x 6	PCR1HPF330MB06♦♦35SE3
	39	35	0,12	390	2 600	6,3 x 8	PCR1HPF390MF08♦♦25SE3
		35	0,12	390	2 600	8 x 6	PCR1HPF390MB06♦♦35SE3
	56	29	0,12	560	3 300	8 x 8	PCR1HPF560MB08♦♦35SE3
	68	29	0,12	680	3 300	8 x 8	PCR1HPF680MB08♦♦35SE3
	82	25	0,12	820	3 800	8 x 11,5	PCR1HPF820MBAB♦♦35SE3
	100	25	0,12	1 000	3 800	8 x 11,5	PCR1HPF101MBAB♦♦35SE3
20		0,12	1 000	4 300	10 x 12,5	PCR1HPF101MCAC♦♦50SE3	
120	20	0,12	1 200	4 300	10 x 12,5	PCR1HPF121MCAC♦♦50SE3	
150	20	0,12	1 500	4 300	10 x 12,5	PCR1HPF151MCAC♦♦50SE3	
220	20	0,12	2 200	4 300	10 x 16	PCR1HPF221MC16♦♦50SE3	
470	30	0,12	4 700	4 300	10 x 20	PCR1HPF471MC20♦♦50SE3	
63 1J	10	50	0,12	126	1 950	6,3 x 5	PCR1JPF100MF05♦♦25SE3
	12	50	0,12	152	1 950	6,3 x 5	PCR1JPF120MF05♦♦25SE3
	22	45	0,12	278	2 350	6,3 x 8	PCR1JPF220MF08♦♦25SE3
		45	0,12	278	2 350	8 x 6	PCR1JPF220MB06♦♦35SE3
	27	45	0,12	341	2 350	8 x 6	PCR1JPF270MB06♦♦35SE3
	33	30	0,12	416	3 200	8 x 8	PCR1JPF330MB08♦♦35SE3
	39	30	0,12	492	3 200	8 x 8	PCR1JPF390MB08♦♦35SE3
	47	26	0,12	592	3 600	8 x 11,5	PCR1JPF470MBAB♦♦35SE3
	56	26	0,12	706	3 600	8 x 11,5	PCR1JPF560MBAB♦♦35SE3
		22	0,12	706	4 100	10 x 12,5	PCR1JPF560MCAC♦♦50SE3
68	22	0,12	857	4 100	10 x 12,5	PCR1JPF680MCAC♦♦50SE3	
82	22	0,12	1 034	4 100	10 x 12,5	PCR1JPF820MCAC♦♦50SE3	
100	22	0,12	1 260	4 100	10 x 12,5	PCR1JPF101MCAC♦♦50SE3	
120	22	0,12	1 512	4 100	10 x 12,5	PCR1JPF121MCAC♦♦50SE3	
220	20	0,12	2 773	4 950	10 x 16	PCR1JPF221MC16♦♦50SE3	
330	20	0,12	4 158	4 950	10 x 20	PCR1JPF331MC20♦♦50SE3	
80 1K	22	36	0,12	352	2 900	8 x 8	PCR1KPF220MB08♦♦35SE3
	27	36	0,12	432	2 900	8 x 8	PCR1KPF270MB08♦♦35SE3
	33	32	0,12	528	3 200	8 x 11,5	PCR1KPF330MBAB♦♦35SE3
	39	32	0,12	624	3 200	8 x 11,5	PCR1KPF390MBAB♦♦35SE3
	47	28	0,12	752	3 600	10 x 12,5	PCR1KPF470MCAC♦♦50SE3
	56	28	0,12	896	3 600	10 x 12,5	PCR1KPF560MCAC♦♦50SE3
	220	40	0,12	3 520	3 500	10 x 20	PCR1KPF221MC20♦♦50SE3



U_{RDC} Rated Voltage Code	C_R Rated Capacitance	ESR_{max} Equivalent Series Resistance	$\tan\delta$ Dissipation Factor	I_{leak} Leakage Current	$I_{max, 105^\circ C}$ Max. Allowed Ripple Current	Size $\varnothing D \times L$	Order Code ◇◇ = pin style & length
(V)	(μF)	(m Ω)		(μA)	(mA _{rms})	(mm)	Details: Page 28
100 2A	12	36	0,12	240	3 000	8 x 11,5	PCR2APF120MBAB◇◇35SE3
	15	36	0,12	300	3 000	8 x 11,5	PCR2APF150MBAB◇◇35SE3
	22	32	0,12	440	3 300	10 x 12,5	PCR2APF220MCAC◇◇50SE3
	27	32	0,12	540	3 300	10 x 12,5	PCR2APF270MCAC◇◇50SE3
125 2B	10	45	0,12	250	2 700	8 x 11,5	PCR2BPF100MBAB◇◇35SE3
	12	45	0,12	300	2 700	8 x 11,5	PCR2BPF120MBAB◇◇35SE3
	18	40	0,12	450	3 000	10 x 12,5	PCR2BPF180MCAC◇◇50SE3
	22	40	0,12	550	3 000	10 x 12,5	PCR2BPF220MCAC◇◇50SE3
160 2C	10	60	0,12	320	2 400	10 x 12,5	PCR2CPF100MCAC◇◇50SE3
	12	60	0,12	384	2 400	10 x 12,5	PCR2CPF120MCAC◇◇50SE3
200 2D	8,2	100	0,12	328	1 850	10 x 12,5	PCR2DPF8R2MCAC◇◇50SE3
	10	100	0,12	400	1 850	10 x 12,5	PCR2DPF100MCAC◇◇50SE3



ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-55 ~ +125
Voltage Range (V)	10 ~ 80
Capacitance Range (μF)	10 ~ 1 000
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,15$
Dissipation Factor	at 20°C, 120Hz, see table
Leakage Current (μA)	at 20°C after 2 minutes
Temperature Stability	$Z_{125°C} / Z_{30°C} \leq 1,25$ $Z_{-55°C} / Z_{+20°C} \leq 1,25$

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

ITEM	ENDURANCE LIFETIME L_e	DAMP HEAT (Steady State)	RESISTANCE TO SOLDERING HEAT RADIAL
Lifetime	2 000h	1 000h	10sec, Wave
Leakage Current	≤ the specified value	≤ the specified value (after voltage processing)	≤ the specified value (after voltage processing)
Capacitance Change	Within ± 20% of initial value	Within ± 20% of initial value	Within ± 5% of initial value
Dissipation Factor	≤ 200% of specified value	≤ 150% of specified value	≤ specified value
ESR Change	≤ 200% of specified value	≤ 150% of specified value	≤ specified value
Condition	T_0 (upper category temperature) U_R $I_R = 0$	60°C (90~95% relative humidity) $U_R = 0$ $I_R = 0$	260°C±5°C

details see page 8

MULTIPLIER FOR RIPPLE CURRENT (FREQUENCY COEFFICIENT)

Frequency	120Hz ≤ f < 1kHz	1kHz ≤ f < 10kHz	10kHz ≤ f < 100kHz	100kHz ≤ f < 500kHz
Factor	0,05	0,30	0,70	1,00

Multipliers for typical operating conditions.

ENVIRONMENTAL

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





U _{RDC} Rated Voltage Code	C _R Rated Capacitance	ESR _{max} Equivalent Series Resistance	tanδ Dissipation Factor	I _{leak} Leakage Current	I _{max, 125°C} Max. Allowed Ripple Current	Size øD x L	Order Code
(V)	(µF)	(mΩ)	20°C 120kHz	(µA)	≤125°C 100kHz	(mm)	Details: Page 28
16 1C	150	30	0,12	480	1 400	6,3 x 5	PCR1CPK151MF050025E3
	270	26	0,12	864	1 650	6,3 x 8	PCR1CPK271MF080025E3
		26	0,12	864	1 650	8 x 6	PCR1CPK271MB060035E3
	390	19	0,12	1 248	2 200	8 x 8	PCR1CPK391MB080035E3
	560	16	0,12	1 792	2 500	8 x 11,5	PCR1CPK561MBAB0035E3
	1 000	14	0,12	3 200	2 700	10 x 12,5	PCR1CPK102MCAC0050E3
	1 800	14	0,12	5 760	3 000	10 x 16	PCR1CPK182MC160050E3
	2 200	14	0,12	7 040	3 500	10 x 20	PCR1CPK222MC200050E3
20 1D	120	34	0,12	480	1 300	6,3 x 5	PCR1DPK121MF050025E3
	180	29	0,12	720	1 600	6,3 x 8	PCR1DPK181MF080025E3
	220	29	0,12	880	1 600	6,3 x 8	PCR1DPK221MF080025E3
		29	0,12	880	1 600	8 x 6	PCR1DPK221MB060035E3
	330	21	0,12	1 320	2 100	8 x 8	PCR1DPK331MB080035E3
	390	17	0,12	1 560	2 400	8 x 11,5	PCR1DPK391MBAB0035E3
	680	15	0,12	2 720	2 600	10 x 12,5	PCR1DPK681MCAC0050E3
25 1E	82	36	0,12	410	1255	6,3 x 5	PCR1EPK820MF050025E3
	100	36	0,12	500	1 255	6,3 x 5	PCR1EPK101MF050025E3
	150	29	0,12	750	1 600	6,3 x 8	PCR1EPK151MF080025E3
		29	0,12	750	1 600	8 x 6	PCR1EPK151MB060035E3
	180	29	0,12	900	1 600	6,3 x 8	PCR1EPK181MF080025E3
		29	0,12	900	1 600	8 x 6	PCR1EPK181MB060035E3
	220	22	0,12	1 100	2 050	8 x 8	PCR1EPK221MB080035E3
	270	22	0,12	1 350	2 050	8 x 8	PCR1EPK271MB080035E3
	330	19	0,12	1 650	2 325	8 x 11,5	PCR1EPK331MBAB0035E3
	390	19	0,12	1 950	2 325	8 x 11,5	PCR1EPK391MBAB0035E3
	470	17	0,12	2 350	2 500	10 x 12,5	PCR1EPK471MCAC0050E3
	560	17	0,12	2 800	2 500	10 x 12,5	PCR1EPK561MCAC0050E3
	2 200	15	0,12	11 000	1 900	10 x 20	PCR1EPK222MC200050E3
35 1V	47	42	0,12	329	1 175	6,3 x 5	PCR1VPK470MF050025E3
	56	42	0,12	392	1 175	6,3 x 5	PCR1VPK560MF050025E3
	82	36	0,12	574	1 400	6,3 x 8	PCR1VPK820MF080025E3
		36	0,12	574	1 400	8 x 6	PCR1VPK820MB060035E3
	100	36	0,12	700	1 400	6,3 x 8	PCR1VPK101MF080025E3
		36	0,12	700	1 400	8 x 6	PCR1VPK101MB060035E3
	120	29	0,12	840	1 800	8 x 8	PCR1VPK121MB080035E3
	150	29	0,12	1 050	1 800	8 x 8	PCR1VPK151MB080035E3
	180	24	0,12	1 260	2 000	8 x 11,5	PCR1VPK181MBAB0035E3
	220	24	0,12	1 540	2 000	8 x 11,5	PCR1VPK221MBAB0035E3
	270	22	0,12	1 890	2 200	10 x 12,5	PCR1VPK271MCAC0050E3
	330	22	0,12	2 310	2 200	10 x 12,5	PCR1VPK331MCAC0050E3
	560	22	0,18	3 920	2 200	10 x 16	PCR1VPK561MC160050E3
	1 000	24	0,18	7 000	1 830	10 x 20	PCR1VPK102MC200050E3
40 1G	33	45	0,12	264	1 150	6,3 x 5	PCR1GPK330MF050025E3
	39	45	0,12	312	1 150	6,3 x 5	PCR1GPK390MF050025E3
	68	38	0,12	544	1 350	6,3 x 8	PCR1GPK680MF080025E3
		38	0,12	544	1 350	8 x 6	PCR1GPK680MB060035E3
	82	38	0,12	656	1 350	6,3 x 8	PCR1GPK820MF080025E3
		38	0,12	656	1 350	8 x 6	PCR1GPK820MB060035E3
	100	31	0,12	800	1 750	8 x 8	PCR1GPK101MB080035E3
	120	31	0,12	960	1 750	8 x 8	PCR1GPK121MB080035E3
	150	25	0,12	1 200	1 950	8 x 11,5	PCR1GPK151MBAB0035E3
	220	22	0,12	1 760	2 200	10 x 12,5	PCR1GPK221MCAC0050E3
	270	22	0,12	2 160	2 200	10 x 12,5	PCR1GPK271MCAC0050E3
50 1H	18	48	0,12	180	1 100	6,3 x 5	PCR1HPK180MF050025E3
	22	48	0,12	220	1 100	6,3 x 5	PCR1HPK220MF050025E3
	33	42	0,12	330	1 300	6,3 x 8	PCR1HPK330MF080025E3
		42	0,12	330	1 300	8 x 6	PCR1HPK330MB060035E3
	39	42	0,12	390	1 300	6,3 x 8	PCR1HPK390MF080025E3
		42	0,12	390	1 300	8 x 6	PCR1HPK390MB060035E3
	47	35	0,12	470	1 650	8 x 8	PCR1HPK470MB080035E3
	56	35	0,12	560	1 650	8 x 8	PCR1HPK560MB080035E3
	68	35	0,12	680	1 650	8 x 8	PCR1HPK680MB080035E3



U _{RDC} Rated Voltage Code	C _R Rated Capacitance 20°C 120Hz	ESR _{max} Equivalent Series Resistance 20°C 100kHz	tanδ Dissipation Factor 20°C 120Hz	I _{leak} Leakage Current	I _{max,125°C} Max.Allowed Ripple Current ≤125°C 100kHz	Size øD x L	Order Code ◇◇ = pin style & length Details: Page 28
(V)	(µF)	(mΩ)		(µA)	(mA _{rms})	(mm)	
50 1H	82	20	0,12	820	1 900	8 x 11,5	PCR1HPK820MBAB◇◇35E3
	100	30	0,12	1 000	1 900	8 x 11,5	PCR1HPK101MBAB◇◇35E3
		24	0,12	1 000	2 150	10 x 12,5	PCR1HPK101MCAC◇◇50E3
	120	24	0,12	1 200	2 150	10 x 12,5	PCR1HPK121MCAC◇◇50E3
	150	24	0,12	1 500	2 150	10 x 12,5	PCR1HPK151MCAC◇◇50E3
	470	28	0,12	4 700	1 700	10 x 20	PCR1HPK471MC20◇◇50E3
63 1J	10	60	0,12	126	975	6,3 x 5	PCR1JPK100MF05◇◇25E3
	12	60	0,12	152	975	6,3 x 5	PCR1JPK120MF05◇◇25E3
	22	54	0,12	278	1 175	6,3 x 8	PCR1JPK220MF08◇◇25E3
		54	0,12	278	1 175	8 x 6	PCR1JPK220MB06◇◇35E3
	27	54	0,12	341	1 175	6,3 x 8	PCR1JPK270MF08◇◇25E3
		54	0,12	341	1 175	8 x 6	PCR1JPK270MB06◇◇35E3
	33	36	0,12	416	1 600	8 x 8	PCR1JPK330MB08◇◇35E3
	39	36	0,12	492	1 600	8 x 8	PCR1JPK390MB08◇◇35E3
	47	31	0,12	593	1 800	8 x 11,5	PCR1JPK470MBAB◇◇35E3
	56	31	0,12	706	1 800	8 x 11,5	PCR1JPK560MBAB◇◇35E3
	82	27	0,12	1 034	2 000	10 x 12,5	PCR1JPK820MCAC◇◇50E3
	100	27	0,12	1 260	2 000	10 x 12,5	PCR1JPK101MCAC◇◇50E3
	150	30	0,12	1 890	2 000	10 x 16	PCR1JPK151MC16◇◇50E3
	220	25	0,12	2 773	3 200	10 x 20	PCR1JPK221MC20◇◇50E3
80 1K	22	43	0,12	352	1 450	8 x 8	PCR1KPK220MB08◇◇35E3
	27	43	0,12	432	1 450	8 x 8	PCR1KPK270MB08◇◇35E3
	33	38	0,12	528	1 600	8 x 11,5	PCR1KPK330MBAB◇◇35E3
	39	38	0,12	624	1 600	8 x 11,5	PCR1KPK390MBAB◇◇35E3
	47	34	0,12	752	1 800	10 x 12,5	PCR1KPK470MCAC◇◇50E3
	56	34	0,12	896	1 800	10 x 12,5	PCR1KPK560MCAC◇◇50E3





MLPC SOLID POLYMER CHIP CAPACITORS

Solid Polymer: Order Code CHIP (MLPC – Multi Layer Polymer Capacitor)	50
Solid Polymer: Technical Specifications CHIP (MLPC – Multi Layer Polymer Capacitor)	50/51

SERIES	CODE	TYPE	TEMPERATURE	VOLTAGE	LIFETIME	INFO	
PC HPA	PA	STACKED	105°C	2,5~16V	2 000h	Standard	52
PC HPE	PE	STACKED	85°C	4~6,3V	2 000h	Standard	56
PC HPG	PG	STACKED	125°C	2~16V	1 000h	High Temperature	58
PC HPS	PS	STACKED	105°C	2~10V	2 000h	Low Profile	60

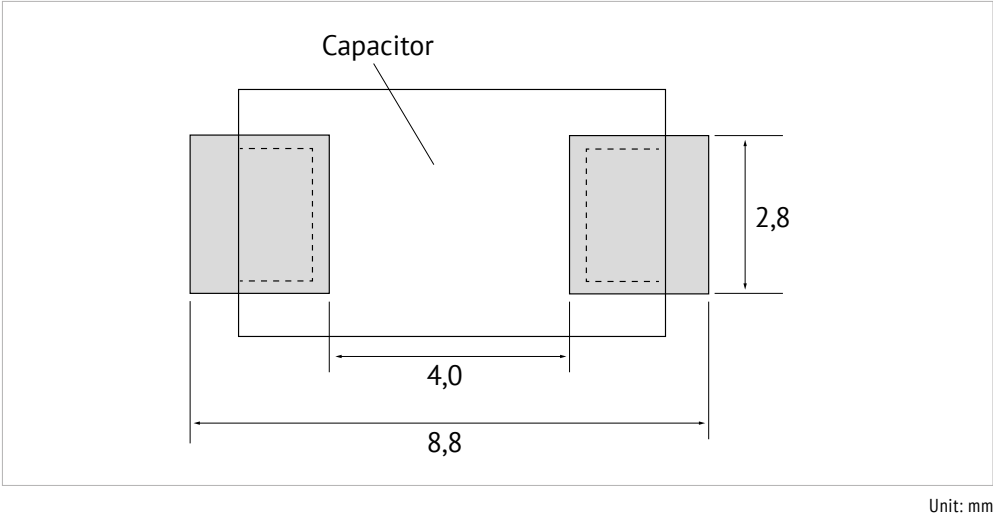
ORDER CODE SOLID POLYMER CHIP/MLPC

PC	P	OD	PA	6R8	M	04	V	E3
Techno-logy	Terminal Type	Rated Voltage Code	Series Code	Capacitance Code μF	Capacitance Tolerance	ESR Code (mOhm)	Dimension Code (mm)	for internal use
PC = Polymer Capacitor	Chip P	2V OD 2,5V OE 4V OG 6,3V OJ 8V OK 10V 1A 16V 1C	HPA PA HPE PE HPG PG HPS PS	6,8 6R8 68 680 470 471	$\pm 10\%$ K $\pm 20\%$ M $-30 \sim +10\%$ X $-35 \sim +10\%$ W $-35 \sim +20\%$ Y	4,5 04 6 06 16 16 60 60	7,3x4,3x1,9 V 7,3x4,3x2,8 D 7,3x4,3x1,1 E 7,3x3x1,4 B	

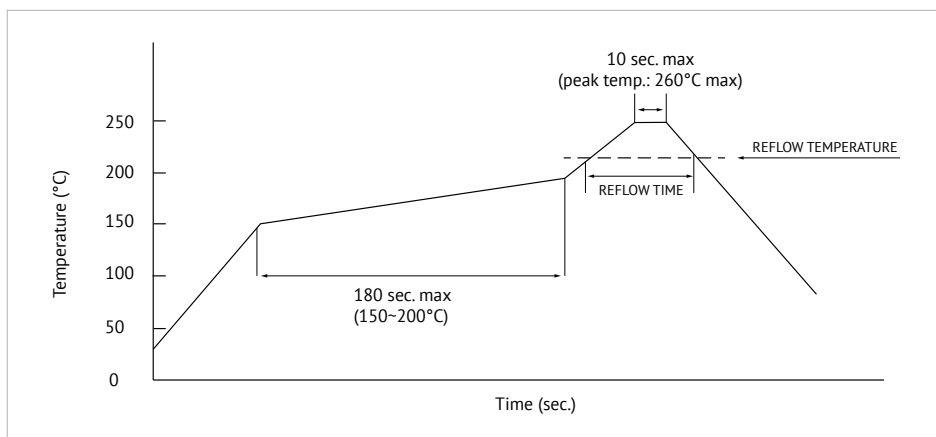
STORAGE CONDITION

IN ADDITION TO THE DETAILS IN CHAPTER "HANDLING PRECAUTIONS" PLEASE NOTE:
► Moisture Sensitivity Level: MSL-3
► Recommended Storage: 5~30°C, max 60% RH within moisture proof bag
► Max. Storage time in original closed bag: 2 years
► After opening the bag please use the capacitors within 168h.
► When polymer capacitors are used first time after a period of storage, the leakage current might be increased. When voltages are applied within specified life time, the leakage current will decrease again due to the self-healing functionality. Please take action to protect the circuit against increase leakage currents.

RECOMMENDED SOLDERING PAD DIMENSIONS

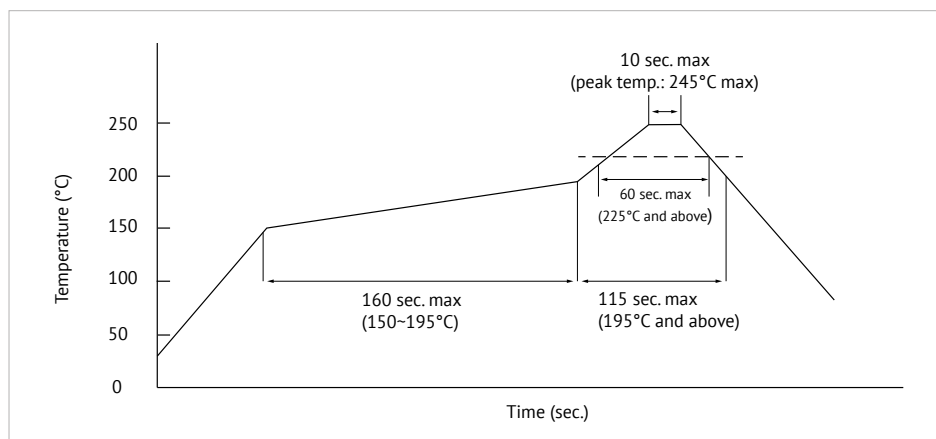


RECOMMENDED REFLOW PROFILE (<10V)

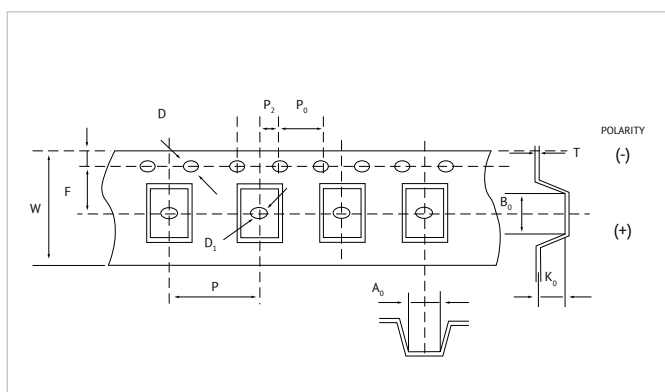


TEMPERATURE	TIME
255°C max	30sec. mx
230°C max	130sec. max
217°C max	150sec. max

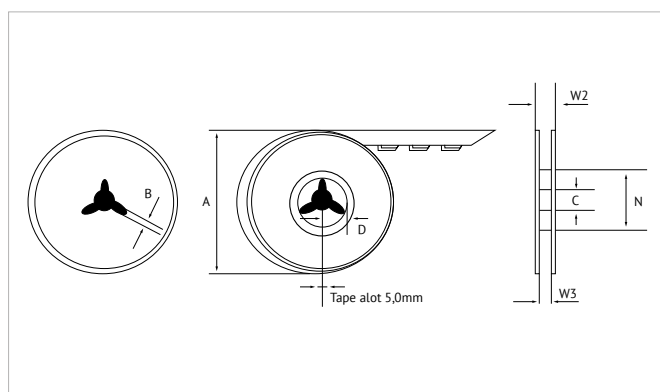
RECOMMENDED REFLOW SOLDERING PROFILE (≥10V)



PACKAGING OUTER DIMENSIONS (Unit: mm)



REEL STRUCTURE AND DIMENSIONS (Unit: mm)

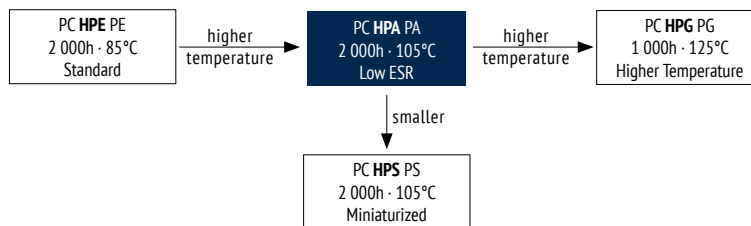


TYPE	W ±0,2	P ±0,2	A ₀ ±0,1	B ₀ ±0,1	K ₀ ±0,1	D ±0,1	D ₁ 0~0,25	E ±0,05	F ±0,05	P ₀ ±0,1	T ±0,005	P ₂ ±0,1
V	12,0	8,0	4,6	7,6	2,16	1,5	1,5	1,75	5,5	4,0	0,229	2,0
D	12,0	8,0	4,6	7,6	3,10	1,5	1,5	1,75	5,5	4,0	0,267	2,0
E	12,0	8,0	4,6	7,6	2,16	1,5	1,5	1,75	5,5	4,0	0,229	2,0
B	12,0	8,0	4,6	7,6	2,16	1,5	1,5	1,75	5,5	4,0	0,229	2,0

A≠MAX	B≠0,18	C≠0,2	D≠0,1	N≠1,0	W2±1,0	W3±1,5
330	2,0	13,0	11,9	100	17,5	13,5

**2 000h
at 105°C**

- Low ESR
- MLPC (Multi Layer Polymer Capacitor)
- Stacked Chip
- Solid Polymer Electrolyte



ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-55 ~ +105
Voltage Range (V)	2 ~ 16
Capacitance Range (μF)	6,8 ~ 560
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,25$
Dissipation Factor	$\leq 0,06$
Temperature Stability	$\frac{Z_{105^\circ\text{C}}}{Z_{20^\circ\text{C}}} \leq 1,25$ $\frac{Z_{-55^\circ\text{C}}}{Z_{+20^\circ\text{C}}} \leq 1,25$
Endurance	$L_e = 2\,000\text{h}$

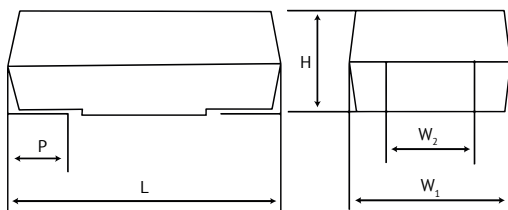


The usage at lower temperatures than indicated may be possible. Please contact the Jianghai Europe sales office for approval.

ITEM ENDURANCE LIFE $L_e = 2\,000\text{h}$

Leakage Current	$U_R < 8\text{V}$: Not more than 300% of specific value $U_R \geq 8\text{V}$: Not more than specific value
Capacitance Change	Within ± 20% of initial value
Dissipation Factor	Not more than 200% of specified value
Condition	U_R applied at 105°C

DIMENSIONS



	L +0,3/-0,1	W ₁ +0,3/-0,1	H +0,3/-0,1	P +/-0,3	W ₂ +/-0,1
Type E	7,3	4,3	1,1	1,3	2,4
Type B	7,3	4,3	1,4	1,3	2,4
Type V	7,3	4,3	1,9	1,3	2,4
Type D	7,3	4,3	2,8	1,3	2,4

MULTIPLIER FOR RIPPLE CURRENT

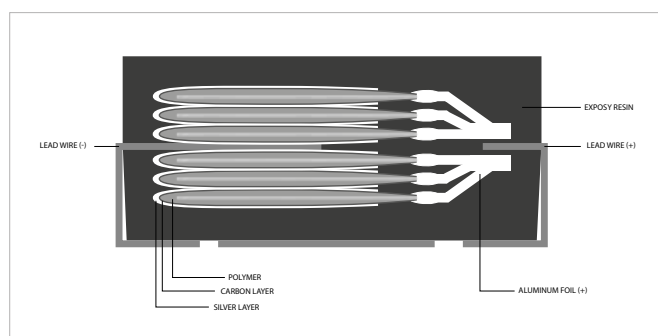
TEMPERATURE (T)	T ≤ 45°C	45°C < T ≤ 85°C	85°C < T ≤ 105°C
MULTIPLIER	1,0	0,7	0,25

ENVIRONMENTAL

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

Additional information for storage condition please see page 50.

INTERNAL STRUCTURE PRINCIPLE (EXAMPLE)



For detailed information, datasheets and samples please contact Jianghai Europe.

TYPE V

U_{RDC} (Code)	C_R Rated Capacitance 20°C, 120Hz	ESR_{max} Equivalent Series Resistance 20°C 100kHz	$\tan\delta$ Dissipation Factor 20°C 120Hz	I_{leak} Leakage Current 20°C 2min	I_{RAC} Rated Ripple Current 45°C 100kHz	Size Code	Dimension	ORDER CODE
(V)	(μF)	(mΩ)		(μA)	(mA _{rms})		(mm)	Details: Page 50
2,0 OD	100	16	0,06	20	4 900	V	7,3x4,3x1,9	PCP0DPA101M16VE3
	150	9	0,06	30	6 300	V	7,3x4,3x1,9	PCP0DPA151M09VE3
	220	9	0,06	44	6 300	V	7,3x4,3x1,9	PCP0DPA221M09VE3
	270	9	0,06	54	6 300	V	7,3x4,3x1,9	PCP0DPA271M09VE3
	330	6	0,06	66	7 500	V	7,3x4,3x1,9	PCP0DPA331M06VE3
		7	0,06	66	7 000	V	7,3x4,3x1,9	PCP0DPA331M07VE3
		9	0,06	66	6 300	V	7,3x4,3x1,9	PCP0DPA331M09VE3
	470	3	0,06	94	10 200	V	7,3x4,3x1,9	PCP0DPA471M03VE3
		4,5	0,06	94	8 500	V	7,3x4,3x1,9	PCP0DPA471M04VE3
		6	0,06	94	7 500	V	7,3x4,3x1,9	PCP0DPA471M06VE3
		9	0,06	94	6 300	V	7,3x4,3x1,9	PCP0DPA471M09VE3
		4,5	0,06	112	8 500	V	7,3x4,3x1,9	PCP0DPA561M04VE3
	560	6	0,06	112	7 500	V	7,3x4,3x1,9	PCP0DPA561M06VE3
		9	0,06	112	6 300	V	7,3x4,3x1,9	PCP0DPA561M09VE3
2,5 OE	100	16	0,06	25	4 900	V	7,3x4,3x1,9	PCP0EPA101M16VE3
	150	9	0,06	38	6 300	V	7,3x4,3x1,9	PCP0EPA151M09VE3
	220	9	0,06	55	6 300	V	7,3x4,3x1,9	PCP0EPA221M09VE3
	270	9	0,06	68	6 300	V	7,3x4,3x1,9	PCP0EPA271M09VE3
	330	6	0,06	83	7 500	V	7,3x4,3x1,9	PCP0EPA331M06VE3
		9	0,06	83	6 300	V	7,3x4,3x1,9	PCP0EPA331M09VE3
	470	3	0,06	118	10 200	V	7,3x4,3x1,9	PCP0EPA471M03VE3
		4,5	0,06	118	8 500	V	7,3x4,3x1,9	PCP0EPA471M04VE3
		6	0,06	118	7 500	V	7,3x4,3x1,9	PCP0EPA471M06VE3
		9	0,06	118	6 300	V	7,3x4,3x1,9	PCP0EPA471M09VE3
4 OG	68	20	0,06	28	4 400	V	7,3x4,3x1,9	PCP0GPA680M20VE3
	82	16	0,06	33	4 900	V	7,3x4,3x1,9	PCP0GPA820M16VE3
	150	16	0,06	60	4 900	V	7,3x4,3x1,9	PCP0GPA151M16VE3
	220	9	0,06	88	6 300	V	7,3x4,3x1,9	PCP0GPA221M09VE3
6,3 OJ	10	55	0,06	7	2 700	V	7,3x4,3x1,9	PCP0JPA100M55VE3
	22	45	0,06	14	3 000	V	7,3x4,3x1,9	PCP0JPA220M45VE3
	33	25	0,06	21	3 900	V	7,3x4,3x1,9	PCP0JPA330M25VE3
	47	25	0,06	30	3 900	V	7,3x4,3x1,9	PCP0JPA470M25VE3
	68	15	0,06	43	5 100	V	7,3x4,3x1,9	PCP0JPA680M15VE3
	100	15	0,06	63	5 100	V	7,3x4,3x1,9	PCP0JPA101M15VE3
		9	0,06	95	6 300	V	7,3x4,3x1,9	PCP0JPA151M09VE3
		15	0,06	95	5 100	V	7,3x4,3x1,9	PCP0JPA151M15VE3
	220	9	0,06	139	6 300	V	7,3x4,3x1,9	PCP0JPA221M09VE3
		15	0,06	139	5 100	V	7,3x4,3x1,9	PCP0JPA221M15VE3
8 OK	150	10	0,06	360	6 000	V	7,3x4,3x1,9	PCP0KPA151M10VE3
	200	12	0,06	480	5 600	V	7,3x4,3x1,9	PCP0KPA201M12VE3
	220	15	0,06	480	5 100	V	7,3x4,3x1,9	PCP0KPA221M15VE3
10 1A	10	55	0,06	30	2 700	V	7,3x4,3x1,9	PCP1APA100M55VE3
	22	28	0,06	66	3 700	V	7,3x4,3x1,9	PCP1APA220M28VE3
	33	25	0,06	99	3 900	V	7,3x4,3x1,9	PCP1APA330M25VE3
	100	15	0,06	300	5 100	V	7,3x4,3x1,9	PCP1APA101M15VE3
16 1C	6,8	70	0,06	33	2 400	V	7,3x4,3x1,9	PCP1CPA6R8M70VE3
	10	60	0,06	48	2 600	V	7,3x4,3x1,9	PCP1CPA100M60VE3
	15	40	0,06	72	3 200	V	7,3x4,3x1,9	PCP1CPA150M40VE3
	22	30	0,06	106	3 600	V	7,3x4,3x1,9	PCP1CPA220M30VE3
	33	15	0,06	159	5 100	V	7,3x4,3x1,9	PCP1CPA330M15VE3
		40	0,06	159	3 200	V	7,3x4,3x1,9	PCP1CPA330M40VE3
	47	55	0,06	226	2 700	V	7,3x4,3x1,9	PCP1CPA470M55VE3
	68	30	0,06	327	3 600	V	7,3x4,3x1,9	PCP1CPA680M30VE3
	100	15	0,06	480	5 100	V	7,3x4,3x1,9	PCP1CPA101M15VE3
		25	0,06	480	3 900	V	7,3x4,3x1,9	PCP1CPA101M25VE3
		40	0,06	480	3 200	V	7,3x4,3x1,9	PCP1CPA101M40VE3

TYPE D, E, B: please see next pages >>

TYPE D

U _{RDC} (Code)	C _R Rated Capacitance 20°C, 120Hz	ESR _{max} Equivalent Series Resistance 20°C 100kHz	tanδ Dissipation Factor 20°C 120Hz	I _{leak} Leakage Current 20°C 2min	I _{RAC} Rated Ripple Current 45°C 100kHz	Size Code	Dimension	ORDER CODE
(V)	(μF)	(mΩ)		(μA)	(mA _{RMS})		(mm)	Details: Page 50
2 0D	100	16	0,06	20	4 900	D	7,3x4,3x2,8	PCP0DPA101M16DE3
	150	9	0,06	30	6 300	D	7,3x4,3x2,8	PCP0DPA151M09DE3
	220	9	0,06	44	6 300	D	7,3x4,3x2,8	PCP0DPA221M09DE3
	270	9	0,06	54	6 300	D	7,3x4,3x2,8	PCP0DPA271M09DE3
	330	7	0,06	66	7 000	D	7,3x4,3x2,8	PCP0DPA331M07DE3
		9	0,06	66	6 300	D	7,3x4,3x2,8	PCP0DPA331M09DE3
	470	4,5	0,06	94	8 500	D	7,3x4,3x2,8	PCP0DPA471M04DE3
		6	0,06	94	7 500	D	7,3x4,3x2,8	PCP0DPA471M06DE3
		9	0,06	94	6 300	D	7,3x4,3x2,8	PCP0DPA471M09DE3
2,5 0E	100	16	0,06	25	4 900	D	7,3x4,3x2,8	PCP0EPA101M16DE3
	150	9	0,06	38	6 300	D	7,3x4,3x2,8	PCP0EPA151M09DE3
	180	12	0,06	45	5 600	D	7,3x4,3x2,8	PCP0EPA181M12DE3
	220	9	0,06	55	6 300	D	7,3x4,3x2,8	PCP0EPA221M09DE3
	270	9	0,06	68	6 300	D	7,3x4,3x2,8	PCP0EPA271M09DE3
	330	7	0,06	83	7 000	D	7,3x4,3x2,8	PCP0EPA331M07DE3
		9	0,06	83	6 300	D	7,3x4,3x2,8	PCP0EPA331M09DE3
	470	4,5	0,06	118	8 500	D	7,3x4,3x2,8	PCP0EPA471M04DE3
		6	0,06	118	7 500	D	7,3x4,3x2,8	PCP0EPA471M06DE3
		9	0,06	118	6 300	D	7,3x4,3x2,8	PCP0EPA471M09DE3
4 0G	68	20	0,06	28	4 400	D	7,3x4,3x2,8	PCP0GPA680M20DE3
	82	16	0,06	33	4 900	D	7,3x4,3x2,8	PCP0GPA820M16DE3
	150	18	0,06	60	4 600	D	7,3x4,3x2,8	PCP0GPA151M018DE3
6,3 0J	10	55	0,06	7	2 700	D	7,3x4,3x2,8	PCP0JPA100M55DE3
	22	45	0,06	14	3 000	D	7,3x4,3x2,8	PCP0JPA220M45DE3
	33	25	0,06	21	3 900	D	7,3x4,3x2,8	PCP0JPA330M25DE3
	47	25	0,06	30	3 900	D	7,3x4,3x2,8	PCP0JPA470M25DE3
	68	15	0,06	43	5 100	D	7,3x4,3x2,8	PCP0JPA680M15DE3
	100	15	0,06	63	5 100	D	7,3x4,3x2,8	PCP0JPA101M15DE3
	150	10	0,06	95	6 000	D	7,3x4,3x2,8	PCP0JPA151M10DE3
		15	0,06	95	5 100	D	7,3x4,3x2,8	PCP0JPA151M15DE3
	220	10	0,06	139	6 000	D	7,3x4,3x2,8	PCP0JPA221M10DE3
		15	0,06	139	5 100	D	7,3x4,3x2,8	PCP0JPA221M15DE3
8 0K	150	10	0,06	360	6 000	D	7,3x4,3x2,8	PCP0KPA151M10DE3
	200	12	0,06	480	5 600	D	7,3x4,3x2,8	PCP0KPA201M12DE3
10 1A	10	55	0,06	30	2 700	D	7,3x4,3x2,8	PCP1APA100M55DE3
	22	28	0,06	66	3 700	D	7,3x4,3x2,8	PCP1APA220M28DE3
	33	25	0,06	99	3 900	D	7,3x4,3x2,8	PCP1APA330M25DE3
	68	15	0,06	204	5 100	D	7,3x4,3x2,8	PCP1APA680M15DE3
	100	15	0,06	300	5 100	D	7,3x4,3x2,8	PCP1APA101M15DE3
16 1C	6,8	70	0,06	33	2 400	D	7,3x4,3x2,8	PCP1CPA6R8M70DE3
	10	60	0,06	48	2 600	D	7,3x4,3x2,8	PCP1CPA100M60DE3
	15	40	0,06	72	3 200	D	7,3x4,3x2,8	PCP1CPA150M40DE3
	22	30	0,06	106	3 600	D	7,3x4,3x2,8	PCP1CPA220M30DE3
	33	30	0,06	159	3 600	D	7,3x4,3x2,8	PCP1CPA330M30DE3
	47	30	0,06	226	3 600	D	7,3x4,3x2,8	PCP1CPA470M30DE3
	68	30	0,06	327	3 600	D	7,3x4,3x2,8	PCP1CPA680M30DE3
	100	40	0,06	480	3 200	D	7,3x4,3x2,8	PCP1CPA101M40DE3

TYPE E

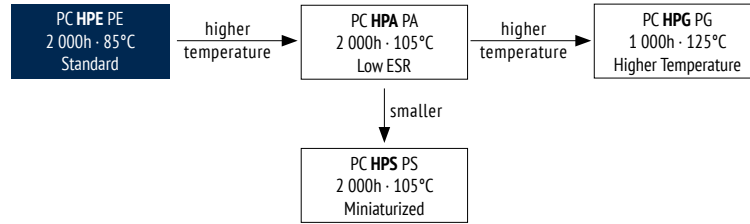
U_{RDC} (Code)	C_R Rated Capacitance 20°C, 120Hz	ESR_{max} Equivalent Series Resistance 20°C 100kHz	$\tan\delta$ Dissipation Factor 20°C 120Hz	I_{leak} Leakage Current 20°C 2min	I_{RAC} Rated Ripple Current 45°C 100kHz	Size Code	Dimension	ORDER CODE
(V)	(μF)	(m Ω)		(μA)	(mA _{rms})		(mm)	Details: Page 50
2 OD	220	9	0,06	44	6 300	E	7,3x4,3x1,1	PCPODPA221M09EE3
2,5 OE	180	9	0,06	45	6 300	E	7,3x4,3x1,1	PCPOEPA181M09EE3
4 OG	120	15	0,06	48	5 100	E	7,3x4,3x1,1	PCPOGPA121M15EE3
6,3 OJ	68	15	0,06	43	5 100	E	7,3x4,3x1,1	PCPOJ680M15EE3

TYPE B

U_{RDC} (Code)	C_R Rated Capacitance 20°C, 120Hz	ESR_{max} Equivalent Series Resistance 20°C 100kHz	$\tan\delta$ Dissipation Factor 20°C 120Hz	I_{leak} Leakage Current 20°C 2min	I_{RAC} Rated Ripple Current 45°C 100kHz	Size Code	Dimension	ORDER CODE
(V)	(μF)	(m Ω)		(μA)	(mA _{rms})		(mm)	Details: Page 50
2,5 OE	330	9	0,06	83	6 300	B	7,3x4,3x1,4	PCPOEPA331M09BE3

2 000h at 85°C

- Standard
- MLPC (Multi Layer Polymer Capacitor)
- Stacked Chip
- Solid Polymer Electrolyte



ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-55 ~ +85
Voltage Range (V)	4 ~ 6,3
Capacitance Range (μF)	330 ~ 470
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,25$
Dissipation Factor	≤ 0,06



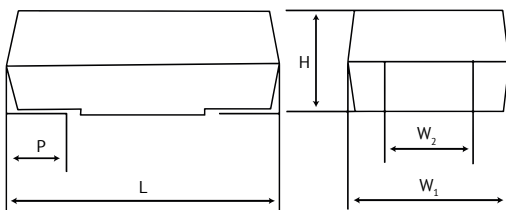
The usage at lower temperatures than indicated may be possible. Please contact the Jianghai Europe sales office for approval.

Endurance	$L_e = 2\ 000h$
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ITEM ENDURANCE LIFE $L_e = 2\ 000h$

Leakage Current	Not more than 300% of specific value
Capacitance Change	Within ± 20% of initial value
Dissipation Factor	Not more than 200% of specified value
Condition	U_R applied at 85°C

DIMENSIONS



	L +0,3/-0,1	W_1 +0,3/-0,1	H +0,3/-0,1	P +/-0,3	W_2 +/-0,1
Type V	7,3	4,3	1,9	1,3	2,4
Type D	7,3	4,3	2,8	1,3	2,4

MULTIPLIER FOR RIPPLE CURRENT

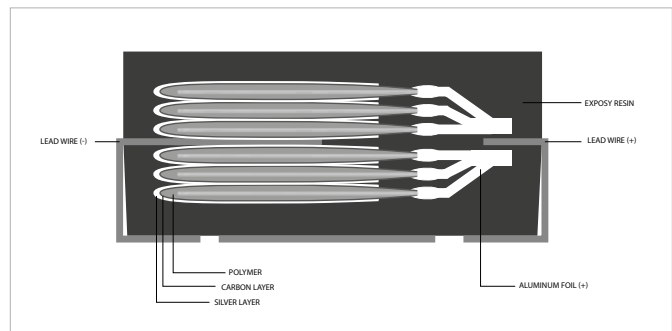
TEMPERATURE (T)	$T \leq 45^\circ C$	$45^\circ C < T \leq 65^\circ C$	$65^\circ C < T \leq 85^\circ C$
MULTIPLIER	1,0	0,7	0,25

ENVIRONMENTAL

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

Additional information for storage condition please see page 50.

INTERNAL STRUCTURE PRINCIPLE (EXAMPLE)



For detailed information, datasheets and samples please contact Jianghai Europe.

TYPE V

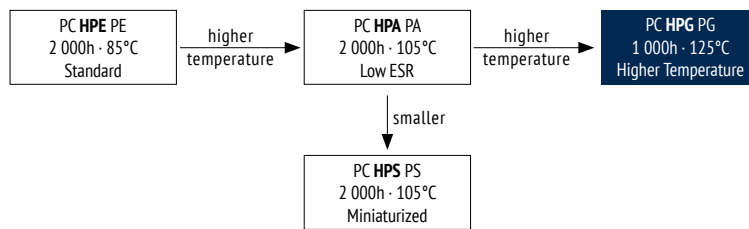
U_{RDC} (Code)	C_R Rated Capacitance 20°C, 120Hz	ESR_{max} Equivalent Series Resistance 20°C 100kHz	$\tan\delta$ Dissipation Factor 20°C 120Hz	I_{leak} Leakage Current 20°C 2min	I_{RAC} Rated Ripple Current 45°C 100kHz	Size Code	Dimension	ORDER CODE
(V)	(μF)	(m Ω)		(μA)	(mA _{RMS})		(mm)	Details: Page 50
6,3 OJ	330	9	0,06	208	6 300	V	7,3x4,3x1,9	PCP0JPE331M09VE3
		15	0,06	208	5 100	V	7,3x4,3x1,9	PCP0JPE331M15VE3
		25	0,06	208	2 400	V	7,3x4,3x1,9	PCP0JPE331M25VE3

TYPE D

U_{RDC} (Code)	C_R Rated Capacitance 20°C, 120Hz	ESR_{max} Equivalent Series Resistance 20°C 100kHz	$\tan\delta$ Dissipation Factor 20°C 120Hz	I_{leak} Leakage Current 20°C 2min	I_{RAC} Rated Ripple Current 45°C 100kHz	Size Code	Dimension	ORDER CODE
(V)	(μF)	(m Ω)		(μA)	(mA _{RMS})		(mm)	Details: Page 50
4 OG	470	9	0,06	188	6 300	D	7,3x4,3x2,8	PCP0GPE471M09DE3
		15	0,06	188	5 100	D	7,3x4,3x2,8	PCP0GPE471M15DE3
6,3 OJ	330	9	0,06	208	6 300	D	7,3x4,3x2,8	PCP0JPE331M09DE3
		15	0,06	208	5 100	D	7,3x4,3x2,8	PCP0JPE331M15DE3

1 000h at 125°C

- High Temperature
- MLPC (Multi Layer Polymer Capacitor)
- Stacked Chip
- Solid Polymer Electrolyte



ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-55 ~ +125
Voltage Range (V)	2 ~ 16
Capacitance Range (μF)	22 ~ 470
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,25$
Dissipation Factor	≤ 0,1



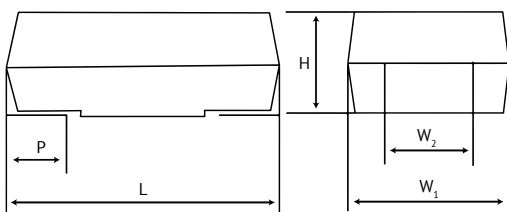
The usage at lower temperatures than indicated may be possible. Please contact the Jianghai Europe sales office for approval.

Endurance	$L_e = 1\ 000h$
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ITEM ENDURANCE LIFE $L_e = 1\ 000h$

Leakage Current	$U_R < 8V$: Not more than 300% of specific value $U_R \geq 8V$: Not more than specific value
Capacitance Change	Within ± 20% of initial value
Dissipation Factor	Not more than 200% of specified value
Condition	U_R applied at 125°C

DIMENSIONS



	L +0,3/-0,1	W_1 +0,3/-0,1	H +0,3/-0,1	P +/-0,3	W_2 +/-0,1
Type V	7,3	4,3	1,9	1,3	2,4

MULTIPLIER FOR RIPPLE CURRENT

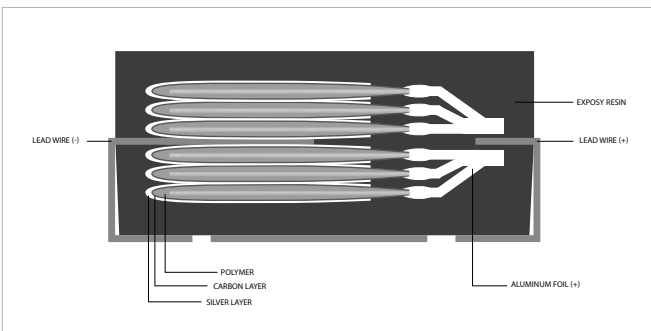
TEMPERATURE (T)	$T \leq 45^\circ C$	$45^\circ C < T \leq 85^\circ C$	$85^\circ C < T \leq 105^\circ C$	$105^\circ C < T \leq 125^\circ C$
2 ~ 6,3V	1,0	0,7	0,25	0,25
8 ~ 16V	1,0	0,8	0,5	0,25

ENVIRONMENTAL

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

Additional information for storage condition please see page 50.

INTERNAL STRUCTURE PRINCIPLE (EXAMPLE)



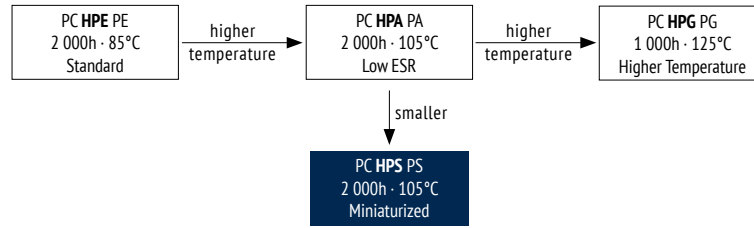
For detailed information, datasheets and samples please contact Jianghai Europe.

TYPE V

U _{RDC} (Code)	C _R Rated Capacitance 20°C, 120Hz	ESR _{max} Equivalent Series Resistance 20°C 100kHz	tanδ Dissipation Factor 20°C 120Hz	I _{leak} Leakage Current 20°C 2min	I _{RAC} Rated Ripple Current 45°C 100kHz	Size Code	Dimension (mm)	ORDER CODE Details: Page 50
2,0 OD	330	4,5	0,06	66	8 500	V	7,3x4,3x1,9	PCP0DPG331M04VE3
		6,0	0,06	66	7 500	V	7,3x4,3x1,9	PCP0DPG331M06VE3
		9,0	0,06	66	6 300	V	7,3x4,3x1,9	PCP0DPG331M09VE3
		15	0,06	66	5 100	V	7,3x4,3x1,9	PCP0DPG331M15VE3
	470	4,5	0,06	94	8 500	V	7,3x4,3x1,9	PCP0DPG471M04VE3
		6,0	0,06	94	7 500	V	7,3x4,3x1,9	PCP0DPG471M06VE3
		9,0	0,06	94	6 300	V	7,3x4,3x1,9	PCP0DPG471M09VE3
		15	0,06	94	5 100	V	7,3x4,3x1,9	PCP0DPG471M15VE3
2,5 OE	470	4,5	0,06	94	8 500	V	7,3x4,3x1,9	PCPOEPG471M04VE3
6,3 OJ	150	15	0,06	95	5 100	V	7,3x4,3x1,9	PCP0JPG151M15VE3
8,0 OK	47	40	0,06	113	3 200	V	7,3x4,3x1,9	PCP0KPG470M40VE3
	68	40	0,06	164	3 200	V	7,3x4,3x1,9	PCP0KPG680M40VE3
	100	40	0,06	240	3 200	V	7,3x4,3x1,9	PCP0KPG101M40VE3
16 1C	22	40	0,06	106	3 200	V	7,3x4,3x1,9	PCP1CPG220M40VE3
	33	40	0,06	160	3 200	V	7,3x4,3x1,9	PCP1CPG330M40VE3
	47	40	0,06	226	3 200	V	7,3x4,3x1,9	PCP1CPG470M40VE3
	56	40	0,06	269	3 200	V	7,3x4,3x1,9	PCP1CPG560M40VE3

1 000h at 105°C

- Low Profile
- MLPC (Multi Layer Polymer Capacitor)
- Stacked Chip
- Solid Polymer Electrolyte



ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-55 ~ +105
Voltage Range (V)	2 ~ 10
Capacitance Range (μF)	47 ~ 330
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,25$
Dissipation Factor	≤ 0,06



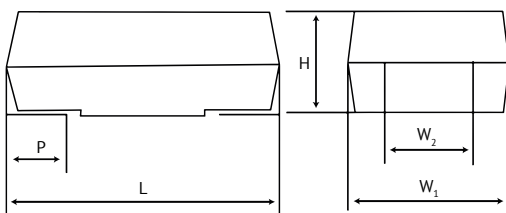
The usage at lower temperatures than indicated may be possible. Please contact the Jianghai Europe sales office for approval.

Endurance	$L_e = 2\ 000h$
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ITEM ENDURANCE LIFE $L_e = 2\ 000h$

Leakage Current	$U_R < 8V$: Not more than 300% of specific value $U_R \geq 8V$: Not more than specific value
Capacitance Change	Within ± 20% of initial value
Dissipation Factor	Not more than 200% of specified value
Condition	U_R applied at 105°C

DIMENSIONS



	L +0,3/-0,1	W ₁ +0,3/-0,1	H +0,3/-0,1	P +/-0,3	W ₂ +/-0,1
Type E	7,3	4,3	1,1	1,3	2,4
Type B	7,3	4,3	1,4	1,3	2,4

MULTIPLIER FOR RIPPLE CURRENT

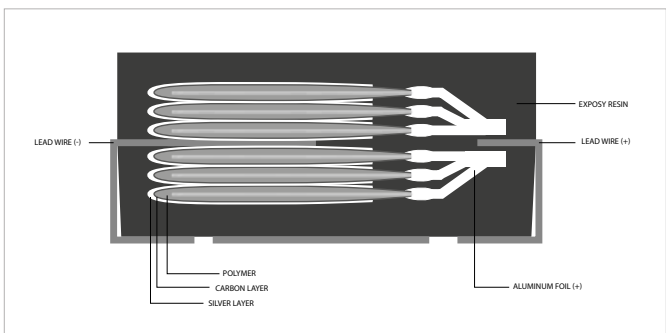
TEMPERATURE (T)	T ≤ 45°C	45°C < T ≤ 85°C	85°C < T ≤ 105°C
2V ~ 6,3V	1,0	0,7	0,25
10V	1,0	0,8	0,5

ENVIRONMENTAL

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

Additional information for storage condition please see page 50.

INTERNAL STRUCTURE PRINCIPLE (EXAMPLE)



For detailed information, datasheets and samples please contact Jianghai Europe.

TYPE E

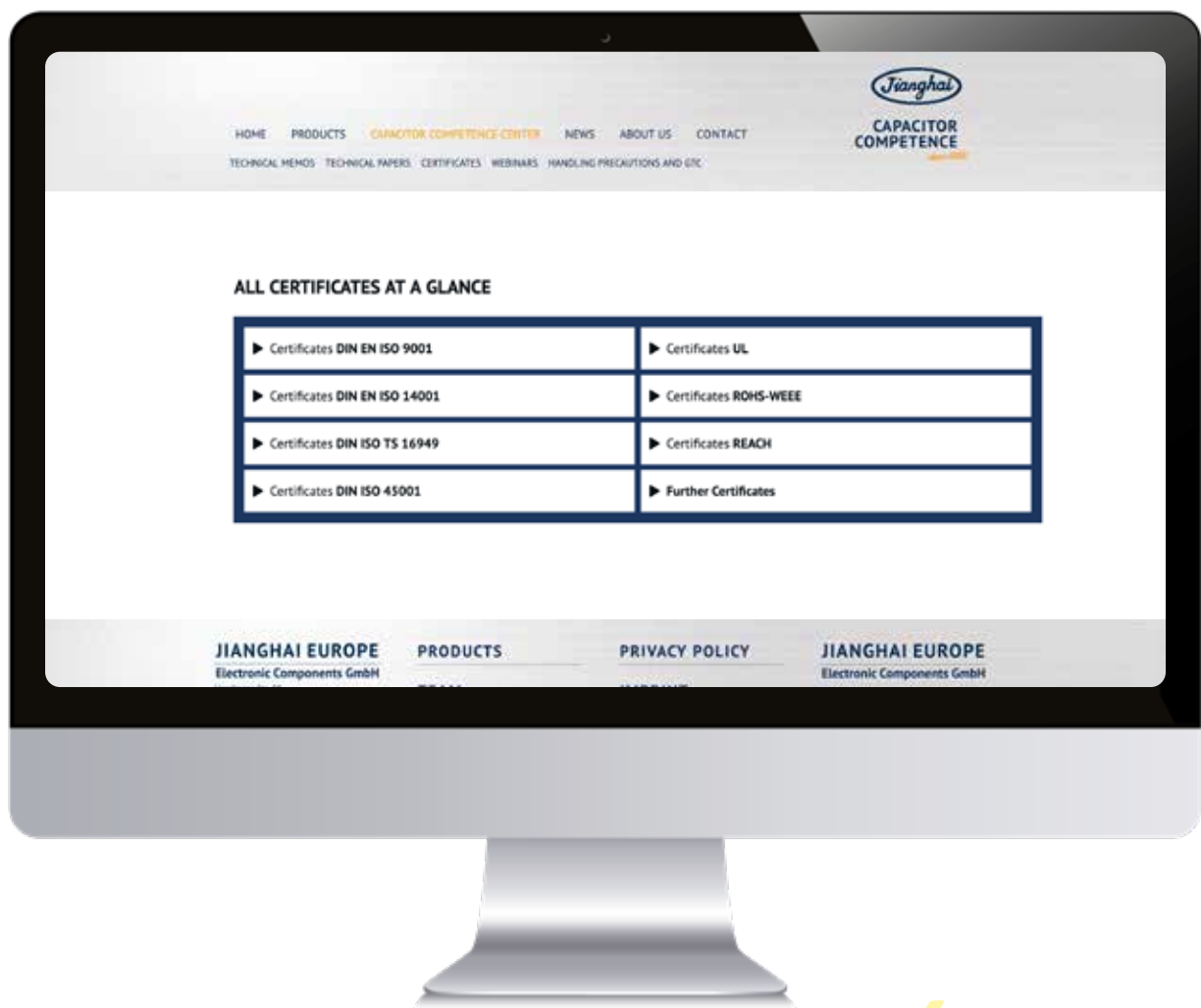
U_{RDC} (Code)	C_R Rated Capacitance 20°C, 120Hz	ESR_{max} Equivalent Series Resistance 20°C 100kHz	$\tan\delta$ Dissipation Factor 20°C 120Hz	I_{leak} Leakage Current 20°C 2min	I_{RAC} Rated Ripple Current 45°C 100kHz	Size Code	Dimension	ORDER CODE
(V)	(μF)	(m Ω)		(μA)	(mA _{RMS})		(mm)	Details: Page 50
2,0 OD	220	6	0,06	44	7 500	E	7,3x4,3x1,1	PCP0DPS221M06EE3
2,5 OE	180	6	0,06	45	7 500	E	7,3x4,3x1,1	PCP0EPS181M06EE3
4 OG	120	15	0,06	48	5 100	E	7,3x4,3x1,1	PCP0GPS121M15EE3
6,3 OJ	68	15	0,06	43	5 100	E	7,3x4,3x1,1	PCP0JPS680M15EE3
10 1A	47	40	0,06	141	3 200	E	7,3x4,3x1,1	PCP1APS470M40EE3

TYPE B

U_{RDC} (Code)	C_R Rated Capacitance 20°C, 120Hz	ESR_{max} Equivalent Series Resistance 20°C 100kHz	$\tan\delta$ Dissipation Factor 20°C 120Hz	I_{leak} Leakage Current 20°C 2min	I_{RAC} Rated Ripple Current 45°C 100kHz	Size Code	Dimension	ORDER CODE
(V)	(μF)	(m Ω)		(μA)	(mA _{RMS})		(mm)	Details: Page 50
2,0 OD	330	6	0,06	66	7 500	B	7,3x4,3x1,4	PCP0DPS331M06BE3
2,5 OE	270	6	0,06	68	7 500	B	7,3x4,3x1,4	PCP0EPS271M06BE3
4 OG	180	15	0,06	72	5 100	B	7,3x4,3x1,4	PCP0GPS181M15BE3
6,3 OJ	100	15	0,06	63	5 100	B	7,3x4,3x1,4	PCP0JPS101M15BE3
10 1A	68	40	0,06	204	3 200	B	7,3x4,3x1,4	PCP1APS680M40BE3

GOOD TO KNOW:

Excellent service, vast competence and a high level of process quality are the top priorities of JIANGHAI EUROPE. This also includes the continuous optimization of the company's business and logistics processes and their certification:



<https://jianghai-europe.com>



HYBRID POLYMER CAPACITORS SMT TYPE

Hybrid Polymer: Order Code SMT 64

Hybrid Polymer: Technical Specifications SMT 65

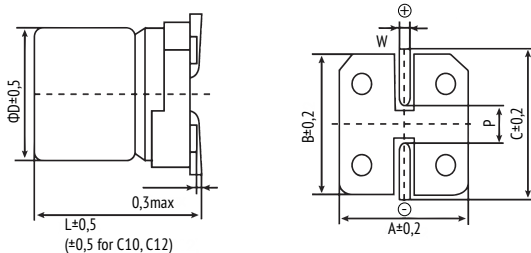
SERIES	CODE	TYPE	TEMPERATURE	VOLTAGE	LIFETIME	INFO	
PH VA	VA	SMT	105°C	25~80V	5 000h	Standard	66
PH VB	VB	SMT	125°C	25~80V	4 000h	High Temperature	68
PH VD	VD	SMT	125°C	25~63V	4 000h	Low ESR	70
PH VE	VE	SMT	105°C	25~80V	10 000h	Low ESR	72
PH VF	VF	SMT	135°C	25~63V	4 000h	Low ESR +++PRELIMINARY+++	74

[illegible]

PH	V		1V		VA		101		M		C10		FV		TS		W		X		E3	JExxxxx
Techno- logy	Terminal Type		Rated Voltage Code		Series Code		Capa- citan- ce Code (µF)		Capacitance Tolerance		Size Code* (ΦDxL)		Lead Form		Pitch		Material Code		Plate		for internal use	for Specials only
PH = Hybrid Capacitor	SMT	V	25V	1E	PH VA	VA	47	470	±20%	M	B10	8,0 x 10,0	SMT	FV	SMT	TS	Laminated	W	Standard	X		
			35V	1V	PH VA	VB	100	101	±10%	K	C10	10 x 10,0							Vibration improved	G		
			50V	1H	PH VD	VD	1000	102	+30/-10%	Q	C12	10 x 12,2										
			63V	1J	PH VE	VE			preferred	C16	10 x 16,0											
			80V	1K	PH VF	VF																

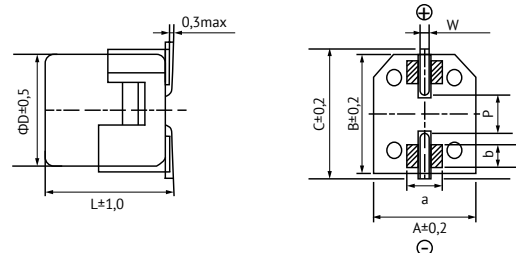
*Vibration improved design L=10,2mm

DIMENSIONS FOR SMT TYPE STANDARD



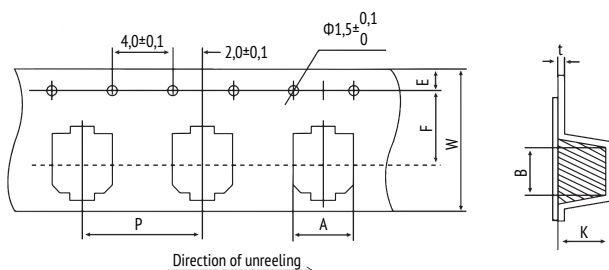
Size Code	ϕD	L	A	B	C	W	P $\pm 0,2$
F80	6,3	7,7	6,6	6,6	7,3	0,5-0,8	2,0
B10	8,0	10,0	8,3	8,3	9,0	0,7-1,1	3,2
C10	10,0	10,0	10,3	10,3	11,0	0,7-1,1	4,6
C12	10,0	12,2	10,3	10,3	11,0	0,7-1,1	4,6
C16	10,0	16,0	10,3	10,3	11,0	0,7-1,1	4,6

VIBRATION IMPROVED DESIGN



Size Code	ϕD	L	A	B	C	W	P $\pm 0,2$	a	b
B10	8,0	10,0	8,3	8,8	9,2	0,7-1,1	3,1	4,0	3,0
C10	10,0	10,0	10,3	10,8	11,2	0,7-1,1	4,6	4,4	3,2
C12	10,0	12,2	10,3	10,8	11,2	0,7-1,1	4,6	4,4	3,2
C16	10,0	16,0	10,3	10,8	11,2	0,7-1,1	4,6	4,4	3,2

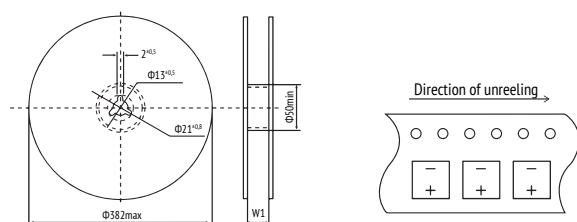
DIMENSIONS FOR TAPING



$E = 1,75 \pm 0,1 \text{ mm}$; $t = 0,4 \pm 0,1 \text{ mm}$

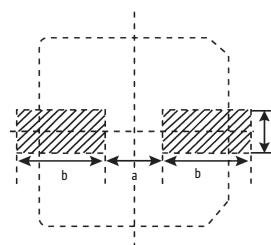
Dimension	A	B	W	F	P	K
Case Code	$\pm 0,2$	$\pm 0,2$	$\pm 0,3$	$\pm 0,1$	$\pm 0,1$	$\pm 0,2$
F80	7,0	7,0	16,0	7,5	12,0	8,3
B10	8,7	8,7	24,0	11,5	16,0	11,0
C10	10,7	10,7	24,0	11,5	16,0	11,0
C12	10,7	10,7	24,0	11,5	16,0	13,0
C16	10,7	10,7	24,0	11,5	16,0	17,0

REEL DIMENSIONS



Case Code	Quantity (pcs/reel)	W_1 (mm)
F80	900	24,5
B10	500	24,5
C10	500	24,5
C12	400	24,5
C16	300	24,5

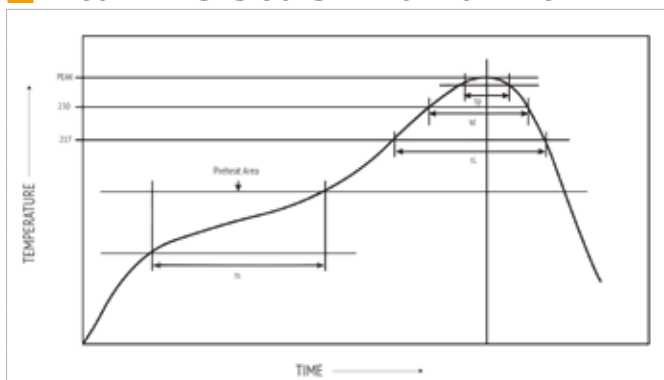
RECOMMENDED SOLDERING PAD DIMENSIONS



ϕD (code)	a	b	c
$\phi 6,3$ (F)	1,9	3,5	1,6
$\phi 8$ (B)	3,1	4,2	2,2
$\phi 10$ (C)	4,5	4,4	2,2

in mm

RECOMMENDED SOLDERING PROFILE SMT

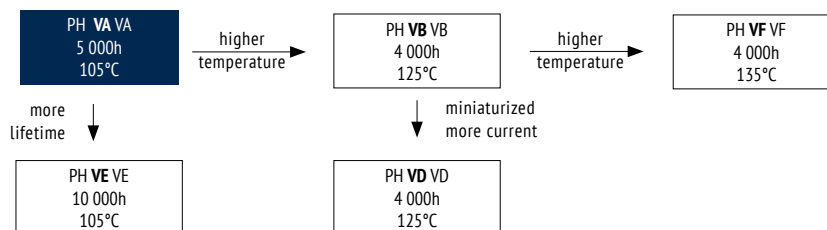


Only 1 reflow soldering cycle allowed. All temperatures are measured on the topside of the Al-can.

Preheat 150~180°C	Time maintained above 217°C	Time maintained above 230°C	Peak Temperature
60~120 seconds	50 seconds max.	40 seconds max.	260°C max.

5 000h
at 105°C

- SMT
- Low ESR
- Hybrid Polymer Electrolyte
- High Vibration (optional)



ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-55 ~ +105
Voltage Range (V)	25 ~ 80
Capacitance Range (μF)	33 ~ 390
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,15$
Dissipation Factor	at 20°C, 120Hz, see table
Leakage Current (μA)	at 20°C after 2 minutes
Temperature Stability	$Z_{-55°C} / Z_{+20°C} \leq 2,0$ $Z_{-25°C} / Z_{+20°C} \leq 1,5$



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

ITEM	LOAD LIFETIME L_0	DAMP HEAT (Steady State)	RESISTANCE TO SOLDERING HEAT SMT
Lifetime	5 000h	2 000h (1 000h for ø 6,3V)	5sec, Reflow
Leakage Current	≤ the specified value	≤ the specified value (after voltage processing)	≤ the specified value (after voltage processing)
Capacitance Change	Within ± 30% of initial value	Within ± 30% of initial value	Within ± 10% of initial value
Dissipation Factor	≤ 200% of specified value	≤ 200% of specified value	≤ specified value
ESR Change	≤ 200% of specified value	≤ 200% of specified value	≤ specified value
Condition	105°C U_R I_R $U_{MAX} = U_R$	85°C (85~90% relative humidity) U_R $I_R = 0$	260°C±5°C
dTo	10K		details see page 8, 65

MULTIPLIER FOR RIPPLE CURRENT (FREQUENCY COEFFICIENT)

Frequency μF	120Hz	1kHz	5kHz	10kHz	20kHz	30kHz	100~500kHz
33	0,07	0,30	0,50	0,60	0,70	0,75	1,00
47~180	0,10	0,40	0,60	0,70	0,80	0,80	1,00
220~390	0,13	0,45	0,65	0,75	0,85	0,85	1,00

Multipliers for typical operating conditions.

ENVIRONMENTAL

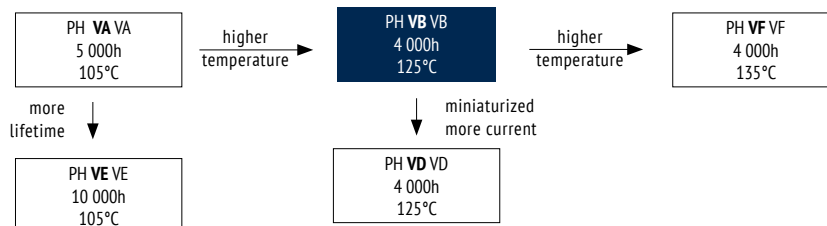
The products are RoHS, WEEE and REACH compliant. The detailed version please see separate "Environmental Certificates" document or www.jianghai-europe.com

U _{RDC} Rated Voltage Code	C _R Rated Capacitance	ESR _{max} Equivalent Series Resistance	tanδ Dissipation Factor	I _{leak} Leakage Current	I _{max, 105°C} Max. Allowed Ripple Current	Size* øD x L	Order Code ◇ = vibration style possible
(V)	(µF)	(mΩ)	(20°C 120Hz)	(µA)	(mArms)	(mm)	Details: Page 64
25 1E	68	30	0,14	17	2 000	6,3 x 7,7	PHV1EVA680MF80FVTSWXE3
	100	30	0,14	25	2 000	6,3 x 7,7	PHV1EVA101MF80FVTSWXE3
	150	27	0,14	38	2 300	8 x 10	PHV1EVA151MB10FVTSW◇E3
	220	27	0,14	55	2 300	8 x 10	PHV1EVA221MB10FVTSW◇E3
	330	20	0,14	83	2 500	10 x 10	PHV1EVA331MC10FVTSW◇E3
	390	20	0,14	98	2 500	10 x 10	PHV1EVA391MC10FVTSW◇E3
35 1V	68	35	0,12	24	2 000	6,3 x 7,7	PHV1VVA680MF80FVTSWXE3
	100	27	0,12	35	2 300	8 x 10	PHV1VVA101MB10FVTSW◇E3
	150	27	0,12	53	2 300	8 x 10	PHV1VVA151MB10FVTSW◇E3
	220	20	0,12	77	2 500	10 x 10	PHV1VVA221MC10FVTSW◇E3
	270	20	0,12	95	2 500	10 x 10	PHV1VVA271MC10FVTSW◇E3
50 1H	33	50	0,10	17	1 600	6,3 x 7,7	PHV1HVA330MF80FVTSWXE3
		30	0,10	17	1 800	8 x 10	PHV1HVA330MB10FVTSW◇E3
	47	30	0,10	24	1 800	8 x 10	PHV1HVA470MB10FVTSW◇E3
	56	30	0,10	28	1 800	8 x 10	PHV1HVA560MB10FVTSW◇E3
	68	30	0,10	34	1 800	8 x 10	PHV1HVA680MB10FVTSW◇E3
	100	28	0,10	50	2 000	10 x 10	PHV1HVA101MC10FVTSW◇E3
	120	28	0,10	60	2 000	10 x 10	PHV1HVA121MC10FVTSW◇E3
63 1J	33	40	0,08	21	1 700	8 x 10	PHV1JVA330MB10FVTSW◇E3
	47	40	0,08	30	1 700	8 x 10	PHV1JVA470MB10FVTSW◇E3
	56	30	0,08	36	1 800	10 x 10	PHV1JVA560MC10FVTSW◇E3
	82	30	0,08	52	1 800	10 x 10	PHV1JVA820MC10FVTSW◇E3
	100	30	0,08	63	1 800	10 x 10	PHV1JVA101MC10FVTSW◇E3
80 1K	56	36	0,08	45	1 700	10 x 10	PHV1KVA560MC10FVTSW◇E3

*Vibration improved design add +0,2mm on length L

4 000h
at 125°C

- SMT
- Low ESR
- Hybrid Polymer Electrolyte
- High Vibration (optional)



ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-55 ~ +125
Voltage Range (V)	25 ~ 80
Capacitance Range (μF)	33 ~ 470
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,15$
Dissipation Factor	at 20°C, 120Hz, see table
Leakage Current (μA)	at 20°C after 2 minutes
Temperature Stability	$Z_{-55^\circ\text{C}} / Z_{+20^\circ\text{C}} \leq 2,0$ $Z_{-25^\circ\text{C}} / Z_{+20^\circ\text{C}} \leq 1,5$



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

ITEM	LOAD LIFETIME L_0	DAMP HEAT (Steady State)	RESISTANCE TO SOLDERING HEAT SMT
Lifetime	4 000h	2 000h (1 000h for ø 6,3V)	5sec, Reflow
Leakage Current	≤ the specified value	≤ the specified value (after voltage processing)	≤ the specified value (after voltage processing)
Capacitance Change	Within ± 30% of initial value	Within ± 30% of initial value	Within ± 10% of initial value
Dissipation Factor	≤ 200% of specified value	≤ 200% of specified value	≤ specified value
ESR Change	≤ 200% of specified value	≤ 200% of specified value	≤ specified value
Condition	125°C U_R I_R $U_{MAX} = U_R$	85°C (85-90% relative humidity) U_R $I_R = 0$	260°C±5°C
dTo	6K		details see page 8, 65

MULTIPLIER FOR RIPPLE CURRENT (FREQUENCY COEFFICIENT)

Frequency μF	120Hz	1kHz	5kHz	10kHz	20kHz	30kHz	100~500kHz
33	0,07	0,30	0,50	0,60	0,70	0,75	1,00
47~150	0,10	0,40	0,60	0,70	0,80	0,80	1,00
220~470	0,13	0,45	0,65	0,75	0,85	0,85	1,00

Multipliers for typical operating conditions.

ENVIRONMENTAL

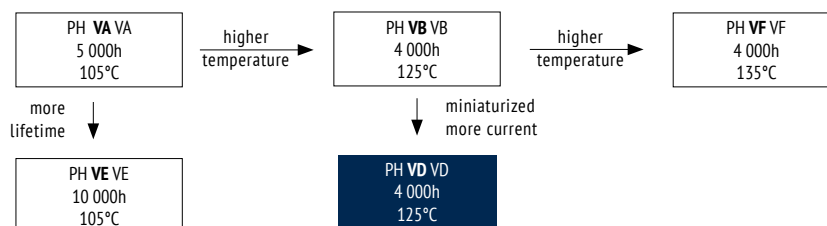
The products are RoHS, WEEE and REACH compliant. The detailed version please see separate "Environmental Certificates" document or www.jianghai-europe.com

U_{RDC} Rated Voltage Code	C_R Rated Capacitance	ESR_{max} Equivalent Series Resistance	$\tan\delta$ Dissipation Factor	I_{leak} Leakage Current	$I_{max, 125^\circ C}$ Max. Allowed Ripple Current	Size* $\varnothing D \times L$	Order Code ◇ = vibration style possible Details: Page 64
(V)	(μF)	(m Ω)	(20°C 120Hz)	(μA)	(mArms)	(mm)	
25 1E	68	30	0,14	17	1 400	6,3 x 7,7	PHV1EVB680MF80FVTSWXE3
	100	30	0,14	25	1 400	6,3 x 7,7	PHV1EVB101MF80FVTSWXE3
	220	27	0,14	55	1 600	8 x 10	PHV1EVB221MB10FVTSW◇E3
	330	20	0,14	83	2 000	10 x 10	PHV1EVB331MC10FVTSW◇E3
	390	20	0,14	98	2 000	10 x 10	PHV1EVB391MC10FVTSW◇E3
	470	20	0,14	118	2 100	10 x 10	PHV1EVB471MC10FVTSW◇E3
35 1V	68	35	0,12	24	1 400	6,3 x 7,7	PHV1VVB680MF80FVTSWXE3
	100	27	0,12	35	1 600	8 x 10	PHV1VVB101MB10FVTSW◇E3
	150	27	0,12	53	1 600	8 x 10	PHV1VVB151MB10FVTSW◇E3
	220	20	0,12	77	2 000	10 x 10	PHV1VVB221MC10FVTSW◇E3
	270	20	0,12	95	2 000	10 x 10	PHV1VVB271MC10FVTSW◇E3
50 1H	33	40	0,10	17	1 100	6,3 x 7,7	PHV1HVB330MF80FVTSWXE3
	47	30	0,10	24	1 250	8 x 10	PHV1HVB470MB10FVTSW◇E3
	68	30	0,10	34	1 250	8 x 10	PHV1HVB680MB10FVTSW◇E3
	82	30	0,10	41	1 500	10 x 10	PHV1HVB820MC10FVTSW◇E3
	100	28	0,10	50	1 600	10 x 10	PHV1HVB101MC10FVTSW◇E3
63 1J	33	40	0,08	21	1 100	8 x 10	PHV1JVB330MB10FVTSW◇E3
	47	40	0,08	30	1 100	8 x 10	PHV1JVB470MB10FVTSW◇E3
	56	30	0,08	36	1 400	10 x 10	PHV1JVB560MC10FVTSW◇E3
	68	30	0,08	43	1 400	10 x 10	PHV1JVB680MC10FVTSW◇E3
80 1K	33	36	0,08	27	1 360	10 x 10	PHV1KVB330MC10FVTSW◇E3

*Vibration improved design add +0,2mm on length L

**4 000h
at 125°C**

- SMT
- High Ripple Current
- Low ESR
- Hybrid Polymer Electrolyte
- High Vibration (optional)

**ITEM CHARACTERISTICS**

Operating Temperature Range (°C)	-55 ~ +125
Voltage Range (V)	25 ~ 63
Capacitance Range (μF)	150 ~ 560
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,15$
Dissipation Factor	at 20°C, 120Hz, see table
Leakage Current (μA)	at 20°C after 2 minutes
Temperature Stability	$Z_{-55°C} / Z_{+20°C} \leq 2,0$ $Z_{-25°C} / Z_{+20°C} \leq 1,5$



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

ITEM	LOAD LIFETIME L_0	DAMP HEAT (Steady State)	RESISTANCE TO SOLDERING HEAT SMT
Lifetime	4 000h	2 000h	5sec, Reflow
Leakage Current	$\leq$ the specified value	$\leq$ the specified value (after voltage processing)	$\leq$ the specified value (after voltage processing)
Capacitance Change	Within $\pm 30\%$ of initial value	Within $\pm 30\%$ of initial value	Within $\pm 10\%$ of initial value
Dissipation Factor	$\leq 200\%$ of specified value	$\leq 200\%$ of specified value	$\leq$ specified value
ESR Change	$\leq 200\%$ of specified value	$\leq 200\%$ of specified value	$\leq$ specified value
Condition	125°C U_R I_R $U_{MAX}=U_R$	85°C (85-90% relative humidity) U_R $I_R = 0$	260°C $\pm 5^\circ$ C
dTo	10K		details see page 8, 65

MULTIPLIER FOR RIPPLE CURRENT (FREQUENCY COEFFICIENT)

Frequency μF	120Hz	1kHz	5kHz	10kHz	20kHz	30kHz	100~500kHz
150~560	0,15	0,45	0,65	0,75	0,85	0,85	1,00

Multipliers for typical operating conditions.

ENVIRONMENTAL

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

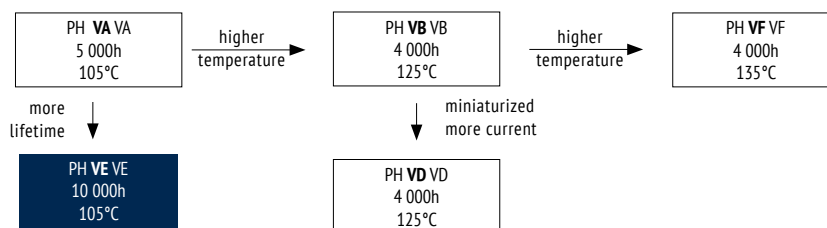


U_{RDC} Rated Voltage Code	C_R Rated Capacitance	ESR_{max} Equivalent Series Resistance	$\tan\delta$ Dissipation Factor	I_{leak} Leakage Current	$I_{max,125^\circ C}$ Max. Allowed Ripple Current	Size* $\varnothing D \times L$	Order Code ◇ = vibration style possible Details: Page 64
(V)	20°C 120Hz (μF)	20°C 100kHz (m Ω)	20°C 120Hz	20°C 2min (μA)	125°C 100kHz (mA rms)	(mm)	
25 1E	270	27	0,14	68	2 000	8 x 10	PHV1EVD271MB10FVTSW◇E3
	390	20	0,14	98	2 800	10 x 10	PHV1EVD391MC10FVTSW◇E3
	470	20	0,14	118	2 800	10 x 10	PHV1EVD471MC10FVTSW◇E3
		16	0,14	118	3 500	10 x 12,2	PHV1EVD471MC12FVTSW◇E3
	560	13	0,14	140	4 000	10 x 16	PHV1EVD561MC16FVTSW◇E3
35 1V	180	27	0,12	63	2 000	8 x 10	PHV1VVD181MB10FVTSW◇E3
	330	20	0,12	116	2 800	10 x 10	PHV1VVD331MC10FVTSW◇E3
		16	0,12	116	3 500	10 x 12,2	PHV1VVD331MC12FVTSW◇E3
	470	13	0,12	165	4 000	10 x 16	PHV1VVD471MC16FVTSW◇E3
50 1H	150	17	0,10	75	3 200	10 x 12,2	PHV1HVD151MC12FVTSW◇E3
	220	14	0,10	110	3 700	10 x 16	PHV1HVD221MC16FVTSW◇E3
63 1J	100	19	0,08	63	3 000	10 x 12,2	PHV1JVD101MC12FVTSW◇E3
	150	15	0,08	95	3 500	10 x 16	PHV1JVD151MC16FVTSW◇E3

*Vibration improved design add +0,2mm on length L

**10 000h
at 105°C**

- SMT
- Low ESR
- Hybrid Polymer Electrolyte
- High Vibration (optional)

**ITEM CHARACTERISTICS**

Operating Temperature Range (°C)	-55 ~ +105
Voltage Range (V)	25 ~ 80
Capacitance Range (μF)	33 ~ 390
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,15$
Dissipation Factor	at 20°C, 120Hz, see table
Leakage Current (μA)	at 20°C after 2 minutes
Temperature Stability	$Z_{-55^\circ\text{C}} / Z_{+20^\circ\text{C}} \leq 2,0$ $Z_{-25^\circ\text{C}} / Z_{+20^\circ\text{C}} \leq 1,5$



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

ITEM	LOAD LIFETIME L_o	DAMP HEAT (Steady State)	RESISTANCE TO SOLDERING HEAT SMT
Lifetime	10 000h	2 000h (1 000h for ø 6,3V)	5sec, Reflow
Leakage Current	≤ the specified value	≤ the specified value (after voltage processing)	≤ the specified value (after voltage processing)
Capacitance Change	Within ± 30% of initial value	Within ± 30% of initial value	Within ± 10% of initial value
Dissipation Factor	≤ 200% of specified value	≤ 200% of specified value	≤ specified value
ESR Change	≤ 200% of specified value	≤ 200% of specified value	≤ specified value
Condition	105°C U_R I_R $U_{MAX} = U_R$	85°C (85~90% relative humidity) U_R $I_R = 0$	260°C±5°C
dTo	10K		details see page 8, 65

MULTIPLIER FOR RIPPLE CURRENT (FREQUENCY COEFFICIENT)

Frequency μF	120Hz	1kHz	5kHz	10kHz	20kHz	30kHz	100~500kHz
33	0,07	0,30	0,50	0,60	0,70	0,75	1,00
47~180	0,10	0,40	0,60	0,70	0,80	0,80	1,00
220~390	0,13	0,45	0,65	0,75	0,85	0,85	1,00

Multipliers for typical operating conditions.

ENVIRONMENTAL

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

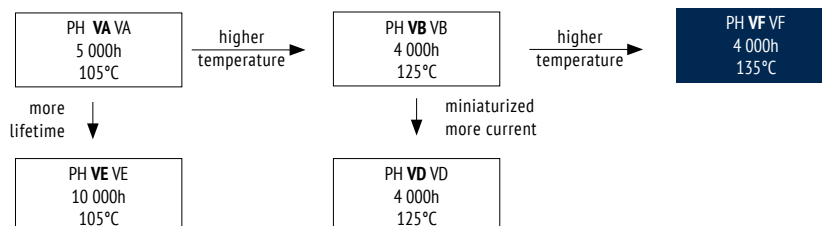


U _{RDC} Rated Voltage Code	C _R Rated Capacitance	ESR _{max} Equivalent Series Resistance	tanδ Dissipation Factor	I _{leak} Leakage Current	I _{max,105°C} Max. Allowed Ripple Current	Size* øD x L	Order Code
(V)	(µF)	(mΩ)	(20°C 120Hz)	(µA)	(mA _{rms})	(mm)	Details: Page 64
25 1E	68	30	0,14	17	2 000	6,3 x 7,7	PHV1EVE680MF80FVTSWXE3
	100	30	0,14	25	2 000	6,3 x 7,7	PHV1EVE101MF80FVTSWXE3
	150	27	0,14	38	2 300	8 x 10	PHV1EVE151MB10FVTSW [◇] E3
	220	27	0,14	55	2 300	8 x 10	PHV1EVE221MB10FVTSW [◇] E3
	330	20	0,14	83	2 500	10 x 10	PHV1EVE331MC10FVTSW [◇] E3
	390	20	0,14	98	2 500	10 x 10	PHV1EVE391MC10FVTSW [◇] E3
35 1V	68	35	0,12	24	2 000	6,3 x 7,7	PHV1VVE680MF80FVTSWXE3
	100	27	0,12	35	2 300	8 x 10	PHV1VVE101MB10FVTSW [◇] E3
	150	27	0,12	53	2 300	8 x 10	PHV1VVE151MB10FVTSW [◇] E3
	220	20	0,12	77	2 500	10 x 10	PHV1VVE221MC10FVTSW [◇] E3
	270	20	0,12	95	2 500	10 x 10	PHV1VVE271MC10FVTSW [◇] E3
50 1H	33	40	0,10	17	1 600	6,3 x 7,7	PHV1HVE330MF80FVTSWXE3
		30	0,10	17	1 800	8 x 10	PHV1HVE330MB10FVTSW [◇] E3
	47	30	0,10	24	1 800	8 x 10	PHV1HVE470MB10FVTSW [◇] E3
	56	30	0,10	28	1 800	8 x 10	PHV1HVE560MB10FVTSW [◇] E3
	68	30	0,10	34	1 800	8 x 10	PHV1HVE680MB10FVTSW [◇] E3
	100	28	0,10	50	2 000	10 x 10	PHV1HVE101MC10FVTSW [◇] E3
63 1J	33	40	0,08	21	1 700	8 x 10	PHV1JVE330MB10FVTSW [◇] E3
	47	40	0,08	30	1 700	8 x 10	PHV1JVE470MB10FVTSW [◇] E3
	56	30	0,08	36	1 800	10 x 10	PHV1JVE560MC10FVTSW [◇] E3
	82	30	0,08	52	1 800	10 x 10	PHV1JVE820MC10FVTSW [◇] E3
80 1K	33	36	0,08	27	1 700	10 x 10	PHV1KVE330MC10FVTSW [◇] E3

*Vibration improved design add 0,2mm on length L

4 000h
at 135°C

- SMT
- Low ESR
- Hybrid Polymer Electrolyte
- High Vibration (optional)



ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-55 ~ +135
Voltage Range (V)	25 ~ 63
Capacitance Range (μF)	33 ~ 560
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,15$
Dissipation Factor	at 20°C, 120Hz, see table
Leakage Current (μA)	at 20°C after 2 minutes
Temperature Stability	$Z_{-55°C} / Z_{+20°C} \leq 2,0$ $Z_{-25°C} / Z_{+20°C} \leq 1,5$



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

ITEM	LOAD LIFETIME L_0	DAMP HEAT (Steady State)	RESISTANCE TO SOLDERING HEAT SMT
Lifetime	4 000h	2 000h	5sec, Reflow
Leakage Current	≤ the specified value	≤ the specified value (after voltage processing)	≤ the specified value (after voltage processing)
Capacitance Change	Within ± 30% of initial value	Within ± 30% of initial value	Within ± 10% of initial value
Dissipation Factor	≤ 200% of specified value	≤ 200% of specified value	≤ specified value
ESR Change	≤ 200% of specified value	≤ 200% of specified value	≤ specified value
Condition	135°C U_R I_R $U_{MAX} = U_R$	85°C (85~90% relative humidity) U_R $I_R = 0$	260°C±5°C
dTo	5K		details see page 8, 65

MULTIPLIER FOR RIPPLE CURRENT (FREQUENCY COEFFICIENT)

Frequency μF	120Hz	1kHz	5kHz	10kHz	20kHz	30kHz	100~500kHz
33	0,07	0,30	0,50	0,60	0,70	0,75	1,00
47~180	0,10	0,40	0,60	0,70	0,80	0,80	1,00
220~390	0,13	0,45	0,65	0,75	0,85	0,85	1,00

Multipliers for typical operating conditions.

ENVIRONMENTAL

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

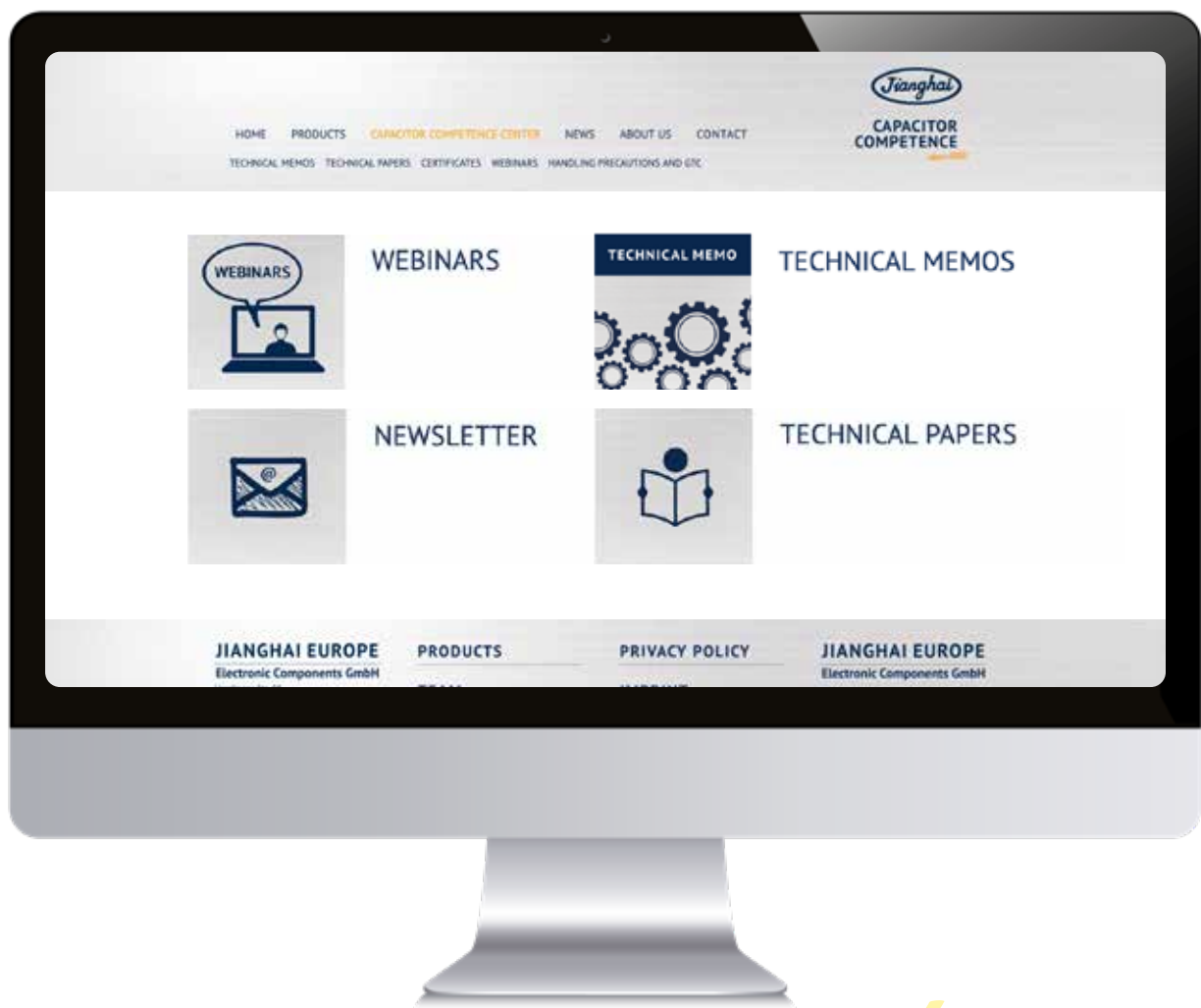
U_{RDC} Rated Voltage Code	C_R Rated Capacitance	ESR_{max} Equivalent Series Resistance	$\tan\delta$ Dissipation Factor	I_{leak} Leakage Current	$I_{max, 135^\circ C}$ Max. Allowed Ripple Current	Size* $\varnothing D \times L$	Order Code ◇ = vibration style possible Details: Page 64
(V)	(μF)	(m Ω)	(20°C 120Hz)	(μA)	(mArms) 135°C 100kHz	(mm)	
25 1E	220	27	0,14	55	1 600	8 x 10	PHV1EVF221MB10FVTSW◇E3
	330	20	0,14	83	2 000	10 x 10	PHV1EVF331MC10FVTSW◇E3
	470	16	0,14	118	2 500	10 x 12,2	PHV1EVF471MC12FVTSW◇E3
	560	14	0,14	140	2 500	10 x 16	PHV1EVF561MC16FVTSW◇E3
35 1V	150	27	0,12	53	1 600	8 x 10	PHV1VVF151MB10FVTSW◇E3
	270	20	0,12	95	2 000	10 x 10	PHV1VVF271MC10FVTSW◇E3
	330	17	0,12	116	2 400	10 x 12,2	PHV1VVF331MC12FVTSW◇E3
	470	14	0,12	165	2 500	10 x 16	PHV1VVF471MC16FVTSW◇E3
50 1H	47	30	0,10	24	1 250	8 x 10	PHV1HVF470MB10FVTSW◇E3
	100	25	0,10	50	1 600	10 x 10	PHV1HVF101MC10FVTSW◇E3
	120	25	0,10	60	1 600	10 x 10	PHV1HVF121MC10FVTSW◇E3
	150	19	0,10	75	2 250	10 x 12,2	PHV1HVF151MC12FVTSW◇E3
	220	16	0,10	110	2 400	10 x 16	PHV1HVF221MC16FVTSW◇E3
63 1J	33	40	0,08	21	1 100	8 x 10	PHV1JVF330MB10FVTSW◇E3
	56	30	0,08	36	1 400	10 x 10	PHV1JVF560MC10FVTSW◇E3
	100	22	0,08	63	2 100	10 x 12,2	PHV1JVF101MC12FVTSW◇E3
	150	16	0,08	95	2 400	10 x 16	PHV1JVF151MC16FVTSW◇E3

*Vibration improved design add 0,2mm on length L

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>



HYBRID POLYMER CAPACITORS RADIAL TYPE

Hybrid Polymer: Order Code RADIAL 78

Hybrid Polymer: Technical Specifications RADIAL 79

SERIES	CODE	TYPE	TEMPERATURE	VOLTAGE	LIFETIME	INFO	
PH LA	LA	RADIAL	105°C	25~80V	5 000h	Low ESR	80
PH LB	LB	RADIAL	125°C	25~80V	4 000h	Low ESR	82
PH LD	LD	RADIAL	125°C	25~63V	4 000h	Low ESR	84
PH LE	LE	RADIAL	105°C	25~80V	10 000h	Low ESR	86
PH LF	LF	RADIAL	135°C	25~63V	4 000h	Low ESR +++PRELIMINARY+++	88



ORDER CODE HYBRID POLYMER RADIAL TYPE

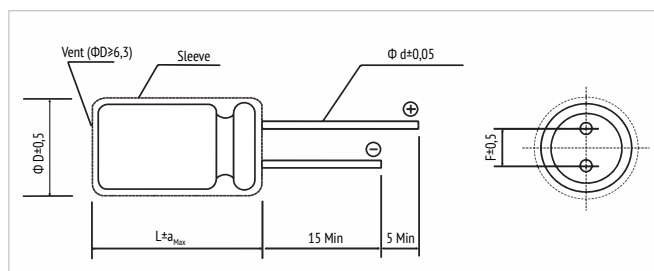
PH	R	1V	LA	101	M	C10	LL	50	W	P	E3	JExxxxx
Techno- logy	Terminal Type	Rated Voltage Code	Series Code	Capa- citan- ce Code (µF)	Capacitance Tolerance	Size Code (ΦDxL)	Lead Form	Pitch	Material Code	Rubber Code	for internal use	for Specials only
PH = Hybrid Capacitor	Radial R	25V 1E	PH LA LA	47 470	±20% M	BAB 8,0 x 11,5	Taped FF	3,5 mm 35	Laminated W	Standard -		
		35V 1V	PH LB LB	100 101	±10% K	C10 10 x 10,0	Long Lead LL	5,0 mm 50		Flat Rubber P		
		50V 1H	PH LD LD	1000 102	+30/-10% Q	CAC 10 x 12,5	Cut 5,0 mm CB			Stand-Off T		
		63V 1J	PH LE LE		preferred	C16 10 x 16	Cut 4,5 mm CC					
		80V 1K	PH LF LF				Cut 4,0 mm CD					
							Cut 3,5 mm CE					
							Cut 3,0 mm CF					





DIMENSIONS FOR LOOSE, LONG-LEAD TYPE (BULK)

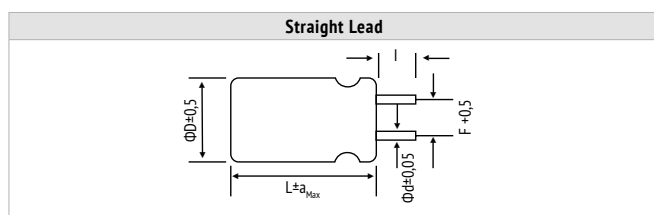
ORDER CODE: LL



Ø D	8	10
F	3,5	5,0
Ø d	0,6	
aMax	1,5	

in mm

DIMENSIONS FOR LOOSE, CUT LEADS (BULK)

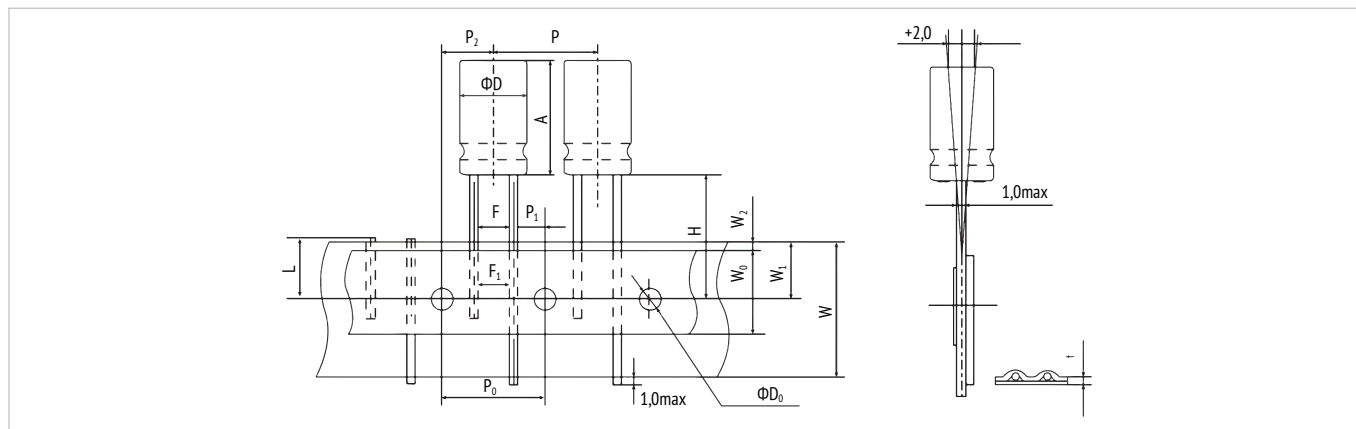


Code	CB	CC	CD	CE	CF
I	5,0 ± 0,5	4,5 ± 0,5	4,0 ± 0,5	3,5 ± 0,5	3,0 ± 0,5

preferred

in mm

DIMENSIONS AMMOPACK TAPING

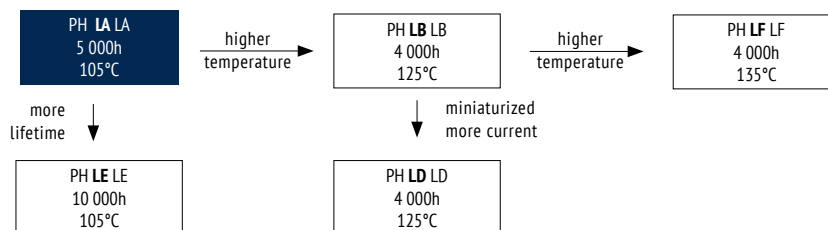


in mm

Ø D	P	P ₀	P ₁	P ₂	F	F ₁	W	W ₀	W ₁	W ₂	H	L	Ø D ₀	t
± 0,5	± 1,0	± 0,2	± 0,5	± 1,0	0,8/ -0,2	± 1,0	± 0,5	min	± 0,5	max	0,75/ -0,5	max	± 0,5	± 0,3
8	12,7	12,7	4,6	6,35	3,5	3,5	18,0	12,0	9,0	1,5	18,5	11,0	4,0	0,7
10	12,7	12,7	3,85	6,35	5,0	5,0	18,0	12,0	9,0	1,5	18,5	11,0	4,0	0,7

**5 000h
at 105°C**

- Low ESR
- Hybrid Polymer Electrolyte

**ITEM CHARACTERISTICS**

Operating Temperature Range (°C)	-55 ~ +105
Voltage Range (V)	25 ~ 80
Capacitance Range (μF)	33 ~ 390
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,15$
Dissipation Factor	at 20°C, 120Hz, see table
Leakage Current (μA)	at 20°C after 2 minutes
Temperature Stability	$Z_{-55^\circ\text{C}} / Z_{+20^\circ\text{C}} \leq 2,0$ $Z_{-25^\circ\text{C}} / Z_{+20^\circ\text{C}} \leq 1,5$



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

ITEM	LOAD LIFETIME L_0	DAMP HEAT (Steady State)	RESISTANCE TO SOLDERING HEAT RADIAL
Lifetime	5 000h	2 000h	5sec, Wave
Leakage Current	≤ the specified value	≤ the specified value (after voltage processing)	≤ the specified value (after voltage processing)
Capacitance Change	Within ± 30% of initial value	Within ± 30% of initial value	Within ± 10% of initial value
Dissipation Factor	≤ 200% of specified value	≤ 200% of specified value	≤ specified value
ESR Change	≤ 200% of specified value	≤ 200% of specified value	≤ specified value
Condition	105°C U_R I_R $U_{MAX} = U_R$	85°C (85~90% relative humidity) U_R $I_R = 0$	260°C±5°C
dTo	10K		details see page 8

MULTIPLIER FOR RIPPLE CURRENT (FREQUENCY COEFFICIENT)

Frequency μF	120Hz	1kHz	5kHz	10kHz	20kHz	30kHz	100~500kHz
33	0,07	0,30	0,50	0,60	0,70	0,75	1,00
47~180	0,10	0,40	0,60	0,70	0,80	0,80	1,00
220~390	0,13	0,45	0,65	0,75	0,85	0,85	1,00

Multipliers for typical operating conditions.

ENVIRONMENTAL

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

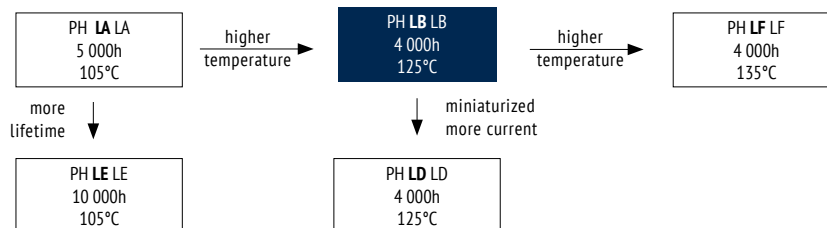




U_{RDC} Rated Voltage Code	C_R Rated Capacitance	ESR_{max} Equivalent Series Resistance	$\tan\delta$ Dissipation Factor	I_{leak} Leakage Current	$I_{max, 105^\circ C}$ Max. Allowed Ripple Current	Size $\varnothing D \times L$	Order Code ◇◇ = pin style & length Details: Page 78
(V)	(μF)	(m Ω)	20°C 120Hz	20°C 2min	105°C 100kHz	(mm)	
25 1E	150	27	0,14	38	2 300	8 x 11,5	PHR1ELA151MBAB◇◇35WPE3
	220	27	0,14	55	2 300	8 x 11,5	PHR1ELA221MBAB◇◇35WPE3
	330	20	0,14	83	2 500	10 x 10	PHR1ELA331MC10◇◇50WPE3
	390	20	0,14	98	2 500	10 x 10	PHR1ELA391MC10◇◇50WPE3
35 1V	100	27	0,12	35	2 300	8 x 11,5	PHR1VLA101MBAB◇◇35WPE3
	150	27	0,12	53	2 300	8 x 11,5	PHR1VLA151MBAB◇◇35WPE3
	220	20	0,12	77	2 500	10 x 10	PHR1VLA221MC10◇◇50WPE3
	270	20	0,12	95	2 500	10 x 10	PHR1VLA271MC10◇◇50WPE3
50 1H	33	30	0,10	17	1 800	8 x 11,5	PHR1HLA330MBAB◇◇35WPE3
	47	30	0,10	24	1 800	8 x 11,5	PHR1HLA470MBAB◇◇35WPE3
	56	30	0,10	28	1 800	8 x 11,5	PHR1HLA560MBAB◇◇35WPE3
	68	30	0,10	34	1 800	8 x 11,5	PHR1HLA680MBAB◇◇35WPE3
	100	28	0,10	50	2 000	10 x 10	PHR1HLA101MC10◇◇50WPE3
	120	28	0,10	60	2 000	10 x 10	PHR1HLA121MC10◇◇50WPE3
63 1J	33	40	0,08	21	1 700	8 x 11,5	PHR1JLA330MBAB◇◇35WPE3
	47	40	0,08	30	1 700	8 x 11,5	PHR1JLA470MBAB◇◇35WPE3
	56	30	0,08	36	1 800	10 x 10	PHR1JLA560MC10◇◇50WPE3
	82	30	0,08	52	1 800	10 x 10	PHR1JLA820MC10◇◇50WPE3
	100	30	0,08	63	1 800	10 x 10	PHR1JLA101MC10◇◇50WPE3
80 1K	56	36	0,08	45	1 700	10 x 10	PHR1KLA560MC10◇◇50WPE3

4 000h
at 125°C

- Low ESR
- Hybrid Polymer Electrolyte



ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-55 ~ +125
Voltage Range (V)	25 ~ 80
Capacitance Range (µF)	33 ~ 470
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,15$
Dissipation Factor	at 20°C, 120Hz, see table
Leakage Current (µA)	at 20°C after 2 minutes
Temperature Stability	$Z_{-55°C} / Z_{+20°C} \leq 2,0$ $Z_{-25°C} / Z_{+20°C} \leq 1,5$



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

ITEM	LOAD LIFETIME L_0	DAMP HEAT (Steady State)	RESISTANCE TO SOLDERING HEAT RADIAL
Lifetime	4 000h	2 000h	5sec, Wave
Leakage Current	$\leq$ the specified value	$\leq$ the specified value (after voltage processing)	$\leq$ the specified value (after voltage processing)
Capacitance Change	Within $\pm 30\%$ of initial value	Within $\pm 30\%$ of initial value	Within $\pm 10\%$ of initial value
Dissipation Factor	$\leq 200\%$ of specified value	$\leq 200\%$ of specified value	$\leq$ specified value
ESR Change	$\leq 200\%$ of specified value	$\leq 200\%$ of specified value	$\leq$ specified value
Condition	125°C U_R I_R $U_{MAX} = U_R$	85°C (85~90% relative humidity) U_R $I_R = 0$	260°C $\pm 5^\circ$ C
dTo	6K		details see page 8

MULTIPLIER FOR RIPPLE CURRENT (FREQUENCY COEFFICIENT)

Frequency µF	120Hz	1kHz	5kHz	10kHz	20kHz	30kHz	100~500kHz
33	0,07	0,30	0,50	0,60	0,70	0,75	1,00
47~150	0,10	0,40	0,60	0,70	0,80	0,80	1,00
220~390	0,13	0,45	0,65	0,75	0,85	0,85	1,00

Multipliers for typical operating conditions.

ENVIRONMENTAL

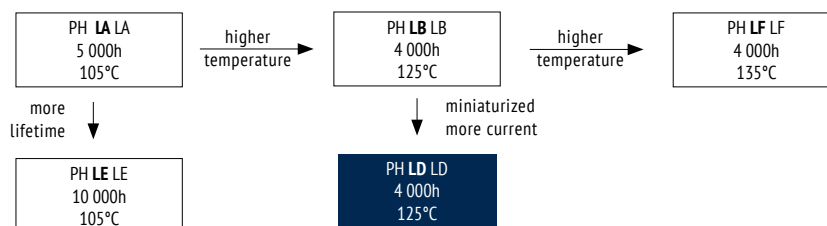
The products are RoHS, WEEE and REACH compliant. The detailed version please see separate "Environmental Certificates" document or www.jianghai-europe.com



U_{RDC} Rated Voltage Code	C_R Rated Capacitance	ESR_{max} Equivalent Series Resistance	$\tan\delta$ Dissipation Factor	I_{leak} Leakage Current	$I_{max, 125^\circ C}$ Max. Allowed Ripple Current	Size $\varnothing D \times L$	Order Code ◇◇ = pin style & length Details: Page 78
(V)	(μF)	(m Ω)	(20°C 120Hz)	(μA)	(mArms)	(mm)	
25 1E	220	27	0,14	55	1 600	8 x 11,5	PHR1ELB221MBAB◇◇35WPE3
	330	20	0,14	83	2 000	10 x 10	PHR1ELB331MC10◇◇50WPE3
	390	20	0,14	98	2 000	10 x 10	PHR1ELB391MC10◇◇50WPE3
	470	20	0,14	118	2 100	10 x 10	PHR1ELB471MC10◇◇50WPE3
35 1V	100	27	0,12	35	1 600	8 x 11,5	PHR1VLB101MBAB◇◇35WPE3
	150	27	0,12	53	1 600	8 x 11,5	PHR1VLB151MBAB◇◇35WPE3
	220	20	0,12	77	2 000	10 x 10	PHR1VLB221MC10◇◇50WPE3
	270	20	0,12	95	2 000	10 x 10	PHR1VLB271MC10◇◇50WPE3
50 1H	47	30	0,10	24	1 250	8 x 11,5	PHR1HLB470MBAB◇◇35WPE3
	68	30	0,10	34	1 250	8 x 11,5	PHR1HLB680MBAB◇◇35WPE3
	82	30	0,10	41	1 500	10 x 10	PHR1HLB820MC10◇◇50WPE3
	100	28	0,10	50	1 600	10 x 10	PHR1HLB101MC10◇◇50WPE3
63 1J	33	40	0,08	21	1 100	8 x 11,5	PHR1JLB330MBAB◇◇35WPE3
	47	40	0,08	30	1 100	8 x 11,5	PHR1JLB470MBAB◇◇35WPE3
	56	30	0,08	36	1 400	10 x 10	PHR1JLB560MC10◇◇50WPE3
	68	30	0,08	43	1 400	10 x 10	PHR1JLB680MC10◇◇50WPE3
80 1K	33	36	0,08	27	1 360	10 x 10	PHR1KLB330MC10◇◇50WPE3

**4 000h
at 125°C**

- Low ESR
- Hybrid Polymer Electrolyte

**ITEM CHARACTERISTICS**

Operating Temperature Range (°C)	-55 ~ +125
Voltage Range (V)	25 ~ 63
Capacitance Range (μF)	100 ~ 820
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,15$
Dissipation Factor	at 20°C, 120Hz, see table
Leakage Current (μA)	at 20°C after 2 minutes
Temperature Stability	$Z_{-55°C} / Z_{+20°C} \leq 2,0$ $Z_{-25°C} / Z_{+20°C} \leq 1,5$



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

ITEM	LOAD LIFETIME L_0	DAMP HEAT (Steady State)	RESISTANCE TO SOLDERING HEAT RADIAL
Lifetime	4 000h	2 000h	5sec, Wave
Leakage Current	$\leq$ the specified value	$\leq$ the specified value (after voltage processing)	$\leq$ the specified value (after voltage processing)
Capacitance Change	Within $\pm 30\%$ of initial value	Within $\pm 30\%$ of initial value	Within $\pm 10\%$ of initial value
Dissipation Factor	$\leq 200\%$ of specified value	$\leq 200\%$ of specified value	$\leq$ specified value
ESR Change	$\leq 200\%$ of specified value	$\leq 200\%$ of specified value	$\leq$ specified value
Condition	125°C U_R I_R $U_{MAX} = U_R$	85°C (85-90% relative humidity) U_R $I_R = 0$	260°C $\pm 5^\circ$ C
dTo	10K		details see page 8

MULTIPLIER FOR RIPPLE CURRENT (FREQUENCY COEFFICIENT)

Frequency μF	120Hz	1kHz	5kHz	10kHz	20kHz	30kHz	100~500kHz
180~820	0,15	0,45	0,65	0,75	0,85	0,85	1,00

Multipliers for typical operating conditions.

ENVIRONMENTAL

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

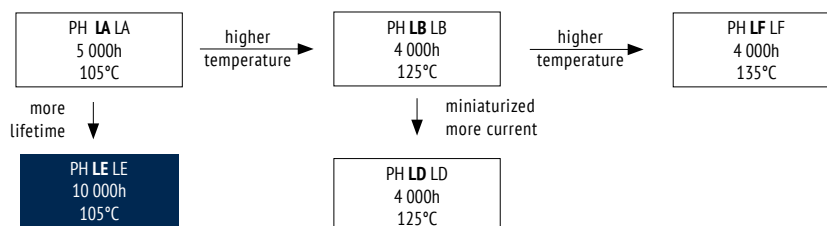




U_{RDC} Rated Voltage Code	C_R Rated Capacitance	ESR_{max} Equivalent Series Resistance	$\tan\delta$ Dissipation Factor	I_{leak} Leakage Current	$I_{max, 125^\circ C}$ Max. Allowed Ripple Current	Size $\varnothing D \times L$	Order Code ◇◇ = pin style & length Details: Page 78
(V)	(μF)	(m Ω)	(20°C 120Hz)	(μA)	(mArms) 125°C 100kHz	(mm)	
25 1E	270	27	0,14	68	2 000	8 x 11,5	PHR1ELD271MBAB◇◇35WPE3
	390	20	0,14	98	2 800	10 x 10	PHR1ELD391MC10◇◇50WPE3
	470	20	0,14	118	2 800	10 x 10	PHR1ELD471MC10◇◇50WPE3
		16	0,14	118	3 500	10 x 12,5	PHR1ELD471MCAC◇◇50WPE3
	560	13	0,14	140	4 000	10 x 16	PHR1ELD561MC16◇◇50WPE3
	820	11	0,14	205	4 500	10 x 20	PHR1ELD821MC20◇◇50WPE3
35 1V	180	27	0,12	63	2 000	8 x 11,5	PHR1VLD181MBAB◇◇35WPE3
	330	20	0,12	116	2 800	10 x 10	PHR1VLD331MC10◇◇50WPE3
		16	0,12	116	3 500	10 x 12,5	PHR1VLD331MCAC◇◇50WPE3
	470	13	0,12	165	4 000	10 x 16	PHR1VLD471MC16◇◇50WPE3
	560	11	0,12	196	4 500	10 x 20	PHR1VLD561MC20◇◇50WPE3
50 1H	150	17	0,10	75	3 200	10 x 12,5	PHR1HLD151MCAC◇◇50WPE3
	220	14	0,10	110	3 700	10 x 16	PHR1HLD221MC16◇◇50WPE3
	270	13	0,10	135	4 200	10 x 20	PHR1HLD271MC20◇◇50WPE3
63 1J	100	19	0,08	63	3 000	10 x 12,5	PHR1JLD101MCAC◇◇50WPE3
	150	15	0,08	95	3 500	10 x 16	PHR1JLD151MC16◇◇50WPE3
	180	14	0,08	114	4 000	10 x 20	PHR1JLD181MC20◇◇50WPE3

**10 000h
at 105°C**

- Low ESR
- Hybrid Polymer Electrolyte

**ITEM CHARACTERISTICS**

Operating Temperature Range (°C)	-55 ~ +105
Voltage Range (V)	25 ~ 80
Capacitance Range (μF)	33 ~ 390
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,15$
Dissipation Factor	at 20°C, 120Hz, see table
Leakage Current (μA)	at 20°C after 2 minutes
Temperature Stability	$Z_{-55^\circ\text{C}} / Z_{+20^\circ\text{C}} \leq 2,0$ $Z_{-25^\circ\text{C}} / Z_{+20^\circ\text{C}} \leq 1,5$



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

ITEM	LOAD LIFETIME L_0	DAMP HEAT (Steady State)	RESISTANCE TO SOLDERING HEAT RADIAL
Lifetime	10 000h	2 000h	5sec, Wave
Leakage Current	≤ the specified value	≤ the specified value (after voltage processing)	≤ the specified value (after voltage processing)
Capacitance Change	Within ± 30% of initial value	Within ± 30% of initial value	Within ± 10% of initial value
Dissipation Factor	≤ 200% of specified value	≤ 200% of specified value	≤ specified value
ESR Change	≤ 200% of specified value	≤ 200% of specified value	≤ specified value
Condition	105°C U_R I_R $U_{MAX} = U_R$	85°C (85-90% relative humidity) U_R $I_R = 0$	260°C±5°C
dTo	10K		details see page 8

MULTIPLIER FOR RIPPLE CURRENT (FREQUENCY COEFFICIENT)

Frequency μF	120Hz	1kHz	5kHz	10kHz	20kHz	30kHz	100~500kHz
33	0,07	0,30	0,50	0,60	0,70	0,75	1,00
47~180	0,10	0,40	0,60	0,70	0,80	0,80	1,00
220~390	0,13	0,45	0,65	0,75	0,85	0,85	1,00

Multipliers for typical operating conditions.

ENVIRONMENTAL

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

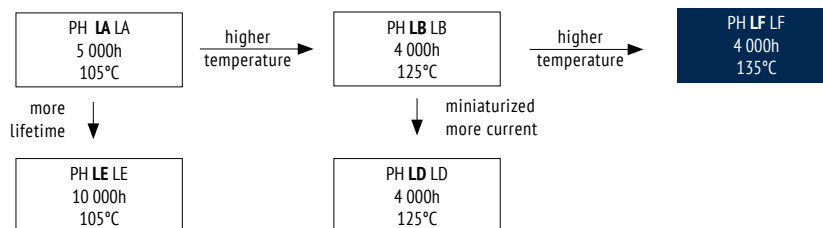




U_{RDC} Rated Voltage Code	C_R Rated Capacitance	ESR_{max} Equivalent Series Resistance	$\tan\delta$ Dissipation Factor	I_{leak} Leakage Current	$I_{max, 105^\circ C}$ Max. Allowed Ripple Current	Size $\varnothing D \times L$	Order Code ◇◇ = pin style & length Details: Page 78
(V)	(μF)	(m Ω)	20°C 120Hz	20°C 2min	105°C 100kHz	(mm)	
25 1E	150	27	0,14	38	2 300	8 x 11,5	PHR1ELE151MBAB◇◇35WPE3
	220	27	0,14	55	2 300	8 x 11,5	PHR1ELE221MBAB◇◇35WPE3
	330	20	0,14	83	2 500	10 x 10	PHR1ELE331MC10◇◇50WPE3
	390	20	0,14	98	2 500	10 x 10	PHR1ELE391MC10◇◇50WPE3
35 1V	100	27	0,12	35	2 300	8 x 11,5	PHR1VLE101MBAB◇◇35WPE3
	150	27	0,12	53	2 300	8 x 11,5	PHR1VLE151MBAB◇◇35WPE3
	220	20	0,12	77	2 500	10 x 10	PHR1VLE221MC10◇◇50WPE3
	270	20	0,12	95	2 500	10 x 10	PHR1VLE271MC10◇◇50WPE3
50 1H	33	30	0,10	17	1 800	8 x 11,5	PHR1HLE330MBAB◇◇35WPE3
	47	30	0,10	24	1 800	8 x 11,5	PHR1HLE470MBAB◇◇35WPE3
	56	30	0,10	28	1 800	8 x 11,5	PHR1HLE560MBAB◇◇35WPE3
	68	30	0,10	34	1 800	8 x 11,5	PHR1HLE680MBAB◇◇35WPE3
	100	28	0,10	50	2 000	10 x 10	PHR1HLE101MC10◇◇50WPE3
63 1J	33	40	0,08	21	1 700	8 x 11,5	PHR1JLE330MBAB◇◇35WPE3
	47	40	0,08	30	1 700	8 x 11,5	PHR1JLE470MBAB◇◇35WPE3
	56	30	0,08	36	1 800	10 x 10	PHR1JLE560MC10◇◇50WPE3
	82	30	0,08	52	1 800	10 x 10	PHR1JLE820MC10◇◇50WPE3
80 1K	33	36	0,08	27	1 700	10 x 10	PHR1KLE330MC10◇◇50WPE3

4 000h
at 135°C

- Low ESR
- Hybrid Polymer Electrolyte



ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-55 ~ +135
Voltage Range (V)	25 ~ 63
Capacitance Range (μF)	33 ~ 560
Capacitance Tolerance (20°C, 120Hz)	± 20%
Surge Voltage (V)	$U_R \cdot 1,15$
Dissipation Factor	at 20°C, 120Hz, see table
Leakage Current (μA)	at 20°C after 2 minutes
Temperature Stability	$Z_{-55°C} / Z_{+20°C} \leq 2,0$ $Z_{-25°C} / Z_{+20°C} \leq 1,5$



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

ITEM	LOAD LIFETIME L_0	DAMP HEAT (Steady State)	RESISTANCE TO SOLDERING HEAT RADIAL
Lifetime	4 000h	2 000h	5sec, Wave
Leakage Current	≤ the specified value	≤ the specified value (after voltage processing)	≤ the specified value (after voltage processing)
Capacitance Change	Within ± 30% of initial value	Within ± 30% of initial value	Within ± 10% of initial value
Dissipation Factor	≤ 200% of specified value	≤ 200% of specified value	≤ specified value
ESR Change	≤ 200% of specified value	≤ 200% of specified value	≤ specified value
Condition	135°C U_R I_R $U_{MAX} = U_R$	85°C (85~90% relative humidity) U_R $I_R = 0$	260°C±5°C
dTo	5K		details see page 8

MULTIPLIER FOR RIPPLE CURRENT (FREQUENCY COEFFICIENT)

Frequency μF	120Hz	1kHz	5kHz	10kHz	20kHz	30kHz	100~500kHz
33	0,07	0,30	0,50	0,60	0,70	0,75	1,00
47~180	0,10	0,40	0,60	0,70	0,80	0,80	1,00
220~560	0,13	0,45	0,65	0,75	0,85	0,85	1,00

Multipliers for typical operating conditions.

ENVIRONMENTAL

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



U_{RDC} Rated Voltage Code	C_R Rated Capacitance	ESR_{max} Equivalent Series Resistance	$\tan\delta$ Dissipation Factor	I_{leak} Leakage Current	$I_{max, 135^\circ C}$ Max. Allowed Ripple Current	Size $\varnothing D \times L$	Order Code ◇◇ = pin style & length Details: Page 78
(V)	(μF)	(m Ω)	(20°C 120Hz)	(μA)	(mArms)	(mm)	
25 1E	220	27	0,14	55	1 600	8 x 11,5	PHR1ELF221MBAB◇◇35WPE3
	330	20	0,14	83	2 000	10 x 10	PHR1ELF331MC10◇◇50WPE3
	470	16	0,14	118	2 500	10 x 12,5	PHR1ELF471MCAC◇◇50WPE3
	560	14	0,14	140	2 500	10 x 16	PHR1ELF561MC16◇◇50WPE3
35 1V	150	27	0,12	53	1 600	8 x 11,5	PHR1VLF151MBAB◇◇35WPE3
	270	20	0,12	95	2 000	10 x 10	PHR1VLF271MC10◇◇50WPE3
	330	17	0,12	116	2 400	10 x 12,5	PHR1VLF331MCAC◇◇50WPE3
	470	14	0,12	165	2 500	10 x 16	PHR1VLF471MC16◇◇50WPE3
50 1H	47	30	0,10	24	1 250	8 x 11,5	PHR1HLF470MBAB◇◇35WPE3
	100	25	0,10	50	1 600	10 x 10	PHR1HLF101MC10◇◇50WPE3
	120	25	0,10	60	1 600	10 x 10	PHR1HLF121MC10◇◇50WPE3
	150	19	0,10	75	2 250	10 x 12,5	PHR1HLF151MCAC◇◇50WPE3
	220	16	0,10	110	2 400	10 x 16	PHR1HLF221MC16◇◇50WPE3
63 1J	33	40	0,08	21	1 100	8 x 11,5	PHR1JLF330MBAB◇◇35WPE3
	56	30	0,08	36	1 400	10 x 10	PHR1JLF560MC10◇◇50WPE3
	100	22	0,08	63	2 100	10 x 12,5	PHR1JLF101MCAC◇◇50WPE3
	150	16	0,08	95	2 400	10 x 16	PHR1JLF151MC16◇◇50WPE3

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Uerdinger Str. 95 · 47799 Krefeld/Germany

Tel.: +49 (0) 2151-652088-0 · Fax: -88

info@jianghai-europe.com

www.jianghai-europe.com

Nantong Jianghai Capacitor Co., Ltd.

No. 79 South Tong Yang Road

226361 Nantong, Jiangsu/China

Tel.: +86-513-8672-6080 · Fax: -3859

jh@jianghai.com

www.jianghai.com

Jianghai America Inc.

3104 Sunrise Ridge LN

Hacienda Heights, CA 91745/USA

Tel.: +1-626-274-1692 · Fax: +1-626-336-6960

wangjuan@jianghai-america.com

www.jianghai-america.com