

Shanghai Yongming Electronics Co., Ltd.

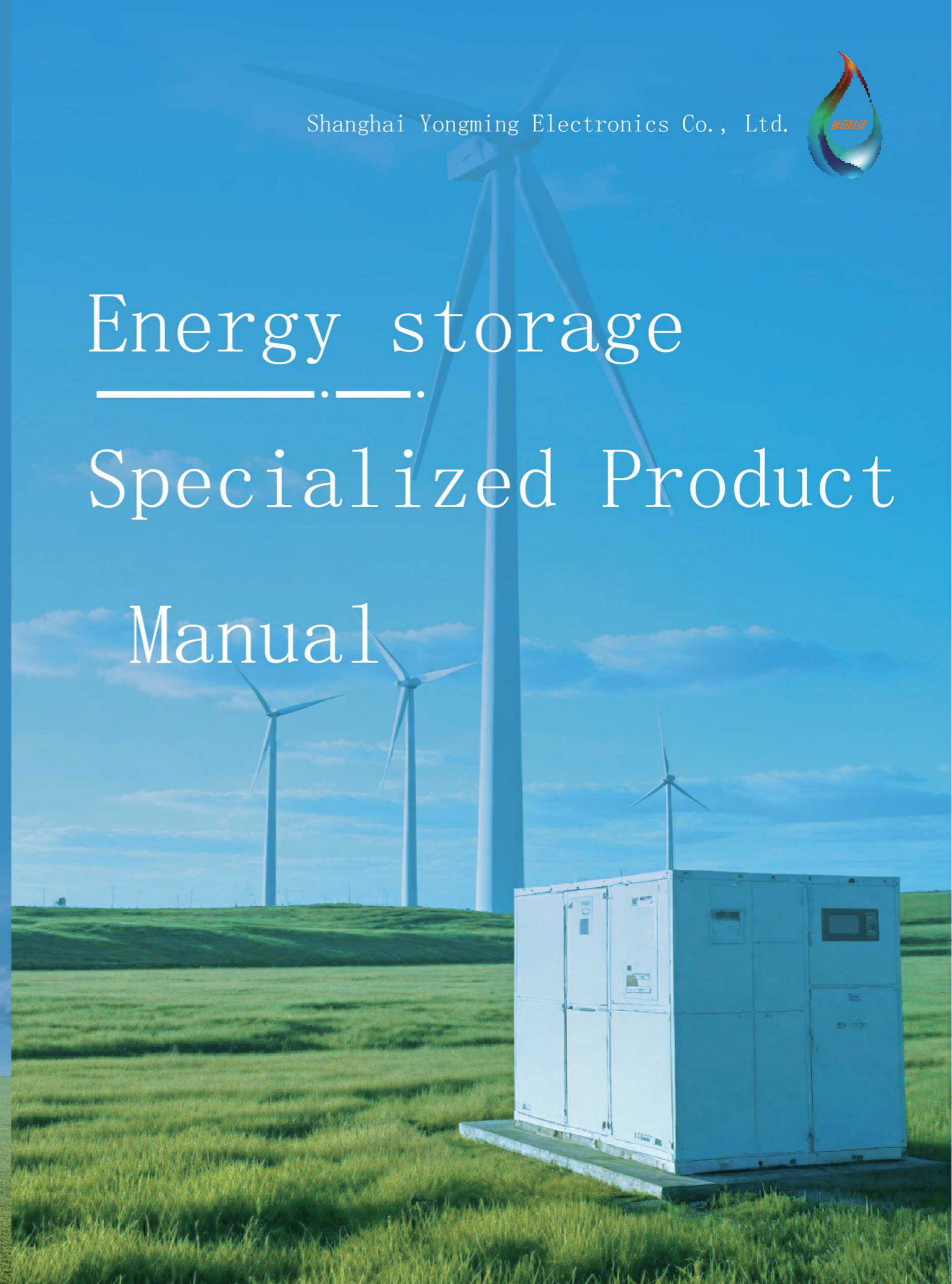


Energy storage

Specialized Product

Manual

Capacitor Solutions,
Ask YMIN for your Applications.



Company Profile (P01~P02)

Energy Storage
Application
Introduction (P03~P14)

Inverter 03

converter 10

BMS 13

Introduction to
capacitor series
P15~P97

Liquid aluminum electrolytic capacitor

surface mount type

V3M	/	VKO	/
VMM(U)	/	VKO(R)	/
VMM(R)	/	VKO(T)	/
VMM(T)	/	VKM	/
VK7(R)	/	VKL	/

Lead type

LK	17	LKJ	41
LKF	25		
LKM	33		
LKG	/		
LKZ	/		

Base plate independent type

CW3	43	CW6	47
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Polymer solid aluminum electrolytic capacitor

surface mount type

VPX	/
-----	---

Lead type

NPX	/
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Polymer hybrid aluminum electrolytic capacitor

surface mount type

VHT	50	VHM	55
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Supercapacitor

Double-layer supercapacitor cell

SDB	58
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Double-layer supercapacitor
potting module

SM(G)	59
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Double-layer supercapacitor
module

SDM	60
-----	----

Hybrid supercapacitor
module

SLM	62
-----	----

film capacitors

Pin-type metallized film capacitors

MDP	64
-----	----

MDP(H)	/
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Customized metallized film capacitors

MDR	75
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MDR(H)	/
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Company List

COMPANY LIST



Qualification Certificate

QUALIFICATION CERTIFICATE



NATIONAL MILITARY STANDARD
QUALITY MANAGEMENT
SYSTEM CERTIFICATION



IATF 16949 SYSTEM
CERTIFICATION



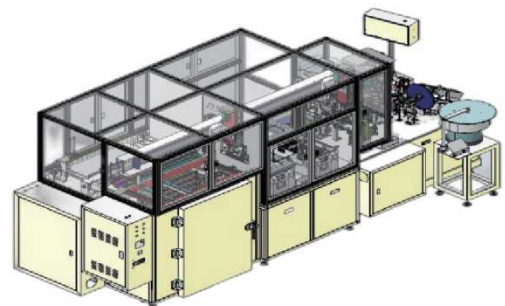
CNAS ACCREDITATION
IS UNDERWAY...



AEC-Q200 PRODUCT
CERTIFICATION

Automated production line

AUTOMATED PRODUCTION LINE

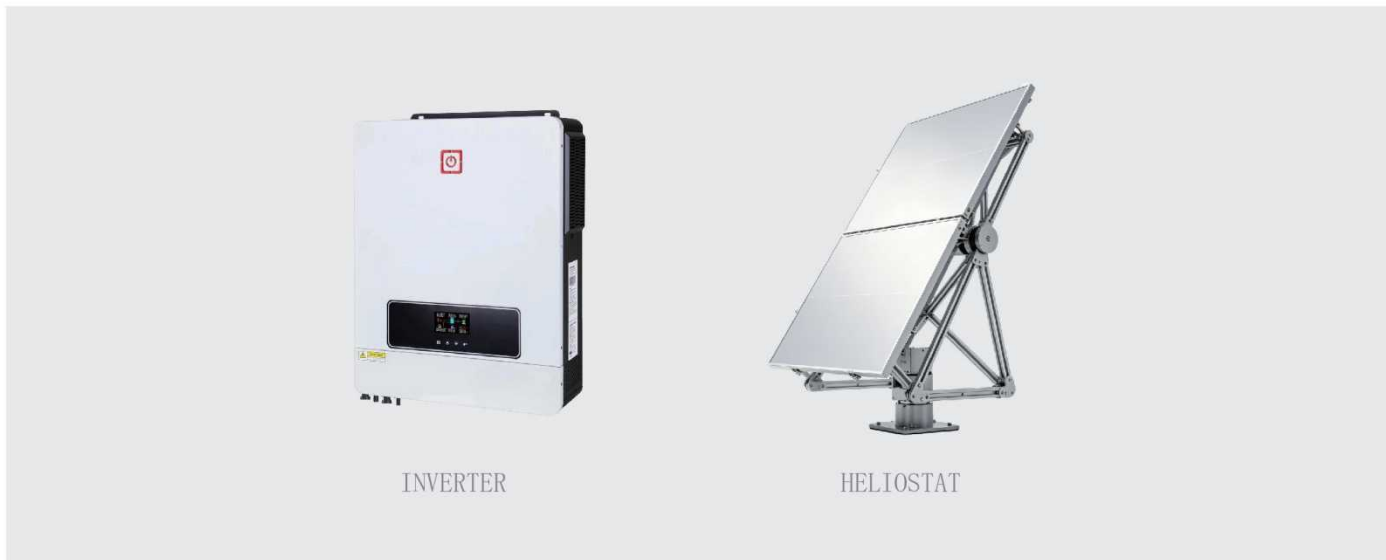


YMIN Electronics' all-capacitor production line is a high-end production line integrating automation, digitalization, and intelligence, ensuring product manufacturing quality and production efficiency.

The entire process is automated, connecting five core processes. Materials flow automatically, process parameters are intelligently matched, and equipment automation exceeds 90%, with human intervention less than 10%. Three-dimensional inspection integrates electrical performance testing, CCD vision, and laser measurement, with data uploaded to the cloud in real time, ensuring 100% effective rejection of defective products. The Industrial Internet of Things (IIoT) collects over 300 quality parameters in real time, and the MES system enables full-process traceability and equipment visualization.

Inverter

INVERTER



INVERTER

HELIOSTAT

◆ Inverter

Application Requirements

Long lifespan, sufficient capacity, low impedance, and high ripple current withstand;

Advantages of Yongming's Self-standing Aluminum Electrolytic Capacitors

☑ High temperature resistance and long

Yongming horn capacitors with a temperature rating of 105° C or even higher are selected. Under harsh conditions of maximum rated temperature and full-load ripple current, they have an ultra-long operating life of thousands to tens of thousands of hours (such as 3000H-6000H) to match the life cycle of the inverter unit of 5 to 10 years or even longer;

☑ High voltage resistance and surge

Yongming horn capacitors have sufficient rated operating voltage (common applications are 400V, 450V, 500V, 550V, 600V or even higher) and excellent surge voltage resistance to cope with voltage spikes during power grid fluctuations or equipment start-up and shutdown.

☑ Low equivalent series resistance

The extremely low internal resistance significantly reduces power loss, with an ESR value below 190mΩ at 120Hz. This not only reduces capacitor self-temperature rise and heat generation, but also effectively suppresses voltage ripple on the DC bus, improving the overall power conversion efficiency.

☑ High energy density and miniatur-

While maintaining the same capacitance and voltage rating, a smaller size (high specific capacitance) is achieved. The compact size helps optimize PCB trace layout and improves overall heat dissipation airflow.

Recommended selection of Yongming aluminum electrolytic capacitors
 (the following are example specifications for reference only).

Capacitor type	shape	series	Temperature life	Rated voltage (V)	Nominal capacity (μ F)	Product dimensions D*L (mm)	Product part number
Aluminum electrolytic capacitors	substrate self-reliant	CW3	105°C 3000H	550	330	35*45	CW32H471MNNAS06S2
		CW3	105°C 3000H	550	470	35*50	CW32H471MNNAS07S2
		CW3	105°C 3000H	500	820	35*65	CW32H821MNNAS10S2
		CW6	105°C 6000H	315	1000	35*45	CW62X102MNNAS06S2
		CW6	105°C 6000H	315	1200	35*50	CW62X122MNNAS07S2
		CW6	105°C 6000H	550	330	35*50	CW62L331MNNAS07S2
		CW6	105°C 6000H	550	390	35*55	CW62L391MNNAS08S2
		CW6	105°C 6000H	550	470	35*60	CW62L471MNNAS09S2
	Lead type	LK	105°C 6000H	16	470	6.3*12	OLKC1201C471MF
		LK	105°C 8000H	100	180	10*20	OLKE2002A181MF
		LKM	105°C 10000H	35	680	10*16	LKME1601V681MF
		LKM	105°C 10000H	50	1200	12.5*25	LKML2501H122MF
		LKJ	105°C 7000H	16	220	6.3*11	LKJC1101C221MF
		LKJ	105°C 10000H	25	470	8*12	LKJD1201E471MF
		LKM	105°C 10000H	63	3300	18*40	LKMJ4001J332MF
		LKM	105°C 10000H	63	3900	18*40	LKMJ4001J392MF
		LKM	105°C 10000H	80	2200	18*40	LKMJ4001K222MF
		LKM	105°C 10000H	100	1500	18*40	LKMJ4002A152MF
		LKM	105°C 10000H	120	1300	18*40	LKMJ4002K132MF

Advantages of Yongming's Surface Mount Aluminum Electrolytic Capacitors

☑ Extremely high reliability and long lifespan

1. Long lifespan parameters: Typically, a rated lifespan of 3000 to 10000 hours is required at 105° C;

☑ High temperature resistance and environmental adaptability

Inverters are typically placed outdoors, facing extreme climates. 1. Temperature range: Must cover -40° C to +105° C. In extremely low temperatures of -55° C, Yung-Ming SMD capacitors retain over 80% of their capacitance. In low temperatures of -40° C, the capacitance retention is over 90%. For some compact

☑ Low ESR and ripple current withstand

The inverter's internal components are filled with high-frequency switching noise (PWM signal).

1. Low ESR: Only low ESR can reduce the self-temperature rise of capacitors.

☑ Low leakage current

In the voltage sampling and protection circuit of an inverter, excessive leakage current of the capacitor or drastic temperature fluctuations can lead to sampling errors. YMIN SMD capacitors typically have an actual leakage current within 1/10 of their rated value,

☑ Miniaturization

Inverters (especially string inverters) are trending towards thinner and more compact designs. Surface mount technology (SMD) packages are low-profile, facilitating placement on multi-layer PCBs.

1. V-chip: Enables automated production (SMT) and high-density mounting, saving space. YMIN pioneered the full voltage

Recommended Selection Guide for YMIN Surface Mount Aluminum Electrolytic Capacitors (The following are example specifications for reference only)

Capacitor type	shape	series	Temperature life	Rated voltage (V)	Nominal capacity (μF)	Product dimensions D*L (mm)	Product part number
Aluminum electrolytic capacitors	surface mount type	VKM	105°C 10000H	6.3	5600	18*16.5	VKMJ1650J562MVTM
		VKO(T)	105°C 5000H	16	470	8*10	VKO(T)D1001C471MVTM
		VMM(U)	105°C 5000H	25	47	6.3*5.7	VMM(U)C0571E470MVTM
		VMM(R)	105°C 5000H	25	220	8*10	VMM(R)D1001E221MVTM
		VMM(T)	105°C 5000H	25	470	10*10	VMM(T)E1001E471MVTM
		VKO(R)	105°C 5000H	25	1000	12.5*16	VKO(R)L1601E102MVTM
		VK7(R)	105°C 3000H	35	100	6.3*7.7	VK7(R)C0771V101MVTM
		V3M	105°C 3000H	35	220	8*10	V3MD1001V221MVTM
		VKL	125°C 3000H	35	100	8*10	VKLD1001V101MVTM
		VMM(R)	105°C 3000H	50	22	6.3*5.7	VMM(R)C0571H220MVTM

Yongming's advantages in solid-liquid hybrid aluminum electrolytic capacitors

Ultra-low ESR and wideband stability

YMIN's solid-liquid hybrid capacitors achieve an ESR as low as $8\text{m}\Omega$ @100kHz,

and maintain stable ESR over a wide frequency range of 10kHz to 500kHz, with an ESR variation within 3 milliohms.

They effectively filter out high-frequency ripple and harmonics, ensuring the load's demand for clean current,

while reducing interference and negative impacts on the power grid; and they maintain a low temperature rise when large ripple current passes through the capacitor, thus ensuring stable product performance.

Overload withstand capability: High permissible ripple current, high permissible inrush current, withstands instantaneous voltage spikes

Yongming's solid-liquid hybrid capacitors possess strong ripple resistance, with a temperature rise of no more than 2°C under standard ripple current;

They can withstand ultra-high inrush currents exceeding 20A, ensuring capacitor safety and reliability.

They can withstand surge voltages of 1.25 times the rated operating voltage and transient spike voltages of 2 times the rated operating voltage.

Effectively preventing malfunctions caused by overload conditions;

Long lifespan and high-temperature durability, suitable for the entire life cycle of the machine.

Yongming's solid-liquid hybrid capacitors have a lifespan of up to 4000 hours at high temperatures of $125^{\circ}\text{C}\sim 135^{\circ}\text{C}$, and an even longer lifespan of up to 20000 hours at 105°C .

The capacitance decay rate after long-term operation is less than 5%, ensuring that the overall performance remains unchanged.

High capacity density and compact design contribute to inverter miniaturization

YMIN's hybrid solid-liquid capacitors combine the characteristics of solid and liquid dielectrics with their unique manufacturing process, achieving 15% to 20% higher capacitance than similar capacitors in the industry for the same volume.

This enables inverter designs with higher power density within limited layout space.

Long lifespan and wide temperature range stability, suitable for harsh outdoor conditions

Yongming's solid-liquid hybrid capacitors boast a lifespan of up to 4000 hours at $125^{\circ}\text{C}\sim 135^{\circ}\text{C}$, exhibiting excellent wide-temperature stability. Performance remains consistent across a wide temperature range of -55°C to $+150^{\circ}\text{C}$, with a capacitance change rate of approximately -6% and an ESR change of no more than 3 milliohms. This meets the stringent requirements of photovoltaic, wind power, and other new energy fields for long-term capacitor lifespan and high reliability.

Recommended Selection Guide for YMIN Solid-State & Hybrid Aluminum Electrolytic Capacitors (Example Specifications Below are for Reference Only)

Capacitor type	shape	series	Temperature life	Rated voltage (V)	标称容量 (μF)	Product dimensions D*L (mm)	Product part number
Polymer Hybrid Power Aluminum Electrolytic Capacitor	surface mount type	VHM	125°C 4000H	16V	220 μF	6.3*7.7	VHMC0771C221MVCG
		VHM	125°C 4000H	35V	100 μF	6.3*7.7	VHMC0771V101MVCG
		VHM	125°C 4000H	35V	220 μF	8*10.5	VHMD1051V221MVCG
		VHM	125°C 4000H	35V	330 μF	10*10.5	VHME1051V331MVCG
Polymer solid aluminumelectrolytic capacitor	surface mount type	VPX	105°C 2000H	50V	47 μF	6.3*5.8	VPXC0581H470MVTM
	Lead type	NPX	105°C 2000H	50V	22 μF	6.3*5.7	NPXC0571H220MJTM

Yongming Supercapacitor Product Advantages

☑ Stable backup power

It provides power-off protection for critical low-power circuits such as the real-time clock and data storage inside the inverter. Its potting structure ensures long-term stability in

☑ Lifespan and

In scenarios involving high temperatures and high-frequency charging and discharging, the cycle life of traditional button capacitors may be shortened due to the chemical degradation of

☑ Wide temperature range performance consistency

Traditional button capacitors suffer severe capacitance decay and operational stability under extremely cold or hot conditions. YMIN potted modules operate over a wide temperature range of -40°C to $+85^{\circ}\text{C}$. The heat insulation and buffering

☑ Environmental adaptability

Traditional button-type inverters use mechanical encapsulation, which is prone to failure due to seal failure and leakage in extreme environments. The epoxy resin fully encapsulated structure forms a "protective armor," effectively

☑ Structural reliability

Traditional button capacitors have limited vibration and shock resistance, and prolonged exposure to vibrations can lead to loosening or failure of internal connections. The potting epoxy resin fills the internal voids, forming a

Recommended Supercapacitor Selection Guide from YMIN (The following are example specifications for reference only)

Capacitor type	shape	series	Temperature life	Rated voltage (V)	标称容量 (μF)	Product dimensions D*L (mm)	Product part number
Supercapacitor	Encapsulation Module	SM(G)	$-40^{\circ}\text{C}\sim+85^{\circ}\text{C}$	5.5	0.33	14.0×8.0×13.5	SMG5R5M3341414
		SM(G)	$-40^{\circ}\text{C}\sim+85^{\circ}\text{C}$	5.5	0.5	17.5×9.5×16.0	SMG5R5M5041816
		SM(G)	$-40^{\circ}\text{C}\sim+85^{\circ}\text{C}$	5.5	1	18.0×9.5×20	SMG5R5M1051820
		SM(G)	$-40^{\circ}\text{C}\sim+85^{\circ}\text{C}$	5.5	1.5	18.5x10x23.6	SMG5R5M1551924

Yongming film capacitor product advantages

High-frequency low ESR and wideband filtering performance

Employing a non-inductive winding process and a highly conductive metallized coating, it achieves an ESR as low as $0.2m\Omega@100kHz$, maintaining extremely low and stable losses ($\tan\delta \leq 0.002$) and ESR fluctuations $\leq 0.1m\Omega$ across a wide frequency range of $10kHz \sim 1MHz$. It effectively filters out ripple and harmonics generated by high-frequency switching in photovoltaic inverters, reducing circuit heat generation and losses, and improving inverter efficiency.

High power density design supports inverter miniaturization

By optimizing the dielectric film thickness, winding structure and packaging process, the capacity density is increased by 30%~47% compared with similar products in the industry under the same volume. It achieves higher energy storage and filtering capabilities in a limited PCB space, supports the miniaturization and lightweight design of string/central inverters, and reduces the heat dissipation pressure and BOM cost of the whole machine.

Wide temperature range, weather resistant and anti-aging, suitable for extreme outdoor environments

Operating temperature range: $-55^{\circ}C$ to $+125^{\circ}C$; full temperature range bulk density change rate: $\leq \pm 3\%$; ESR change: $\leq 0.1m\Omega$; passed reliability verifications for high humidity, salt spray, and vibration; adaptable to extreme outdoor environments such as $-40^{\circ}C$ extreme cold, $85^{\circ}C$ high temperature, high humidity and high salt spray; perfectly compatible with distributed/centralized photovoltaic power stations, achieving maintenance-free operation throughout the entire life cycle.

Long lifespan and high-temperature durability, matching a 25-year power plant lifespan.

Employing self-healing polypropylene dielectric and high-reliability epoxy encapsulation, it boasts a rated lifespan of 100,000 hours at $105^{\circ}C$ and over 200,000 hours at $85^{\circ}C$, fully matching the 25-year design life of photovoltaic power plants. After long-term outdoor operation, the capacity degradation rate is $\leq 3\%$, and the loss change rate is $\leq 10\%$, ensuring stable performance throughout the inverter's entire lifespan and eliminating the need for maintenance or replacement.

High ripple resistance and impact resistance, suitable for MPPT dynamic conditions

Optimized for dynamic adjustment of photovoltaic MPPT and grid-connected impact conditions, the temperature rise under rated ripple current is $\leq 1.5^{\circ}C$, and it can withstand continuous operation with large ripple for a long time; it supports instantaneous large current impact of more than 200A without breakdown or capacity degradation; it can withstand 1.5 times the rated voltage surge and 2.5 times the transient peak pulse, and is suitable for complex conditions such as photovoltaic grid connection and lightning surge, eliminating overload failure;

Recommended selection of YMIN film capacitors (the following are example specifications for reference only).

Capacitor type	shape	series	Temperature life	power range	Rated voltage (V)	Nominal capacity (μF)	ESR ($m\Omega/1kHz$)	Peak current	Continuous ripple current
Metallized film capacitors	Pin type	MDP	$105^{\circ}C \sim 125^{\circ}C$ 100000H	String inverters (1 - 30kW)	600	20~300	$\leq 1 \sim 5.5m\Omega$	300~1000A	30~80A
		MDP			800				
		MDP			900				
		MDP (H)		High-power centralized industrial and commercial inverters (50 - 350kW)	1000	80~600			
		MDP (H)			1100				
		MDP (H)			1200				
	Customization	MDR	$105^{\circ}C$ 100000H	1400	500~2000	$\leq 0.5 \sim 4.5m\Omega$	500~3000A	60~500A	
		MDR (H)	$125^{\circ}C$ 100000H	1600					

heliostat

Application Requirements

It features long cycle life, high charge and discharge response speed and reliability over a wide temperature range (especially in extremely cold nights) to complete multiple daily heliostat angle calibration.

Yongming Supercapacitor Product Advantages

<p><input checked="" type="checkbox"/> Millisecond-level charging and discharging to cope with momentary power fluctuations.</p> <p>Millisecond-level charging and discharging speeds and microsecond-level response ensure that it can act as a "lifesaver" for motors during brief voltage dips (power slumps), maintaining voltage stability. This directly corresponds to the product's high power density and low internal resistance characteristics, guaranteeing light energy absorption efficiency and enabling the power station to meet the grid's "Low Voltage Ride-Through" (LVRT) requirements.</p>	<p><input checked="" type="checkbox"/> 500,000 cycle life, adaptable to high frequency voltage fluctuations</p> <p>In concentrated solar power (CSP) plants, grid voltage fluctuations are commonplace. Supercapacitors, with a cycle life exceeding 500,000 cycles and a service life of over 10 years, can easily withstand several to dozens of daily voltage spikes, achieving "maintenance-free throughout their entire lifecycle." This significantly reduces the total cost of ownership (TCO) of the power plant, avoiding the hassle of replacing traditional batteries every 2-3 years.</p>
<p><input checked="" type="checkbox"/> High power density provides strong instantaneous power.</p> <p>Starting a motor requires a large current. The high power density (1000-5000W/kg) of supercapacitors allows them to act as a "power booster," outputting tens to hundreds of kilowatts of power within milliseconds, ensuring that the motor can start and run normally even when the voltage fluctuates, thus guaranteeing the continuity of power plant production.</p>	<p><input checked="" type="checkbox"/> Stable operation over a wide temperature range, unaffected by harsh environments</p> <p>Thermal power plants are typically located in the harsh climate of the northwest. Supercapacitors can operate stably over a wide temperature range of -40° C to 70° C, with a capacity decay rate of no more than 5% at -40° C. This allows them to operate reliably in extremely cold conditions without the need for an additional heat tracing system, directly reducing system complexity and improving overall reliability.</p>
<p><input checked="" type="checkbox"/> Intrinsically safe, eliminating the risk of combustion and explosion</p> <p>The physical energy storage process of supercapacitors does not involve chemical reactions; the electrode materials are carbon-based, and the electrolyte is an inert substance. Even under extreme conditions such as overcharging or short circuits, it will not burn or explode; this inherent safety characteristic is crucial for the safe operation of power plants.</p>	

Recommended Supercapacitor Selection Guide from YMIN (The following are example specifications for reference only)

Capacitor type	shape	series	Temperature life	Rated voltage (V)	标称容量 (μF)	Product dimensions D*L (mm)	Product part number
Double-layer supercapacitor	Lead type	SDB	-40°C~+70°C	3	60	18×40	SDB3R0L6061840
		SDB	-40°C~+70°C	3	100	22×45	SDB3R0L1072245
		SDB	-40°C~+70°C	3	120	22×50	SDB3R0L1272250
		SDB	-40°C~+70°C	3	160	22×55	SDB3R0L1672255

converter

CONVERTER



CONVERTER

converter

Application Requirements

High reliability, high ripple current tolerance, high efficiency and high precision;

Advantages of Yongming's Self-standing Aluminum Electrolytic Capacitors

High energy density

With an actual capacity of $\geq 95\%$ of the nominal capacity, excellent ripple resistance is ensured. During brief grid dips, the energy stored in the capacitors provides critical holding time, maintaining the continuous operation of the converter control logic (anti-power dip); during sudden load increases, it instantaneously releases a large current to stabilize the DC bus voltage.

High ripple current withstand

YMIN's capacitors are specifically designed for high-frequency operation in converters and feature ultra-high ripple current tolerance. They can safely and efficiently absorb high-order harmonic currents on the DC bus, protecting semiconductor power devices from current surges, while ensuring that they do not generate excessive temperature rise in harsh electrical environments.

Equivalent series resistance (ESR)

By employing a special high-conductivity electrolyte and optimized internal winding process, extremely low ESR characteristics are achieved. This not only significantly reduces the heat generation of the capacitor itself and improves the overall energy conversion efficiency, but also more thoroughly filters out high-frequency spike voltages on the bus.

Rated voltage and surge voltage

The standard 400V/450V and even 500V high-voltage series are equipped with ample surge voltage margin. Before the braking unit intervenes, the capacitor can safely absorb transient peak energy and withstand short-term overvoltage impacts without being broken down, forming the first line of defense for the power circuit.

Operating temperature and life rating

Standard configuration includes a 105° C high-temperature resistant system, and offers long-life series ranging from 3000 to over 6000 hours. Even in harsh environments with limited heat dissipation in industrial or outdoor converter enclosures, it maintains an extremely low aging rate, significantly reducing after-sales maintenance costs.

Recommended selection of Yongming aluminum electrolytic capacitors (the following are example specifications for reference only).

Capacitor type	shape	series	Temperature life	Rated voltage (V)	Nominal capacity (μF)	Product dimensions D*L (mm)	Product Part Number
Aluminum electrolytic capacitors	Base plate independent type	CW3	105°C 3000H	350	1200	35*50	CW32V122MNNAS07S2
		CW3	105°C 3000H	550	470	35*50	CW32L471MNNAS07S2
		CW6	105°C 6000H	550	680	35*60	CW62L681MNNAS09S2
	Lead type	LK	105°C 8000H	10	1000	8*16	OLKD1601A102MF
		LK	105°C 6000H	25	47	5*9	OLKB0901E470M
		LKM	105°C 10000H	35	330	8*14	LKMD1401V331MF
		LKM	105°C 10000H	50	1000	12.5*25	LKML2501H102MF
		LKJ	105°C 7000H	25	680	8*16	LKJD1601E681MF
		LKJ	105°C 7000H	50	47	6.3*11	LKJC1101H470MF
		LKG	105°C 12000H	160	470	18*31.5	LKGJ3152C471MF
		LKF	105°C 10000H	160	1000	18*50	LKFJ5002C102MF
		LKZ	105°C 15000H	600	100	22*40	LKZK4002J101MF

Yongming Supercapacitor Product Advantages

☑ Extremely low internal resistance, ultra-high magnification

Employing a non-inductive winding process and a highly conductive metallized coating, it achieves an ESR as low as $0.2m\Omega$ @100kHz, maintaining extremely low and stable losses ($\tan\delta \leq 0.002$) and ESR fluctuations $\leq 0.1m\Omega$ across a wide frequency

☑ Supports high-current fast charging + millisecond-level response

It can quickly absorb/release transient energy, cover load step and short-term ripple buffer, has symmetrical charge and discharge characteristics, supports high current charging above

☑ Square structure

The square structure allows for over 95% space utilization of the cells within the module, eliminating the waste issues associated with cylindrical cells. Combined with ultra-high energy density ($>20Wh/L$), compared to traditional

☑ 500,000 cycle life

The working principle of LIC combines the advantages of both batteries and capacitors. The positive electrode material undergoes no phase change reaction, and the lithium intercalation

☑ Wide operating temperature range: $-30^{\circ}C$ to $70^{\circ}C$

Stable operation from $-30^{\circ}C$ to $+70^{\circ}C$, optimized electrolyte formula and electrode system ensure that the product maintains excellent performance in high temperature environment and cold region,

Recommended Supercapacitor Selection Guide from YMIN (The following are example specifications for reference only)

Capacitor type	shape	series	Temperature range	Rated voltage (V)	Nominal capacity (F)	Product dimensions W*D*L (mm)	DC-ESR ($m\Omega/100KHz$)	Continuous current A	Pulse current A	Minimum operating voltage (V)	Product Part Number
Hybrid supercapacitor	Modular	SLF	$-30^{\circ}C \sim +70^{\circ}C$	4.0	4500	148*92.5*17.8	0.8	360	1300	2.5	SLF4.0V4500FA0A
		SLF	$-30^{\circ}C \sim +70^{\circ}C$	4.0	2200	148*67.0*17.8	1	200	1000	2.5	SLF4.0V2200FA0A
		SLM	$-30^{\circ}C \sim +70^{\circ}C$	24	433	118*35*46	180	12	40	15	SLM24V433FREA
		SLM	$-30^{\circ}C \sim +70^{\circ}C$	4.0	25000	160*115*165	0.8	200	1300	2.5	SLM4.0V25000FREA

Yongming film capacitor product advantages

High-frequency low ESR and wideband filtering performance

Employing a non-inductive winding process and a highly conductive metallized coating, it achieves an ESR as low as $0.2m\Omega @ 100kHz$, maintaining extremely low and stable losses ($\tan\delta \leq 0.002$) and ESR fluctuations $\leq 0.1m\Omega$ across a wide frequency range of $10kHz \sim 1MHz$. It effectively filters out ripple and harmonics generated by high-frequency switching in photovoltaic inverters, reducing circuit heat generation and losses, and improving inverter efficiency.

High power density design supports inverter miniaturization

By optimizing the dielectric film thickness, winding structure and packaging process, the capacity density is increased by 30%~47% compared with similar products in the industry under the same volume. It achieves higher energy storage and filtering capabilities in a limited PCB space, supports the miniaturization and lightweight design of string/central inverters, and reduces the heat dissipation pressure and BOM cost of the whole machine.

Wide temperature range, weather resistant and anti-aging, suitable for extreme outdoor

Operating temperature range: $-55^{\circ}C$ to $+125^{\circ}C$; full temperature range bulk density change rate: $\leq \pm 3\%$; ESR change: $\leq 0.1m\Omega$; passed reliability verifications for high humidity, salt spray, and vibration; adaptable to extreme outdoor environments such as $-40^{\circ}C$ extreme cold, $85^{\circ}C$ high temperature, high humidity and high salt spray; perfectly compatible with distributed/centralized photovoltaic power stations, achieving maintenance-free operation throughout the entire life cycle.

Long lifespan and high-temperature durability, suitable for a 25-year power plant lifespan.

Employing self-healing polypropylene dielectric and high-reliability epoxy encapsulation, it boasts a rated lifespan of 100,000 hours at $105^{\circ}C$ and over 200,000 hours at $85^{\circ}C$, fully matching the 25-year design life of photovoltaic power plants. After long-term outdoor operation, the capacity degradation rate is $\leq 3\%$, and the loss change rate is $\leq 10\%$, ensuring stable performance throughout the inverter's entire lifespan and eliminating the need for maintenance or replacement.

High ripple resistance and impact resistance, suitable for MPPT dynamic conditions.

Optimized for dynamic adjustment of photovoltaic MPPT and grid-connected impact conditions, the temperature rise under rated ripple current is $\leq 1.5^{\circ}C$, and it can withstand continuous operation with large ripple for a long time; it supports instantaneous large current impact of more than 200A without breakdown or capacity degradation; it can withstand 1.5 times the rated voltage surge and 2.5 times the transient peak pulse, and is suitable for complex conditions such as photovoltaic grid connection and lightning surge, eliminating overload failure;

Recommended selection of YMIN film capacitors (the following are example specifications for reference only).

Capacitor type	shape	series	Temperature life	power range	Rated voltage (V)	Nominal capacity (μF)	ESR($m\Omega / 1kHz$)	Peak current	Continuous ripple current
Metallized film capacitors	Pin type	MDP	$105^{\circ}C \sim 125^{\circ}C$ 100000H	String inverters (1 - 30kW)	600	20~300	$\leq 1 \sim 5.5m\Omega$	300~1000A	30~80A
		MDP			800				
		MDP			900				
		MDP(H)		1000	80~600				
		MDP(H)		1100					
		MDP(H)		1200					
	Customization	MDR	105 $^{\circ}C$ 100000H	High-power centralized industrial and commercial inverters (50 - 350kW)	1400	500~2000	$\leq 0.5 \sim 4.5m\Omega$	500~3000A	60~500A
		MDR	125 $^{\circ}C$ 100000H		1600				

Battery Management System

BMS



BATTERY MANAGEMENT SYSTEM (BMS)

◆ Battery Management System (BMS)

Application Requirements

Energy storage systems (especially commercial, industrial, or ground-mounted power plants) often require an operating life of 10 to 15 years and operate in harsh environments, thus placing far higher demands on aluminum electrolytic capacitors than on ordinary consumer electronics.

Advantages of Yongming's Surface Mount Aluminum Electrolytic Capacitors

☑ Extremely high reliability and long lifespan

1. Long life parameters: Typically, a rated life of 5,000 to 10,000 hours is required at 105° C. 2. Calculation model: According to Arrhenius's Law, the lifespan doubles for every 10° C decrease in temperature. BMS design typically requires stable operation for more than 10 years at actual operating temperatures (e.g., 65° C).

☑ High temperature resistance and environmental adaptability

Energy storage cabinets are typically placed outdoors, facing extreme climates. 1. Temperature range: Must cover -40° C to +105° C. In extremely low temperatures of -55° C, YMIN SMD capacitors retain over 80% of their capacitance. In low temperatures of -40° C, the capacitance retention is over 90%. 2. Vibration-resistant design: For vehicle-mounted mobile energy storage or environments with mechanical vibration, reinforced foot fixing or vibration-proof enclosures are required. 3. Yung-Ming can provide SMD series products with higher temperature resistance of 125° C/135° C.

☑ Low ESR and ripple current withstand

The BMS integrates numerous DC-DC conversion circuits with a high switching frequency.

1. Low ESR: Only low ESR can reduce capacitor heat generation (self-temperature rise) during high-frequency charging and discharging.

2. Ripple Current Tolerance: Energy storage systems experience large fluctuations in charging and discharging current; capacitors must be able to withstand significant ripple current without breakdown or overheating. YMIN capacitors of the same specifications have a ripple current tolerance 20-30% higher than competitors.

☑ Low leakage current

YMIN SMD capacitors typically have an actual leakage current of less than 1/10 of the specified value, reducing BMS static power consumption and preventing static imbalance of the cells, which is the highest level in the industry.

☑ Miniaturization and high power density

As BMS (Building Management Systems) increasingly pursues higher integration, there are stricter requirements for capacitor size: 1. Surface Mount Technology (V-chip): Enabling automated production (SMT) and high-density mounting to save space, YMIN pioneered the use of through-hole to surface mount technology across all voltage ranges from 6.3V to 500V.

2. High Capacitance Density: YMIN offers 20%-30% higher capacitance than its competitors in the same volume, better smoothing bus voltage fluctuations;

Recommended selection of Yongming aluminum electrolytic capacitors
(the following are example specifications for reference only).

Capacitor type	shape	series	Temperature life	Rated voltage (V)	Nominal capacity (μ F)	Product dimensions D*L (mm)	ESR (Ω /100kHz)	Product part number
Aluminum electrolytic capacitors	surface mount type	VKM	105°C 7000H	10	220	5*10	0.53	VKMB1001A221MV
		VKM	105°C 10000H	25	2200	16*17	0.068	VKMI1701E222MV
		VKM	105°C 7000H	35	22	5*10	1.4	VKMB1001V220MV
		VKM	105°C 10000H	50	220	10*13	0.59	VKME1301H221MV
		VKO	105°C 8000H	100	10	8*10	1.5	VKOD1002A100MV
		VKM	105°C 10000H	250	68	12.5*21	1.35	VKML2102E680MV
	Lead type	LK	105°C 6000H	25	100	6.3*9	0.25	OLKC0901E101MF
		LK	105°C 8000H	25	220	8*9	0.23	OLKD0901E221MF
		LKM	105°C 9000H	35	100	6.3*9	0.28	LKMC0901V101MF
		LKM	105°C 10000H	100	82	8*16	0.19	LKMD1602A820MF
		LKJ	105°C 7000H	10	680	6.3*12	0.17	LKJC1201A681MF
		LKJ	105°C 7000H	25	330	8*11.5	0.13	LKJD1151E331MF

Yongming's advantages in solid-liquid hybrid aluminum electrolytic capacitors

✓ Ultra-low ESR and wideband stability

Yongming's solid-liquid hybrid capacitors can achieve an ESR as low as $8m\Omega$ @100kHz,

and maintain stable ESR over a wide frequency range of 10kHz to

✓ Overload resistance

Yongming's solid-liquid hybrid capacitors possess strong ripple resistance, with a temperature rise of no more than 2°C under standard ripple current;

They can withstand ultra-high inrush currents exceeding 20A, ensuring capacitor safety and reliability.

✓ Ultra-low leakage current, wide tempera-

YMIN's solid-liquid hybrid capacitors maintain ultra-low leakage current, ensuring a level of $\leq 0.003CV$; the leakage current remains almost unchanged within 5 years of long-term storage; leakage current variation can be controlled to $\leq 10\%$ within a wide temperature range of -55°C to +150°C; and the leakage current remains stable under various operating conditions, effectively reducing the standby power consumption of the BMS.

✓ Long lifespan and high-temperature

YMIN's solid-liquid hybrid capacitors boast a lifespan of up to 4000 hours in high-temperature environments of 125°C ~135°C, and an even longer lifespan of up to 15 years in battery operating environments at 65°C.

The capacitance degradation rate after long-term operation is less than 5%, ensuring the BMS maintains its original performance.

✓ High capacity density and miniaturized desi

YMIN's hybrid solid-liquid capacitors combine the properties of solid and liquid dielectrics with a special manufacturing process, resulting in 15% to 20% higher capacitance than similar capacitors in the industry for the same volume.

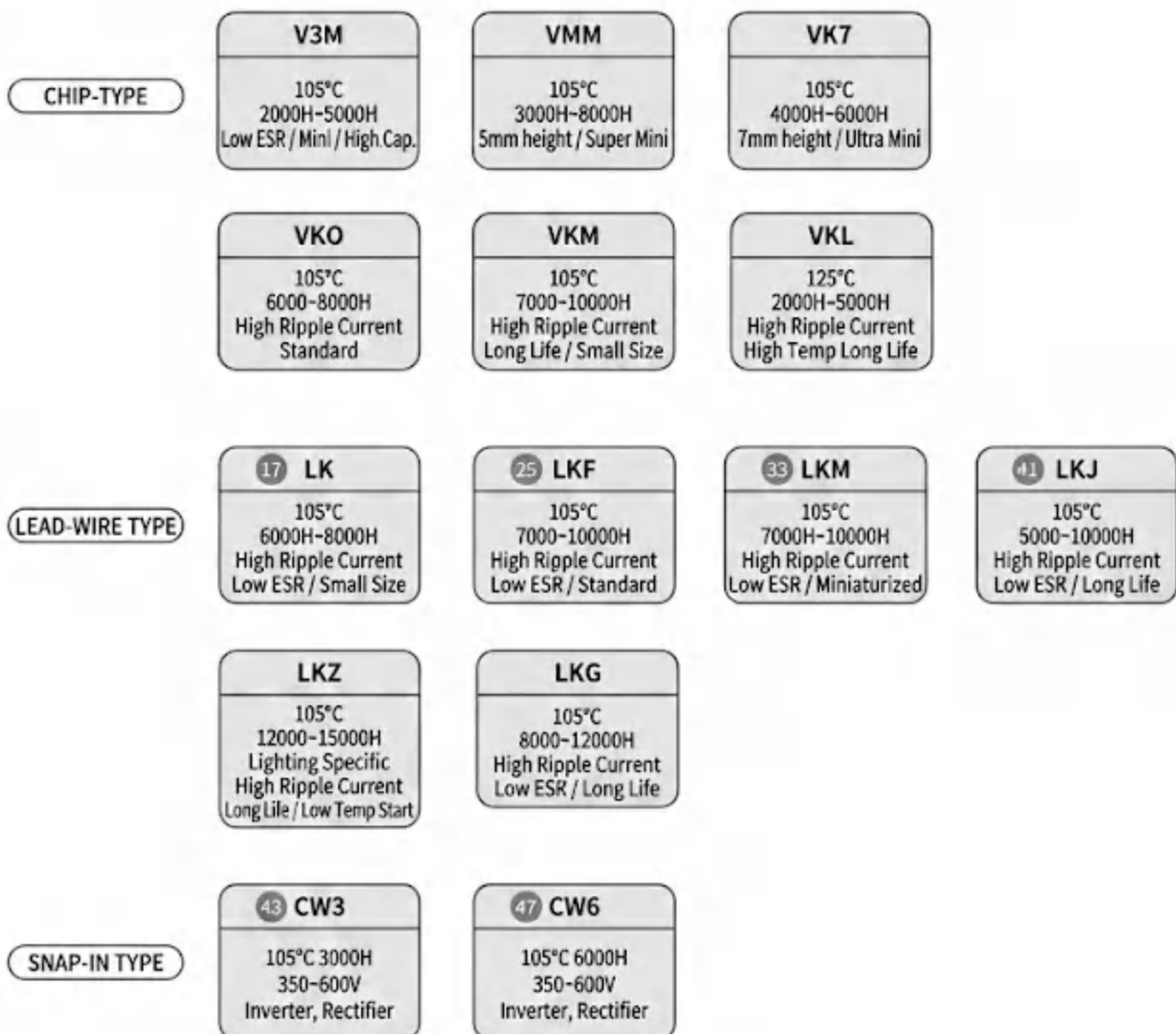
Recommended Selection Guide for YMIN Solid-Liquid Hybrid Aluminum Electrolytic Capacitors
(The following are example specifications for reference only)

Capacitor type	shape	series	Temperature life	Rated voltage (V)	Nominal capacity (μ F)	Product dimensions D*L (mm)	ESR (Ω /100kHz)	Product part number
Polymer Hybrid Power Aluminum Electrolytic Capacitor	surface mount type	VHT	125°C 4000H	16	220	6.3*7.7	27	VHTC0771C221MVCG
		VHT	125°C 4000H	25	100	6.3*7.7	30	VHTC0771E101MVCG
		VHT	125°C 4000H	35	47	6.3*5.8	60	VHTC0581V470MVCG
		VHT	125°C 4000H	35	100	6.3*7.7	35	VHTC0771V101MVCG
		VHT	125°C 4000H	35	100	8*10.5	27	VHTD1051V101MVCG
		VHT	125°C 4000H	35	330	10*10.5	20	VHTE1051V331MVCG
		VHT	125°C 4000H	50	82	8*10.5	30	VHTD1051H820MVCG
		VHT	125°C 4000H	63	150	10*12.5	20	VHTE1251J151MVCG

PRODUCT SYSTEM DIAGRAM

PRODUCT SYSTEM DIAGRAM

LIQUID ALUMINUM ELECTROLYTIC CAPACITORS



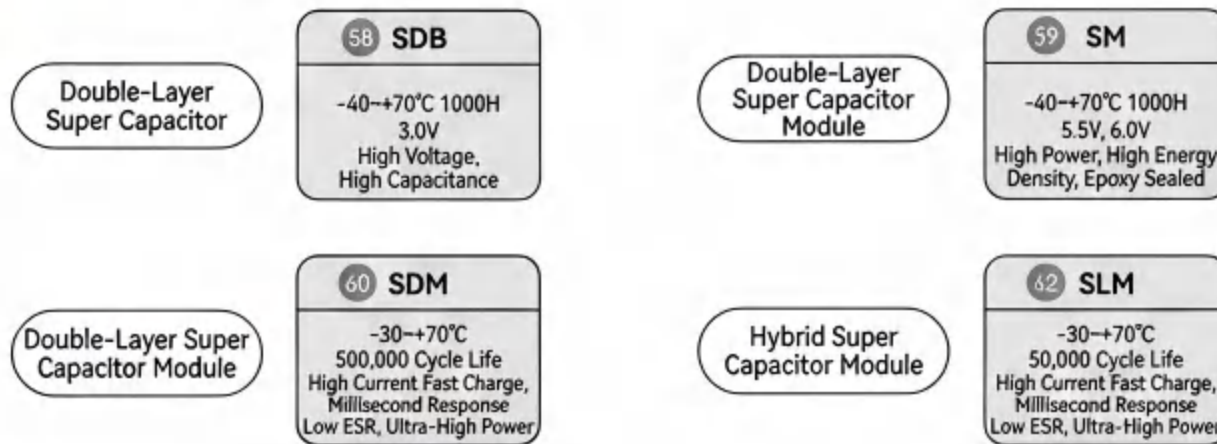
■ Polymer Solid Aluminum Electrolytic Capacitors



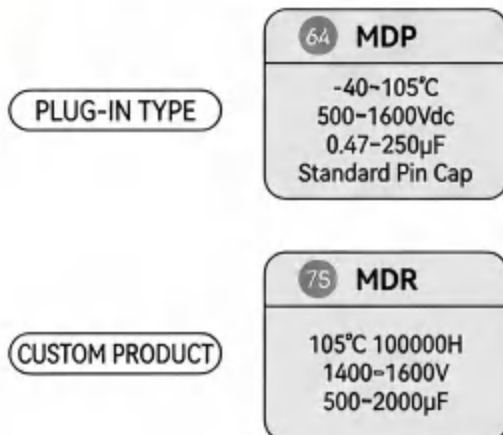
■ Polymer Hybrid Aluminum Electrolytic Capacitors



■ Super Capacitors



■ Metallized Film Capacitors



LK

◆ Compact size, withstands high frequency and high ripple current, high frequency and low impedance, designed for high-end power supplies

◆ 6000~8000 hours at 105°C

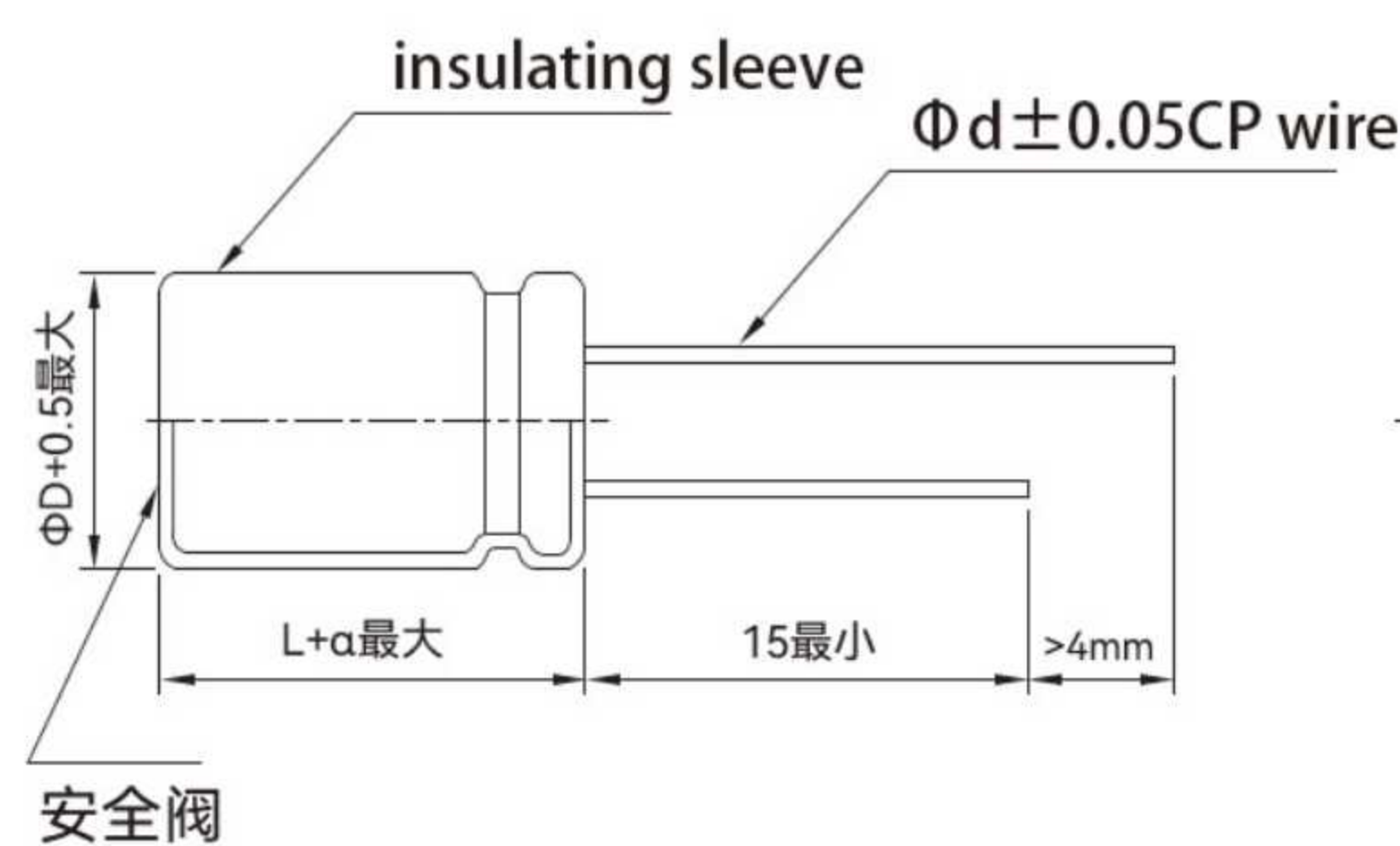
◆ Compliant with AEC-Q200 RoHS directive



Main technical parameters

project	characteristic								
Operating Temperature Range	≅ 120V - 55~+105°C ; 160~500V - 40~+105°C								
Nominal Voltage Range	10~500V								
Capacity Tolerance	±20% (25±2°C 120Hz)								
Leakage Current (μA)	10~120WV I ≅ 0.01CV or 3 μA (whichever is greater) C: Nominal capacitance (μF) V: Rated voltage (V) Readings taken after 2 minutes								
	160~500WV I ≅ 0.02CV+10(μA) C: Nominal capacitance (μF) V: Rated voltage (V) Readings taken over 2 minutes								
Loss Tangent (25 ± 2° C 120Hz)	Rated voltage (V)	10	16	25	35	50	63	80	100
	tg δ	0.19	0.16	0.14	0.12	0.10	0.09	0.09	0.09
	Rated voltage (V)	120	160	200	250	350	400	450	500
	tg δ	0.09	0.09	0.08	0.08	0.10	0.10	0.12	0.20
For nominal capacities exceeding 1000 μF, the loss tangent increases by 0.02 for every additional 1000 μF.									
Temperature Characteristics (120Hz)	Rated voltage (V)	10	16	25	35	50	63	80	100
	Impedance ratio Z(-40°C)/Z(20°C)	6	4	3	3	3	3	3	3
	Rated voltage (V)	120	160	200	250	350	400	450	500
	Impedance ratio Z(-40°C)/Z(20°C)	5	5	5	5	7	7	7	8
Durability	After being stored at 105°C for 1000 hours and then placed at room temperature for 16 hours for testing at a test temperature of 25±2°C, the capacitor performance should meet the following requirements.								
	Capacity change rate	Within ±20% of the initial value							
	Loss tangent	Below 200% of the specified value							
	Leakage current	Below the specified value							
	Load life	≅ Φ5~Φ6.3		6000h		≅ Φ8		8000h	
High Temperature Storage	After being stored at 105°C for 1000 hours and then placed at room temperature for 16 hours for testing at a test temperature of 25±2°C, the capacitor performance should meet the following requirements.								
	Capacity change rate	Within ±20% of the initial value							
	Loss tangent	Below 200% of the specified value							
	Leakage current	Below 200% of the specified value							

Product dimension drawing (unit: mm)



L=9	α=1.0
L≅16	α=1.5
L > 16	α=2.0

D	5	6.3	8	10	12.5~13	12.5~13(高度≧30)	14.5	16	18
d	0.5	0.5	0.6	0.6	0.7	0.6	0.8	0.8	0.8
F	2.0	2.5	3.5	5.0	5.0	5.0	7.5	7.5	7.5

备注: ≧Φ6.3 产品有安全阀

Ripple current compensation coefficient

① Frequency correction factor

Frequency (Hz)	50	120	1K	10K~50K	100K
Correction Factor	0.40	0.50	0.80	0.90	1.00

② Temperature correction factor

Ambient temperature (°C)	50°C	70°C	85°C	105°C
Correction factor	2.1	1.8	1.4	1.0



List of Standard Products

Voltage (V)	10			16			25			35		
project	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
Capacity (μF)												
10	5×9	1.10	55	5×9	1.10	70	5×9	1.10	90	5×9	1.60	100
15	5×9	1.10	75	5×9	1.10	90	5×9	1.10	110	5×9	1.10	120
22	5×9	0.42	90	5×9	0.42	110	5×9	1.10	120	5×9	1.10	160
33	5×9	0.42	105	5×9	0.42	120	5×9	0.42	150	5×9	0.42	215
39	5×9	0.42	135	5×9	0.42	150	5×9	0.42	180	5×9	0.42	215
47	5×9	0.28	142	5×9	0.28	160	5×9	0.28	210	5×11	0.38	310
56	5×9	0.28	150	5×9	0.28	170	5×9	0.28	290	5×11	0.38	310
68	5×9	0.28	160	5×9	0.28	180	5×11	0.25	310	6.3×9	0.36	390
82	5×9	0.28	170	5×9	0.28	210	5×11	0.25	310	6.3×9	0.36	390
100	5×9	0.28	180	5×9	0.28	290	5×11	0.25	310	6.3×11	0.17	404
100										8×9	0.17	441
120	5×9	0.28	210	5×11	0.25	310	6.3×9	0.25	390	8×9	0.17	441
150	5×9	0.28	290	6.3×9	0.25	390	6.3×11	0.17	404	8×11.5	0.13	830
150							8×9	0.17	441	10×9	0.13	765
180	5×11	0.28	290	6.3×9	0.25	390	6.3×11	0.17	404	8×11.5	0.13	830
180							8×9	0.17	441	10×9	0.13	765
220	5×11	0.25	310	6.3×11	0.17	404	6.3×11	0.17	404	8×11.5	0.13	830
220				8×9	0.17	441	8×9	0.17	441	10×9	0.13	765
270	6.3×9	0.25	390	6.3×11	0.17	404	8×11.5	0.10	830	8×16	0.10	1150
270				8×9	0.17	441	10×9	0.10	765	10×12.5	0.10	1150
330	6.3×11	0.17	404	6.3×11	0.17	650	8×11.5	0.10	830	8×16	0.10	1170
330	8×9	0.17	441	8×9	0.17	765	10×9	0.10	765	10×12.5	0.10	1150
390	6.3×11	0.17	650	8×11.5	0.10	830	8×14	0.12	1150	8×20	0.0505	1350
390	8×9	0.17	765	10×9	0.10	765	10×12.5	0.10	1150	10×16	0.0505	1550
470	6.3×11	0.17	650	8×11.5	0.10	830	8×16	0.10	1170	8×20	0.0505	1350
470	8×9	0.17	765	10×9	0.10	765	10×12.5	0.10	1150	10×16	0.0505	1550
560	8×11.5	0.10	830	8×11.5	0.10	830	8×20	0.0505	1350	10×16	0.0420	1550
560	10×9	0.10	765	10×9	0.10	765	10×12.5	0.10	1150	12.5×14	0.0500	1808
680	8×11.5	0.10	830	8×16	0.10	1125	8×20	0.0505	1350	10×20	0.0420	1590
680	10×9	0.10	765	10×12.5	0.13	1150	10×16	0.0505	1550	12.5×16	0.0500	1910
820	8×11.5	0.10	830	8×20	0.0505	1350	10×16	0.0505	1550	10×20	0.0420	1590
820				10×14	0.0805	1350	12.5×14	0.0600	1808	12.5×16	0.0500	1910
1000	8×16	0.10	1125	8×20	0.0505	1350	10×20	0.0505	1808	12.5×20	0.0300	2250
1000	10×12.5	0.10	1150	10×14	0.0805	1350	12.5×14	0.0600	1808			
1200	8×16	0.10	1125	10×16	0.0505	1550	10×23	0.0500	2050	10×27	0.0300	2220
1200	10×14	0.0805	1350	12.5×14	0.0600	1808	12.5×16	0.0500	1910	12.5×20	0.0300	2250
1500	8×20	0.0805	1350	10×20	0.0420	1590	12.5×20	0.0300	2250	12.5×25	0.0270	2620
1500	10×14	0.0805	1350	12.5×14	0.0600	1808				16×20	0.0270	2925
1800	10×20	0.0620	1590	10×20	0.0420	1590	12.5×20	0.0300	2250	12.5×35	0.0210	3215



List of Standard Products

Voltage (V)	10			16			25			35		
project	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
Capacity (μF)												
1800	12.5×14	0.0600	1808	12.5×16	0.0500	1910	10×27	0.03	2580	12.5×27	0.035	2800
1800										14.5×16	0.0210	3180
1800										16×20	0.0210	3270
2200	10×20	0.0620	1590	10×23	0.0300	2050	12.5×25	0.0270	2620	12.5×35	0.0160	3215
2200	12.5×14	0.0600	1808	12.5×20	0.0300	2250	14.5×16	0.0270	2620	14.5×20	0.0160	3215
2200										16×25	0.0160	3270
2700	10×20	0.0620	1590	12.5×20	0.0300	2250	12.5×27	0.026	3050	13×27	0.025	3020
2700	12.5×16	0.0500	1910				12.5×30	0.0250	3110	14.5×23	0.0160	3320
2700										16×31.5	0.0140	3500
2700										18×25	0.0270	3600
3300	12.5×20	0.0300	2250	10×27	0.0312	2800	12.5×35	0.0250	3215			
3300				12.5×25	0.0268	2620	13×27	0.025	3150			
3300				14.5×16	0.0268	2620	14.5×20	0.0250	3180	14.5×25	0.0150	3400
3300							14.5×23	0.0240	3270	16×31.5	0.0123	3500
3300							16×25	0.0250	3270	18×25	0.0135	3600
3900	12.5×20	0.0300	2250	12.5×30	0.0255	3110	14.5×25	0.0230	3350	14.5×27	0.0140	3520
3900				16×20	0.0268	2925	16×31.5	0.0200	3500	16×35.5	0.0100	3610
3900							18×25	0.0135	3300	18×25	0.0135	3600
4700	10×27	0.035	2500	12.5×27	0.0285	3050						
4700	12.5×25	0.0270	2620	12.5×30	0.0255	3110						
4700	14.5×16	0.0280	2450	14.5×20	0.0255	3110	14.5×27	0.0220	3460	16×40	0.0100	3680
4700				16×25	0.0246	3270	18×25	0.0135	3600	18×35.5	0.0100	3680
5600	12.5×25	0.0270	2620	12.5×35	0.0246	3215						
5600	12.5×27	0.027	2680	14.5×23	0.0250	3200						
5600				16×25	0.0246	3270	18×31.5	0.0120	3610			
6800	12.5×30	0.0155	3110	13×27	0.0255	3280						
6800	13×27	0.016	3110	14.5×25	0.0246	3270						
6800	14.5×20	0.0180	2780	16×31.5	0.0213	3500						
6800	16×25	0.0146	3270	18×25	0.0235	3600	18×35.5	0.0110	3680			
8200	12.5×40	0.0123	3500	16×35.5	0.0220	3610	18×40	0.0100	3735			
8200	14.5×25	0.0160	3160	14.5×27	0.0238	3450						
8200	16×25	0.0146	3270	18×31.5	0.0220	3610						
10000	14.5×27	0.0150	3280	14.5×27	0.0238	3450						
10000	16×31.5	0.0123	3500									
10000	18×25	0.0135	3600	18×35.5	0.0210	3680						

Voltage (V)	50			63			80			100		
project	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
Capacity (μF)												
0.47	5×9	5.50	20	5×9	3.00	22	5×9	3.00	23	5×9	5.00	23
1.0	5×9	5.50	30	5×9	3.00	33	5×9	3.00	34	5×9	3.00	34
1.8	5×9	5.50	36	5×9	3.00	40	5×9	3.00	42	5×9	3.00	42
2.2	5×9	1.60	38	5×9	3.00	44	5×9	3.00	46	5×9	3.00	46
2.7	5×9	1.60	46	5×9	3.00	51	5×9	1.50	54	5×9	3.00	54
3.3	5×9	1.60	53	5×9	3.00	58	5×9	1.50	61	5×9	1.50	61



List of Standard Products

Voltage (V)	50			63			80			100		
project	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
Capacity (μF)												
3.9	5×9	1.60	70	5×9	3.00	77	5×9	1.50	80	5×9	1.50	80
4.7	5×9	1.60	88	5×9	3.00	97	5×9	1.50	100	5×9	1.50	100
5.6	5×9	1.60	90	5×9	1.50	99	5×9	1.50	105	5×11	1.50	105
6.8	5×9	1.60	93	5×9	1.50	102	5×9	1.50	110	5×11	1.50	110
8.2	5×9	1.60	97	5×9	1.50	108	5×9	1.50	125	5×11	1.50	125
10	5×9	1.60	100	5×9	1.50	110	5×9	1.50	135	5×11	1.50	135
12	5×9	1.60	110	5×9	1.50	120	5×11	1.50	150	6.3×9	1.00	216
15	5×9	1.60	120	5×9	1.50	145	5×11	1.50	150	6.3×9	1.00	216
18	5×9	1.40	130	5×9	1.00	155	6.3×9	1.00	216	6.3×11	0.64	240
18										8×9	0.64	216
22	5×9	1.40	145	5×11	1.00	160	6.3×9	1.00	216	6.3×11	0.64	240
22										8×9	0.64	216
27	5×11	0.38	215	6.3×9	0.60	225	6.3×11	0.64	240	8×9	0.64	369
27							8×9	0.64	260			
33	5×11	0.38	215	6.3×9	0.60	225	6.3×11	0.64	240	8×11.5	0.41	410
33							8×9	0.64	260	10×9	0.41	369
39	6.3×9	0.38	315	6.3×9	0.40	250	8×9	0.64	260	8×11.5	0.41	410
39										10×9	0.41	369
47	6.3×9	0.36	350	6.3×11	0.40	250	8×11.5	0.41	410	8×16	0.29	510
47				8×9	0.50	260	10×9	0.41	450	10×12.5	0.29	510
56	6.3×11	0.36	350	8×9	0.50	350	8×11.5	0.41	410	8×16	0.29	510
56	8×9	0.25	450				10×9	0.41	450	10×12.5	0.26	565
68	6.3×11	0.36	350	8×11.5	0.25	480	8×11.5	0.41	410	8×20	0.22	660
68	8×9	0.25	450	10×9	0.25	490	10×9	0.41	450	10×14	0.22	660
82	8×9	0.25	585	8×11.5	0.25	480	8×16	0.29	510	8×20	0.22	660
82				10×9	0.25	490	10×12.5	0.29	565	10×16	0.20	710
100	8×9	0.25	585	8×14	0.25	550	8×16	0.29	510	10×16	0.20	710
100				10×9	0.25	500	10×12.5	0.26	565	12.5×14	0.18	833
120	8×11.5	0.16	630	8×16	0.19	620	8×20	0.22	660	10×20	0.14	950
120	10×9	0.16	650	10×12.5	0.18	630	10×14	0.20	660	12.5×14	0.18	833
150	8×14	0.12	760	8×20	0.14	775	10×16	0.20	710	10×20	0.15	950
150	10×9	0.12	650	10×14	0.14	810	12.5×14	0.18	833	12.5×16	0.15	880
180	8×16	0.12	860	8×20	0.14	775	10×20	0.14	950	12.5×20	0.0959	1290
180	10×12.5	0.12	875	10×16	0.14	900	12.5×14	0.18	833			
220	8×16	0.12	860	10×16	0.14	900	10×20	0.14	950	12.5×20	0.0959	1290
220	10×12.5	0.12	875				12.5×16	0.18	1020			
270	8×20	0.0768	1080	10×20	0.0877	1080	12.5×20	0.0959	1290	10×27	0.072	1440
270	10×16	0.0768	1250	12.5×14	0.0920	1022				12.5×25	0.0673	1460
330	10×16	0.0768	1250	10×20	0.0877	1080	12.5×20	0.0959	1290	12.5×30	0.0571	1760
330										14.5×16	0.0570	1500
330	12.5×14	0.0810	1022	12.5×16	0.0920	1080				16×20	0.0653	1560



List of Standard Products

Voltage (V)	50			63			80			100		
project Capacity (μF)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
390	10×20	0.0695	1430				10×27	0.0675	1420	12.5×27	0.056	1760
390	12.5×14	0.0810	1022	12.5×20	0.0673	1415	12.5×25	0.0673	1460	12.5×35	0.0520	1930
390							12.5×25	0.0673	1460	16×25	0.0480	1990
470	10×20	0.0695	1430	12.5×20	0.0673	1415	12.5×30	0.0571	1760	13×27	0.050	1950
470	12.5×16	0.0675	1080	12.5×25	0.0479	1800	14.5×16	0.0760	1460	14.5×20	0.0520	1890
470							16×20	0.0653	1560	16×25	0.0480	1990
470										18×20	0.0465	1990
560	12.5×16	0.0675	1598	10×27	0.06	1800	12.5×27	0.056	1850	14.5×23	0.048	1950
560										14.5×25	0.0420	2010
560							16×25	0.0480	1990	16×31.5	0.0368	2160
560										18×25	0.0427	2050
680	12.5×20	0.0600	1850	12.5×30	0.0410	2370	12.5×35	0.0520	1930			
680							13×27	0.055	1920			
680				14.5×16	0.0560	1620	14.5×20	0.0630	1720	14.5×27	0.0360	2150
680				16×20	0.0482	1890	14.5×23	0.0570	1860	16×35.5	0.0326	2340
680							16×25	0.0480	1990	18×31.5	0.0346	2230
820	10×27	0.062	1950	12.5×27	0.0480	2220	14.5×25	0.0520	1990			
820	12.5×25	0.0625	2170	12.5×35	0.0367	2360	16×31.5	0.0368	2160	16×40	0.0305	2580
820	14.5×16	0.0580	2480	16×25	0.0385	2460	18×25	0.0427	2050	18×35.5	0.0305	3160
1000				13×27	0.0430	2480						
1000	12.5×27	0.0580	2520	14.5×20	0.0480	2180						
1000	12.5×30	0.0580	2580	14.5×23	0.0440	2300	14.5×27	0.0480	2080			
1000	16×20	0.0580	2460	16×25	0.0385	2460	16×35.5	0.0326	2340			
1000				18×20	0.0426	2550	18×31.5	0.0346	2230	18×40	0.0305	3160
1200	12.5×30	0.0580	2580									
1200	13×27	0.0520	2560	14.5×25	0.0420	2420						
1200	14.5×20	0.0480	2580	16×31.5	0.0350	2695	16×40	0.0305	2580			
1200	16×25	0.0455	2710	18×25	0.0350	2520	18×31.5	0.0246	2970			
1500	12.5×40	0.0211	2745									
1500	14.5×23	0.0390	2620	14.5×27	0.0390	2540						
1500	14.5×25	0.0300	2680	16×31.5	0.0350	2695						
1500	16×25	0.0240	2710	18×31.5	0.0350	2970	18×35.5	0.0246	3160			
1800	16×31.5	0.0265	2960	16×40	0.0350	3215						
1800	18×25	0.0347	2760	18×31.5	0.0350	2970	18×40	0.0204	3160			
2200	14.5×27	0.0280	2780									
2200	18×31.5	0.0286	2970	18×35.5	0.0350	3215						
2700	18×35.5	0.0224	3215	18×40	0.0350	3310						
3300	18×40	0.0204	3410									

Voltage (V)	120			160			200			250		
project Capacity (μF)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
0.47	5×9	6.60	23									
1.0	5×9	6.60	34	5×11	40.00	50	5×11	40.00	50	6.3×9	30.00	95
1.2	5×9	6.60	34	5×11	40.00	55	5×11	40.00	55	6.3×9	30.00	95



List of Standard Products

Voltage (V)	120			160			200			250		
	project	Dimensions: $\Phi D \times L$ (mm)	Impedance ($\Omega_{max}/100kHz$ $25 \pm 2^\circ C$)	Ripple current (mA r.m.s / $105^\circ C$ 120Hz)	Dimensions: $\Phi D \times L$ (mm)	Impedance ($\Omega_{max}/100kHz$ $25 \pm 2^\circ C$)	Ripple current (mA r.m.s / $105^\circ C$ 120Hz)	Dimensions: $\Phi D \times L$ (mm)	Impedance ($\Omega_{max}/100kHz$ $25 \pm 2^\circ C$)	Ripple current (mA r.m.s / $105^\circ C$ 120Hz)	Dimensions: $\Phi D \times L$ (mm)	Impedance ($\Omega_{max}/100kHz$ $25 \pm 2^\circ C$)
Capacity (μF)												
1.5	5×9	6.60	42	5×11	40.00	60	5×11	40.00	60	6.3×9	30.00	95
1.8	5×9	6.60	42	5×11	40.00	65	5×11	40.00	66	6.3×9	30.00	95
2.2	5×9	1.80	46	5×11	40.00	75	5×11	40.00	75	6.3×9	30.00	104
2.7	5×9	1.80	54	5×11	40.00	80	5×11	40.00	80	6.3×9	30.00	113
3.3	5×9	1.80	61	5×11	40.00	90	6.3×9	30.00	95	6.3×9	30.00	113
3.9	5×9	1.80	80	5×11	40.00	90	6.3×9	30.00	104	6.3×9	15.00	113
4.7	5×9	1.80	100	6.3×9	25.00	104	6.3×11	15.00	115	6.3×11	15.00	125
4.7							8×9	15.00	135	8×9	15.00	135
5.6	5×11	1.80	105	6.3×9	25.00	104	6.3×11	15.00	115	8×9	15.00	135
5.6							8×9	15.00	135			
6.8	5×11	1.60	110	6.3×9	25.00	122	8×9	15.00	135	8×9	15.00	135
8.2	5×11	1.60	125	6.3×11	22.00	125	8×9	15.00	135	8×11.5	15.00	150
8.2				8×9	22.00	130				10×9	15.00	150
10	6.3×9	1.21	135	8×9	22.00	130	8×11.5	15.00	150	8×11.5	15.00	150
10							10×9	15.00	150	10×9	15.00	150
12	6.3×9	1.21	163	8×11.5	20.00	135	8×14	12.00	220	8×14	12.00	220
15	6.3×11	0.83	195	8×11.5	16.00	135	8×16	8.92	250	8×16	8.92	250
15	8×9	0.83	195	10×9	16.00	140	10×12.5	8.92	260	10×12.5	8.92	250
18	8×9	0.83	215	8×11.5	16.00	135	8×20	6.80	315	8×20	6.80	315
18				10×9	16.00	140	10×14	6.80	290	10×14	6.80	290
22	8×9	0.83	215	8×16	8.92	250	8×20	6.80	315	8×20	6.80	315
22				10×12.5	8.92	250	10×14	6.80	290	10×14	6.80	290
27	8×11.5	0.64	369									
33	8×11.5	0.50	369	8×20	6.80	315	10×20	6.60	575	10×20	6.60	575
33	10×9	0.50	369	10×12.5	6.80	450	12.5×14	6.60	670	12.5×14	6.00	650
39	8×14	0.41	410									
39	10×12.5	0.41	410									
47	8×16	0.32	451	10×16	6.60	580	12.5×20	4.65	870	12.5×20	4.65	870
47	10×12.5	0.32	451	12.5×14	6.60	650						
56	8×20	0.29	510	10×20	6.60	600	12.5×20	4.65	870	10×27	4.65	870
56	10×14	0.29	565	12.5×14	6.60	670				12.5×20	4.65	870
68	8×23	0.22	660	10×23	4.65	670	12.5×25	4.31	1150	12.5×25	4.31	1150
68	10×16	0.22	660	12.5×16	4.65	770	16×20	4.31	1200	16×20	4.31	1200
82	10×16	0.22	660	10×23	4.65	770	12.5×25	4.31	1150	12.5×25	4.31	1150
82										14.5×16	4.31	1150
82	12.5×14	0.20	710	12.5×20	4.65	1040	16×20	4.31	1200	16×20	4.31	1200
100	10×20	0.20	710	10×27	4.80	1040	10×27	4.50	1050	12.5×27	3.60	1150
100							12.5×25	4.31	1150	12.5×30	3.35	1260
100							14.5×16	4.31	1150	14.5×20	3.35	1200
100	12.5×16	0.18	833	12.5×20	4.65	1040	16×20	4.31	1200	16×25	3.05	1350
120										13×27	3.35	1260
120	10×23	0.18	850	12.5×25	4.09	1260	12.5×30	3.05	1440	14.5×25	3.05	1280
120				14.5×16	4.50	1050				16×25	3.05	1350



List of Standard Products

Voltage (V)	120			160			200			250		
project Capacity (μF)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
120	12.5×16	0.18	833	16×20	4.09	1260	16×25	3.05	1670			
150	12.5×20	0.15	950	12.5×27	4.50	1600	12.5×27	3.90	1520			
150				12.5×30	4.09	1600	14.5×20	3.05	1510			
150							14.5×23	2.90	1650	16×31.5	2.71	1780
150				16×25	3.92	1670	16×25	3.05	1670	18×25	2.71	1780
180	12.5×25	0.11	1290	12.5×35	3.01	1720						
180				13×27	4.20	1700	13×27	3.20	1620	14.5×27	2.60	1325
180				14.5×20	4.00	1520	14.5×25	2.85	1720	16×35.5	2.10	2025
180				14.5×23	3.8	1700	16×35.5	2.10	2025	18×31.5	2.10	2025
180				16×25	3.92	1670	18×25	2.71	2025	18×35.5	1.04	2365
220	16×20	0.11	1290	14.5×25	3.50	1880	14.5×27	2.7	1880			
220				16×31.5	2.71	2160						
220				18×25	2.71	2090	18×31.5	2.10	2200			
270	12.5×30	0.0859	1460	14.5×27	3.10	2020						
270	16×20	0.0859	1460									
330	16×25	0.0671	1760									
330	18×20	0.0671	1560	18×31.5	1.25	2400						
390	16×31.5	0.0520	1930									
390	18×25	0.0520	1990	18×35.5	1.15	2850						
470	16×31.5	0.0480	1990									
470	18×25	0.0480	1990									
560	16×35.5	0.0368	2160									
560	18×31.5	0.0368	2050									
680	18×35.5	0.0326	2340									

Voltage (V)	350			400			450			500		
project Capacity (μF)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
1.0	6.3×9	38.00	68	6.3×9	58.00	68	6.3×9	58.00	77	6.3×11	52.00	40
1.2	6.3×9	38.00	95	6.3×9	38.00	77	6.3×9	55.00	77	6.3×11	52.00	40
1.5	6.3×9	38.00	95	6.3×9	38.00	77	6.3×9	55.00	85	6.3×11	52.00	40
1.8	6.3×9	38.00	104	6.3×9	33.00	90	6.3×11	55.00	90	8×9	48.00	72
1.8							8×9	45.00	90			
2.2	6.3×9	33.00	120	6.3×9	33.00	90	8×9	45.00	90	8×11.5	45.00	72
2.7	6.3×11	33.00	120	6.3×11	33.00	110	8×9	45.00	90	8×11.5	45.00	76
2.7	8×9	27.00	130	8×9	27.00	117						
3.3	6.3×11	33.00	120	6.3×12	33.00	110	8×11.5	25.50	130	8×11.5	45.00	76
3.3	8×9	27.00	130	8×9	27.00	117	10×9	25.50	130			
3.9	6.3×12	33.00	120	6.3×12	33.00	110	8×11.5	25.50	130	8×14	35.00	92
3.9	8×9	27.00	130	8×9	27.00	117	10×9	25.50	130			
4.7	6.3×12	33.00	120	6.3×12	33.00	120	8×11.5	25.50	130	8×16	29.00	102



List of Standard Products

Voltage (V)	350			400			450			500		
project	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
Capacity (μF)												
4.7	8×9	27.00	130	8×11.5	27.00	135	10×9	18.00	130	10×12.5	22.50	102
5.6	8×11.5	21.00	135	8×14	18.00	180	8×16	13.50	135	10×14	18.00	117
5.6	10×9	21.00	150	10×9	18.00	180	10×12.5	13.50	180			
6.8	8×11.5	21.00	135	8×16	13.50	180	8×20	9.50	200	10×14	18.00	117
6.8	10×9	21.00	150	10×12.5	13.50	180	10×12.5	13.50	180			
8.2	8×16	13.50	180	8×16	13.50	180	8×20	9.50	200	10×16	15.00	152
8.2	10×12.5	13.50	190	10×12.5	13.50	180	10×14	12.00	205			
10	8×16	13.50	180	8×20	9.50	250	10×16	9.50	205	10×20	11.00	216
10	10×12.5	13.50	220	10×14	9.50	250	12.5×14	9.20	315	12.5×14	10.00	234
12	10×14	11.00	240	10×16	9.00	280	10×20	8.15	300	12.5×16	9.50	240
15	10×16	9.50	280	10×20	8.15	310	10×20	8.15	300	12.5×16	9.00	240
15	12.5×14	8.15	530	12.5×14	8.15	310	12.5×16	8.15	410			
18	10×20	8.15	550	10×20	8.15	310	12.5×20	8.15	410	12.5×20	8.00	288
18	12.5×14	8.15	530	12.5×16	8.15	330						
22							10×27	8.15	410	10×27	8.00	305
22	12.5×16	8.15	600	12.5×20	8.15	500	12.5×20	8.15	410	12.5×25	7.00	423
27										14.5×16	7.00	423
33	12.5×20	8.15	865	10×27	5.88	670	12.5×25	6.50	650	12.5×30	6.50	508
33				12.5×25	5.14	670	14.5×16	4.14	550			
33				16×20	4.54	670	16×20	4.14	650			
39										14.5×20	5.50	600
47	12.5×25	4.14	960	12.5×30	4.14	1035	12.5×27	4.20	850	12.5×27	6.50	580
47							12.5×35	3.50	950	12.5×35	5.50	630
47				14.5×16	4.14	1035	14.5×20	4.06	610	14.5×23	3.80	630
47										14.5×25	2.50	750
47	16×20	4.14	1000	16×25	4.14	1035	16×25	3.50	950	16×25	3.50	630
56	12.5×25	4.14	960	12.5×27	4.28	985	13×27	3.50	860	13×27	5.50	630
56				14.5×20	3.80	1150	14.5×23	4.03	650	14.5×25	2.50	750
56							14.5×25	4.00	650			
56	16×20	4.14	1000	16×25	4.14	1035	16×31.5	3.50	1100	16×31.5	2.50	648
56				18×20	4.14	1280	18×25	3.50	1060			
68				13×27	4.14	1035						
68				14.5×23	3.65	1180	14.5×25	4.00	650	14.5×27	2.00	770
68	16×25	4.05	1150	16×31.5	3.50	1315	16×35.5	3.05	1240	16×35.5	2.30	756
68	18×20	3.50	1330	18×25	3.50	1330	18×31.5	3.05	1290	18×31.5	2.30	756
82				14.5×25	3.50	1230	14.5×27	3.80	860			
82	16×31.5	3.50	1400	16×35.5	3.05	1720	16×40	2.95	1510	18×35.5	1.80	990
82	18×25	3.50	1600	18×31.5	3.05	1720	18×31.5	3.05	1290	18×40	1.50	1020
100	16×31.5	3.50	2010	14.5×27	3.35	1350	18×35.5	2.75	1490			
100	18×25	3.50	2010	18×31.5	3.05	2010						
120	16×35.5	3.05	2080	18×35.5	2.05	2250	18×40	2.05	1740			
120	18×31.5	3.05	2010									
150	18×35.5	2.05	2450	18×40	2.00	2500	18×45	2.00	1950			

LKF

◆ Standard product, withstands high frequency and high ripple current, high frequency and low impedance, power supply specific product

◆ 7000~10000 hours at 105°C

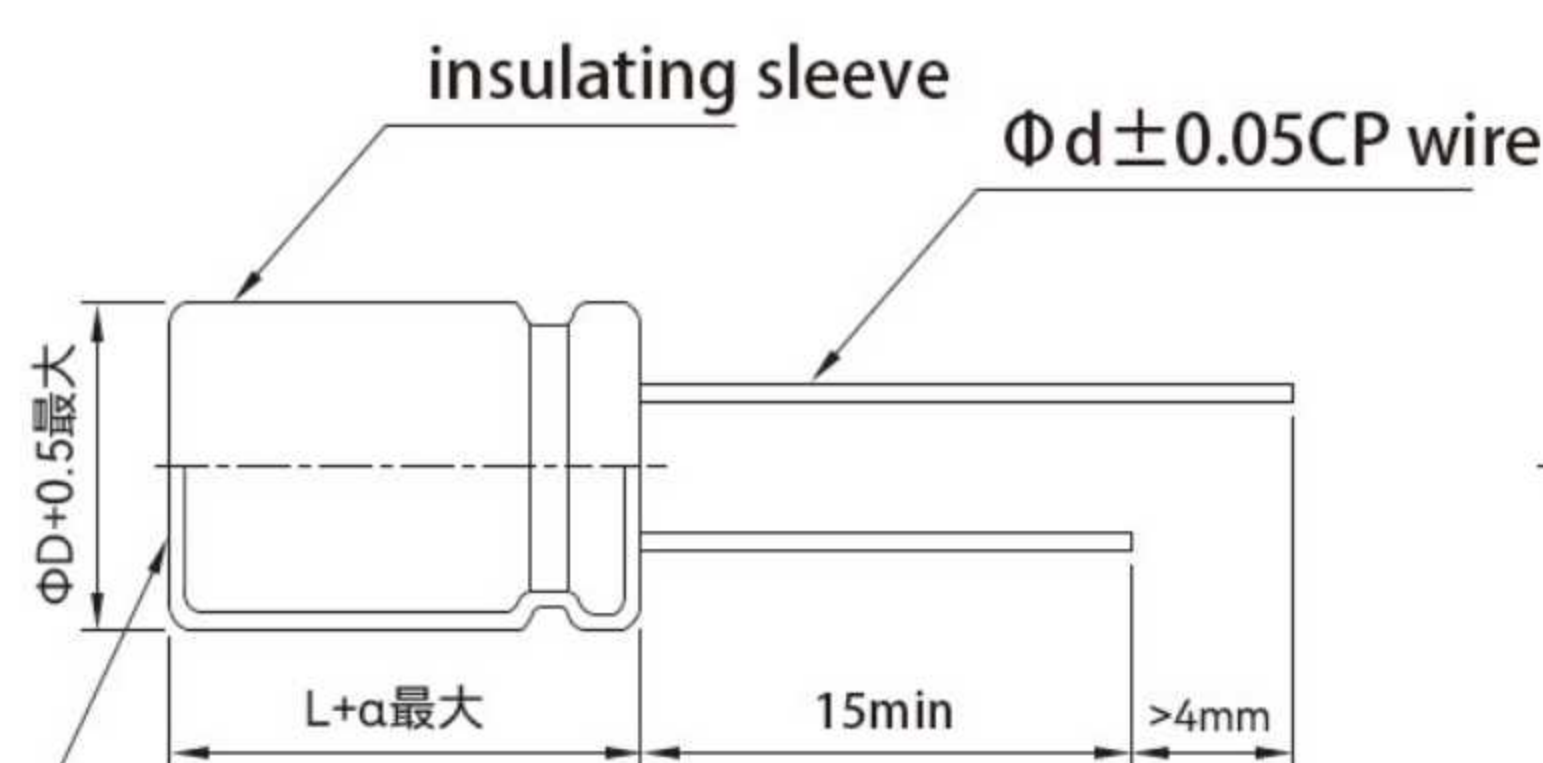
◆ Complies with AEC-Q200 RoHS directive



Main technical parameters

project	characteristic																																				
Operating Temperature Range	≦120V - 55~+105°C ; 160~500V - 40~+105°C																																				
Nominal Voltage Range	10~500V																																				
Capacity Tolerance	±20% (25±2°C 120Hz)																																				
Leakage Current (μA)	10~120WV I≦0.01CV or 3μA (whichever is greater) C: Nominal capacitance (μF) V: Rated voltage (V) Readings taken after 2 minutes 160~500WV I≦0.02CV+10(μA) C: Nominal capacitance (μF) V: Rated voltage (V) Readings taken over 2 minutes																																				
Loss Tangent (25 ± 2° C 120Hz)	<table border="1"> <tr> <td>Rated voltage (V)</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>80</td> <td>100</td> </tr> <tr> <td>tg δ</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.09</td> <td>0.09</td> <td>0.09</td> </tr> <tr> <td>Rated voltage (V)</td> <td>120</td> <td>160</td> <td>200</td> <td>250</td> <td>350</td> <td>400</td> <td>450</td> <td>500</td> </tr> <tr> <td>tg δ</td> <td>0.09</td> <td>0.09</td> <td>0.08</td> <td>0.08</td> <td>0.10</td> <td>0.10</td> <td>0.12</td> <td>0.20</td> </tr> </table> <p>For nominal capacities exceeding 1000 μF, the loss tangent increases by 0.02 for every additional 1000 μF.</p>	Rated voltage (V)	10	16	25	35	50	63	80	100	tg δ	0.19	0.16	0.14	0.12	0.10	0.09	0.09	0.09	Rated voltage (V)	120	160	200	250	350	400	450	500	tg δ	0.09	0.09	0.08	0.08	0.10	0.10	0.12	0.20
Rated voltage (V)	10	16	25	35	50	63	80	100																													
tg δ	0.19	0.16	0.14	0.12	0.10	0.09	0.09	0.09																													
Rated voltage (V)	120	160	200	250	350	400	450	500																													
tg δ	0.09	0.09	0.08	0.08	0.10	0.10	0.12	0.20																													
Temperature Characteristics (120Hz)	<table border="1"> <tr> <td>Rated voltage (V)</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>80</td> <td>100</td> </tr> <tr> <td>Impedance ratio Z(-40°C)/Z(20°C)</td> <td>6</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> <tr> <td>Rated voltage (V)</td> <td>120</td> <td>160</td> <td>200</td> <td>250</td> <td>350</td> <td>400</td> <td>450</td> <td>500</td> </tr> <tr> <td>Impedance ratio Z(-40°C)/Z(20°C)</td> <td>5</td> <td>5</td> <td>5</td> <td>5</td> <td>7</td> <td>7</td> <td>7</td> <td>8</td> </tr> </table>	Rated voltage (V)	10	16	25	35	50	63	80	100	Impedance ratio Z(-40°C)/Z(20°C)	6	4	3	3	3	3	3	3	Rated voltage (V)	120	160	200	250	350	400	450	500	Impedance ratio Z(-40°C)/Z(20°C)	5	5	5	5	7	7	7	8
Rated voltage (V)	10	16	25	35	50	63	80	100																													
Impedance ratio Z(-40°C)/Z(20°C)	6	4	3	3	3	3	3	3																													
Rated voltage (V)	120	160	200	250	350	400	450	500																													
Impedance ratio Z(-40°C)/Z(20°C)	5	5	5	5	7	7	7	8																													
Durability	<p>After being stored at 105°C for 1000 hours and then placed at room temperature for 16 hours for testing at a test temperature of 25±2°C, the capacitor performance should meet the following requirements.</p> <table border="1"> <tr> <td>Capacity change rate</td> <td>Within ±20% of the initial value</td> </tr> <tr> <td>Loss tangent</td> <td>Below 200% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>Below the specified value</td> </tr> <tr> <td rowspan="3">Load life</td> <td>Φ5</td> <td>7000小时</td> </tr> <tr> <td>Φ6.3</td> <td>9000小时</td> </tr> <tr> <td>≧Φ8</td> <td>10000小时</td> </tr> </table>	Capacity change rate	Within ±20% of the initial value	Loss tangent	Below 200% of the specified value	Leakage current	Below the specified value	Load life	Φ5	7000小时	Φ6.3	9000小时	≧Φ8	10000小时																							
Capacity change rate	Within ±20% of the initial value																																				
Loss tangent	Below 200% of the specified value																																				
Leakage current	Below the specified value																																				
Load life	Φ5	7000小时																																			
	Φ6.3	9000小时																																			
	≧Φ8	10000小时																																			
High Temperature Storage	<p>After being stored at 105°C for 1000 hours and then placed at room temperature for 16 hours for testing at a test temperature of 25±2°C, the capacitor performance should meet the following requirements.</p> <table border="1"> <tr> <td>Capacity change rate</td> <td>Within ±20% of the initial value</td> </tr> <tr> <td>Loss tangent</td> <td>Below 200% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>Below 200% of the specified value</td> </tr> </table>	Capacity change rate	Within ±20% of the initial value	Loss tangent	Below 200% of the specified value	Leakage current	Below 200% of the specified value																														
Capacity change rate	Within ±20% of the initial value																																				
Loss tangent	Below 200% of the specified value																																				
Leakage current	Below 200% of the specified value																																				

Product dimension drawing (unit: mm)



L=9	α=1.0
L≦16	α=1.5
L > 16	α=2.0

D	5	6.3	8	10	12.5~13	12.5~13(h≧30)	14.5	16	18
d	0.5	0.5	0.6	0.6	0.7	0.6	0.8	0.8	0.8
F	2.0	2.5	3.5	5.0	5.0	5.0	7.5	7.5	7.5

Note: Products ≧ Φ6.3 have a safety valve.

Ripple current compensation coefficient

① Frequency correction factor

Frequency (Hz)	50	120	1K	10K~50K	100K
Correction Factor	0.40	0.50	0.80	0.90	1.00

② Temperature correction factor

Ambient temperature (°C)	50°C	70°C	85°C	105°C
Correction factor	2.1	1.8	1.4	1.0

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■ List of Standard Products

Voltage (V)	10			16			25			35		
project	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
Capacity (μF)												
10	5×9	1.10	56	5×9	1.10	71	5×9	1.10	91	5×9	1.40	101
15	5×9	1.10	76	5×9	1.10	91	5×9	1.10	111	5×9	1.10	121
22	5×9	0.40	91	5×9	0.40	111	5×9	1.10	121	5×9	1.10	160
33	5×9	0.40	106	5×9	0.40	121	5×9	0.40	151	5×9	0.40	215
39	5×9	0.26	136	5×9	0.40	151	5×9	0.40	181	5×11	0.40	345
47	5×9	0.26	143	5×9	0.26	161	5×9	0.26	211	5×11	0.37	345
56	5×9	0.26	151	5×9	0.26	171	5×9	0.26	310	6.3×9	0.34	486
68	5×9	0.26	161	5×9	0.26	181	5×11	0.24	345	6.3×11	0.260	540
68										8×9	0.260	550
82	5×9	0.26	171	5×9	0.26	211	6.3×9	0.34	486	6.3×11	0.250	540
82										8×9	0.250	550
100	5×9	0.26	181	5×11	0.24	345	6.3×9	0.34	486	6.3×11	0.250	540
100										8×9	0.250	550
120	5×9	0.26	211	5×11	0.24	345	6.3×11	0.10	540	8×9	0.250	550
120							8×9	0.10	550			
150	5×11	0.24	345	6.3×9	0.34	486	6.3×11	0.10	540	8×11.5	0.1980	945
150							8×9	0.10	550	10×9	0.1980	950
180	5×11	0.24	345	6.3×9	0.34	486	8×9	0.10	550	8×11.5	0.1980	945
180										10×9	0.1980	950
220	6.3×9	0.34	486	6.3×11	0.21	540	8×11.5	0.0980	945	8×11.5	0.1980	945
220				8×9	0.21	550	10×9	0.0980	950			
270	6.3×9	0.34	486	8×9	0.21	550	8×11.5	0.0980	945	8×16	0.0950	1250
270							10×9	0.0980	950	10×12.5	0.0900	1330
330	6.3×11	0.21	540	8×9	0.2100	550	8×11.5	0.0980	945	10×12.5	0.0900	1330
330	8×9	0.15	550									
390	8×9	0.15	550	8×11.5	0.0980	945	8×16	0.0900	1250	8×20	0.0719	1500
390				10×9	0.0980	950	10×12.5	0.0900	1330	10×16	0.0719	1850
470	8×9	0.15	550	8×11.5	0.0680	945	10×12.5	0.0900	1330	10×16	0.0540	1850
470				10×9	0.0980	950				12.5×14	0.0540	1900
560	8×11.5	0.0980	945	8×16	0.0900	1250	8×20	0.0400	1500	10×20	0.0420	1960
560	10×9	0.0980	950	10×9	0.0980	950	10×14	0.0400	1760	12.5×16	0.0420	2120
680	8×11.5	0.0980	945	8×16	0.0900	1250	10×16	0.0400	1850	10×23	0.0280	2250
680	10×9	0.0980	950	10×12.5	0.0900	1330				12.5×20	0.0280	2480
820	8×16	0.0900	1250	8×20	0.0619	1500	10×20	0.0320	1960	12.5×20	0.0280	2480
820	10×12.5	0.0900	1330	10×14	0.0600	1760	12.5×16	0.0320	2120			
1000	8×16	0.0900	1250	8×20	0.0619	1500	10×20	0.0320	1960	12.5×20	0.0280	2480
1000	10×12.5	0.0900	1330	10×16	0.0400	1850	12.5×16	0.0320	2120			
1200	8×20	0.0619	1500	10×16	0.0400	1850	12.5×20	0.0280	2480	12.5×25	0.0280	2900
1200	10×14	0.0600	1760									

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List of Standard Products

Voltage (V)	10			16			25			35		
project	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
Capacity (μF)												
1500	8×20	0.0619	1500	10×20	0.0320	1960	12.5×20	0.0280	2480	12.5×30	0.0243	3450
1500	10×16	0.0400	1850	12.5×16	0.0420	2120				16×20	0.0243	3250
1800	10×20	0.0320	1960	10×20	0.0320	1960	12.5×25	0.0280	2900	12.5×35	0.0230	3570
1800	12.5×16	0.0420	2120	12.5×16	0.0420	2120				16×25	0.0230	3630
2200	10×20	0.0320	1960	12.5×20	0.0280	2480	12.5×25	0.0230	2900	16×25	0.0230	3630
2200	12.5×16	0.0420	2120				16×20	0.0230	3250			
2700	10×23	0.0280	2250	12.5×20	0.0280	2480	12.5×35	0.0132	3570	16×35.5	0.0132	4010
2700	12.5×20	0.0280	2480				16×25	0.0143	3630	18×31.5	0.0132	4010
3300	12.5×20	0.0280	2480	12.5×25	0.0280	2900	12.5×40	0.0121	3890	16×40	0.0120	4080
3300							16×25	0.0143	3630	18×35.5	0.0120	4080
3900	12.5×25	0.0280	2900	12.5×30	0.0143	3450	16×31.5	0.0121	3890	18×35.5	0.0100	4080
3900				16×20	0.0230	3250	18×25	0.0132	3650			
4700	12.5×30	0.0143	3450	12.5×30	0.0143	3450	16×31.5	0.0121	3890			
4700	16×20	0.0230	3250	16×25	0.0143	3630	18×25	0.0110	4010			

Voltage (V)	50			63			80			100		
project	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
Capacity (μF)												
0.47	5×9	5.50	21	5×9	5.00	23	5×9	6.05	24	5×9	6.05	24
1.0	5×9	5.50	31	5×9	5.00	35	5×9	6.05	37	5×9	6.05	37
1.2				5×9	5.00	35	5×9	6.05	37	5×9	6.05	37
1.5				5×9	5.00	41	5×9	6.05	43	5×9	6.05	43
1.8	5×9	5.50	32	5×9	5.00	41	5×9	6.05	43	5×9	6.05	43
2.2	5×9	1.50	39	5×9	1.50	45	5×9	1.50	47	5×9	1.60	47
2.7				5×9	1.50	52	5×9	1.50	55	5×9	1.60	55
3.3	5×9	1.50	54	5×9	1.50	59	5×9	1.50	62	5×9	1.60	62
3.9	5×9	1.50	54	5×9	1.50	78	5×9	1.50	81	5×9	1.60	81
4.7	5×9	1.50	89	5×9	1.50	98	5×9	1.50	101	5×9	1.60	101
5.6	5×9	1.50	91	5×9	1.50	100	5×9	1.50	106	5×11	1.40	106
6.8	5×9	1.50	94	5×9	1.50	103	5×9	1.50	111	5×11	1.40	111
8.2	5×9	1.50	98	5×9	1.50	109	5×9	1.50	121	5×11	1.40	121
10	5×9	1.50	101	5×9	1.50	111	5×11	1.40	163	6.3×9	0.80	240
12				5×9	1.50	121	5×11	1.40	163	6.3×11	0.63	267
12										8×9	0.63	290
15	5×9	1.50	121	5×9	1.50	150	6.3×9	0.80	240	6.3×11	0.63	267
15										8×9	0.63	290

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List of Standard Products

Voltage (V)	50			63			80			100		
	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
18				5×11	1.10	173	6.3×9	0.80	267	6.3×11	0.63	267
18										8×9	0.63	290
22	5×11	0.97	238	6.3×9	0.58	250	6.3×11	0.63	267	8×11.5	0.40	450
22							8×9	0.63	290	10×9	0.63	470
27				6.3×9	0.58	278	6.3×11	0.63	267	8×11.5	0.40	450
27							8×9	0.63	290	10×9	0.63	470
33	6.3×9	0.36	344	6.3×11	0.39	344	6.3×11	0.63	267	8×11.5	0.40	450
33				8×9	0.39	390	8×9	0.63	290	10×9	0.63	470
39	6.3×9	0.36	344	6.3×11	0.39	344	8×11.5	0.40	450	8×16	0.28	565
39				8×9	0.39	390	10×9	0.63	470	10×12.5	0.28	624
47	6.3×11	0.34	385	6.3×11	0.39	385	8×11.5	0.40	450	8×16	0.28	585
47	8×9	0.23	390	8×9	0.39	525	10×9	0.63	470	10×12.5	0.25	624
56	6.3×11	0.34	385	8×9	0.39	525	8×11.5	0.40	450	10×12.5	0.25	624
56	8×9	0.23	390				10×9	0.63	470			
68	8×9	0.23	390	8×11.5	0.24	724	8×16	0.28	565	8×20	0.21	735
68				10×9	0.26	750	10×12.5	0.25	624	10×14	0.21	750
82	8×11.5	0.15	724	8×11.5	0.24	724	8×20	0.21	735	10×16	0.19	780
82	10×9	0.18	750	10×9	0.26	756	10×12.5	0.25	624	12.5×14	0.18	900
100	8×11.5	0.15	724	8×16	0.18	950	8×20	0.21	735	10×20	0.13	1040
100	10×9	0.18	750	10×12.5	0.19	979	10×16	0.19	780	12.5×16	0.14	1040
120	8×14	0.11	880	8×16	0.18	950	10×16	0.19	780	10×23	0.12	1170
120	10×12.5	0.11	880	10×12.5	0.19	979	12.5×14	0.18	900	12.5×20	0.0930	1430
150	8×16	0.11	950	8×20	0.13	950	10×20	0.13	1040	12.5×20	0.0930	1430
150	10×12.5	0.11	975	10×16	0.19	1190	12.5×16	0.14	1040			
180	8×20	0.0810	1190	10×16	0.19	1190	10×20	0.13	1040	12.5×25	0.0660	1620
180	10×14	0.11	1230				12.5×16	0.14	1040			
220	8×20	0.0510	1190	10×20	0.0860	1300	12.5×20	0.13	1248	12.5×25	0.0660	1620
220	10×16	0.0510	1370	12.5×16	0.0902	1500						
270	10×20	0.0450	1580	10×20	0.0860	1300	12.5×20	0.0940	1430	12.5×30	0.0560	1950
270	12.5×14	0.0550	1450	12.5×16	0.0902	1500				16×20	0.0640	1750
330	10×20	0.0450	1580	10×23	0.0760	1700	12.5×20	0.0940	1430	12.5×35	0.0470	2140
330	12.5×16	0.0550	1650	12.5×20	0.0660	1870				16×25	0.0480	2210
390	10×20	0.0450	1580	12.5×20	0.0660	1870	12.5×30	0.0560	1950	12.5×40	0.0400	2340
390							16×20	0.0640	1750	16×25	0.0480	2210
470	12.5×20	0.0500	2050	12.5×25	0.0470	2100	12.5×35	0.0470	2140	16×31.5	0.0360	2400
470							16×25	0.0480	2210	18×25	0.0420	2270
560	12.5×20	0.0500	2050	12.5×30	0.0385	2410	12.5×40	0.0400	2340	16×35.5	0.0320	2600
560				16×20	0.0473	2500	16×25	0.0480	2210	18×31.5	0.0340	2860
680	12.5×25	0.0450	2410	12.5×30	0.0385	2410	16×31.5	0.0360	2400	16×40	0.0300	2860

LKF

List of Standard Products

Voltage (V)	50			63			80			100		
project Capacity (μF)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
680				16×25	0.0350	2730	18×25	0.0420	2270	18×35.5	0.0300	2860
820	12.5×25	0.0450	2410	12.5×35	0.0360	2620	16×35.5	0.0320	2600	18×40	0.0290	3510
820	16×20	0.0420	2730	16×25	0.0350	2730	18×25	0.0420	2270			
1000	12.5×30	0.0350	2860	16×31.5	0.0260	2990	16×40	0.0300	2860			
1000	16×25	0.0350	3010	18×25	0.0340	2800	18×31.5	0.0340	2470			
1200	16×31.5	0.0340	3280	16×31.5	0.0260	2990	18×35.5	0.0300	2860			
1200	18×25	0.0340	3300	18×25	0.0340	3300						
1500	16×31.5	0.0260	3280	16×35.5	0.0230	3280	18×40	0.0290	3510			
1500	18×25	0.0340	3300	18×31.5	0.0280	3300						
1800	16×35.5	0.0230	3300	16×40	0.0210	3570						
1800	18×31.5	0.0280	3300	18×35.5	0.0220	3570						
2200	18×35.5	0.0220	3570	18×40	0.0200	3670						
2700	18×40	0.0200	3670									

Voltage (V)	120			160			200			250		
project Capacity (μF)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
0.47	5×9	6.05	24									
1.0	5×9	6.05	37	5×11	28.00	68	5×11	28.00	50	6.3×9	28.00	59
1.2	5×9	6.05	37	5×11	28.00	68	5×11	28.00	55	6.3×9	28.00	59
1.5	5×9	6.05	43	5×11	28.00	95	5×11	28.00	60	6.3×9	28.00	59
1.8	5×9	6.05	43	5×11	28.00	95	5×11	28.00	65	6.3×9	28.00	68
2.2	5×9	1.60	47	5×11	28.00	95	5×11	28.00	75	6.3×9	28.00	104
2.7	5×9	1.60	55	5×11	28.00	95	5×11	28.00	80	6.3×9	28.00	113
3.3	5×9	1.60	62	5×11	28.00	95	6.3×9	28.00	104	6.3×9	28.00	113
3.9	5×9	1.60	81	5×11	28.00	95	6.3×9	28.00	104	6.3×11	14.90	135
3.9										8×9	14.90	140
4.7	5×9	1.60	101	6.3×9	23.00	104	6.3×11	14.90	125	6.3×11	14.90	135
4.7							8×9	14.90	140	8×9	14.90	140
5.6	5×11	1.40	106	6.3×9	23.00	110	6.3×11	14.90	125	8×9	14.90	140
5.6							8×9	14.90	140			
6.8	5×11	1.40	111	6.3×11	15.00	125	8×9	14.90	140	8×9	14.90	140
6.8				8×9	15.00	140						
8.2	6.3×9	1.40	127	8×9	15.00	140	8×9	14.90	140	8×11.5	12.50	150
8.2										10×9	12.50	170
10	6.3×9	1.10	220	8×9	15.00	140	8×11.5	12.50	160	8×11.5	10.00	150



■ List of Standard Products

Voltage (V)	120			160			200			250		
project	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
Capacity (μF)												
10							10×9	12.50	170	10×9	12.50	170
12	6.3×11	0.80	220	8×11.5	12.50	150	8×14	6.00	240	8×14	6.00	240
12				10×9	12.50	160						
15	6.3×11	0.80	267	8×11.5	12.50	150	8×16	3.85	270	8×16	3.85	270
15	8×9	0.80	267	10×9	12.50	160	10×12.5	4.9	280	10×12.5	4.90	280
18	8×11.5	0.63	290	8×14	7.90	160	8×20	3.58	350	8×20	3.58	280
18				10×9	12.50	160	10×14	3.58	320	10×14	3.58	320
22	8×11.5	0.63	290	8×14	7.90	160	8×20	3.58	350	8×20	3.58	350
22				10×12.5	7.90	250	10×14	3.58	320	10×14	3.58	320
27	8×14	0.49	420	8×16	7.90	270						
27	10×9	0.49	420	10×12.5	7.90	250						
33	8×14	0.49	450	8×20	5.90	350	10×20	1.78	635	10×20	1.78	635
33	10×9	0.49	450	10×14	5.90	360	12.5×14	1.78	745	12.5×14	1.78	745
39	8×16	0.38	565	10×16	5.55	580						
39	10×12.5	0.38	565	12.5×14	5.55	745						
47	8×20	0.28	585	10×20	5.55	635	12.5×20	1.46	960	12.5×20	1.46	960
47	10×14	0.28	624	12.5×14	5.55	745						
56	8×23	0.25	624	10×20	5.55	850	12.5×20	1.46	960	12.5×20	1.46	960
56	10×16	0.25	624	12.5×16	5.55	850						
68	10×16	0.21	735	12.5×16	5.55	850	12.5×25	1.35	1270	12.5×25	1.35	1270
68	12.5×14	0.21	750				16×20	1.35	1270	16×20	1.35	1270
82	10×20	0.19	780	12.5×20	4.36	1155	12.5×25	1.35	1270	12.5×30	1.25	1470
82	12.5×16	0.19	900				16×20	1.35	1270	16×20	1.35	1270
100	10×23	0.14	1040	12.5×20	4.36	1155	12.5×30	1.25	1360	16×25	1.32	1500
100	12.5×16	0.14	1040				16×20	1.35	1270	18×20	1.32	1410
120	12.5×20	0.12	1240	12.5×25	3.01	1390	12.5×30	1.25	1360	16×25	1.32	1500
120				16×20	3.01	1420	16×25	1.32	1850			
150	12.5×25	0.0930	1368	12.5×30	3.01	1520	16×25	1.32	1850	16×31.5	1.25	1990
150	16×20	0.0930	1368	16×25	2.31	1850				18×25	1.25	1920
180	12.5×30	0.0660	1530	16×25	2.31	1850	16×35.5	0.95	2250	16×35.5	0.95	2250
180							18×31.5	0.95	2250	18×31.5	0.95	2250
220	16×25	0.0660	1620	16×31.5	1.88	2400	18×31.5	0.91	2625	18×35.5	0.91	2625
220	18×20	0.0660	1620	18×25	1.88	2320						
270	16×25	0.0560	1750	16×35.5	1.80	2715						
270	18×20	0.0640	1750	18×31.5	0.98	2660						
330	16×31.5	0.0470	2140	18×31.5	0.98	2660						
330	18×25	0.0480	2140									
390	16×35.5	0.0400	2210	18×35.5	0.91	2715						
390	18×31.5	0.0400	2210									
470	18×31.5	0.0400	2270									
560	18×35.5	0.0320	2600									
560	18×40	0.0300	2860									

LKF

■ List of Standard Products

Voltage (V)	350			400			450			500		
project	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
Capacity (μF)												
1.0	6.3×9	55.00	77	6.3×9	55.00	77	6.3×9	55.00	77	6.3×12	52.00	45
1.2	6.3×9	36.00	95	6.3×9	36.00	81	6.3×9	52.00	81	6.3×12	52.00	45
1.5	6.3×9	36.00	95	6.3×9	36.00	81	6.3×9	52.00	90	6.3×12	52.00	45
1.8	6.3×9	36.00	104	6.3×9	36.00	95	6.3×11	52.00	95	8×11.5	45.00	80
1.8							8×9	42.00	100			
2.2	6.3×9	36.00	125	6.3×9	29.00	105	8×9	42.00	100	8×11.5	45.00	80
2.7	6.3×11	18.00	125	8×9	25.00	131	8×9	42.00	100	8×14	18.50	85
2.7	8×9	18.00	131									
3.3	8×9	18.00	131	8×9	25.00	131	8×11.5	25.00	130	8×14	18.50	85
3.3							10×9	23.50	135			
3.9	8×9	17.00	131	8×11.5	25.00	140	8×11.5	25.00	130	8×16	13.00	102
3.9				10×9	23.50	150	10×9	23.50	135			
4.7	8×11.5	17.00	140	8×11.5	23.5	140	8×14	18.50	135	8×20	13.00	130
4.7	10×9	17.00	150	10×9	23.50	150	10×9	18.50	135			
5.6	8×11.5	17.00	140	8×14	15.00	200	8×16	15.00	140	10×16	13.00	130
5.6	10×9	17.00	150	10×12.5	15.00	250	10×12.5	13.50	140			
6.8	8×14	15.00	200	8×16	11.25	220	8×20	8.05	220	10×16	13.00	130
6.8	10×9	17.00	150	10×12.5	15.00	250	10×14	12.00	200			
8.2	8×16	11.25	220	8×20	8.05	275	8×20	8.05	220	10×20	11.00	240
8.2	10×12.5	15.00	250	10×14	11.00	270	10×14	12.00	200			
10	8×20	8.05	275	8×20	8.05	275	10×16	8.05	260	10×20	11.00	240
10	10×14	11.00	270	10×14	11.00	270	12.5×14	7.70	350	12.5×14	10.00	260
12	10×16	8.00	360	10×20	7.50	340	10×20	7.70	370	12.5×16	9.00	265
15	10×16	6.50	360	10×20	6.50	340	10×20	7.70	370	12.5×20	8.00	270
15	12.5×14	6.50	585	12.5×16	6.50	360	12.5×16	7.70	370			
18	10×20	6.50	480	12.5×16	6.50	360	12.5×20	6.70	450	12.5×25	7.00	470
18	12.5×14	6.50	585									
22	10×20	6.50	585	12.5×20	6.50	570	12.5×20	6.70	450	12.5×25	7.00	470
22	12.5×16	6.50	585									

LKF

■ List of Standard Products

Voltage (V)	350			400			450			500		
project	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
Capacity (μF)												
33	12.5×20	6.50	960	12.5×25	3.25	850	12.5×30	3.05	755	12.5×35	5.50	650
33				16×20	3.25	900	16×20	3.05	740	16×25	3.50	650
47	12.5×25	2.25	1115	12.5×30	2.25	1100	12.5×35	1.60	1215	16×31.5	2.50	720
47	16×20	2.25	1060	16×25	2.25	1155	16×25	1.60	1215			
56	12.5×30	2.25	1115	16×25	2.25	1155	16×31.5	1.60	1215	16×35.5	2.30	840
56	16×25	2.25	1155	18×20	2.25	1400	18×25	1.60	1300	18×31.5	2.30	840
68	16×25	2.25	1115	16×31.5	1.60	1460	16×31.5	1.60	1215	18×31.5	2.30	840
68	18×20	2.25	1400	18×25	1.60	1530						
82	16×31.5	1.60	1550	16×35.5	1.60	1740	16×40	1.35	1675	18×35.5	1.80	1100
82	18×25	1.60	1530	18×31.5	1.60	1740	18×31.5	1.45	1700			
100	16×35.5	1.60	2230	18×31.5	1.60	1740	18×35.5	1.35	1800	18×40	1.50	1150
100	18×31.5	1.60	2230									
120	18×31.5	1.60	2305	18×35.5	1.50	2305	18×40	1.25	1930	18×45	1.40	1600
150	18×35.5	1.50	2720	18×40	1.50	3330	18×45	1.15	2350			

LKM

◆ Compact size, high frequency and high ripple current withstand, high frequency and low impedance, dedicated power supply product

◆ 7000~10000 hours at 105°C

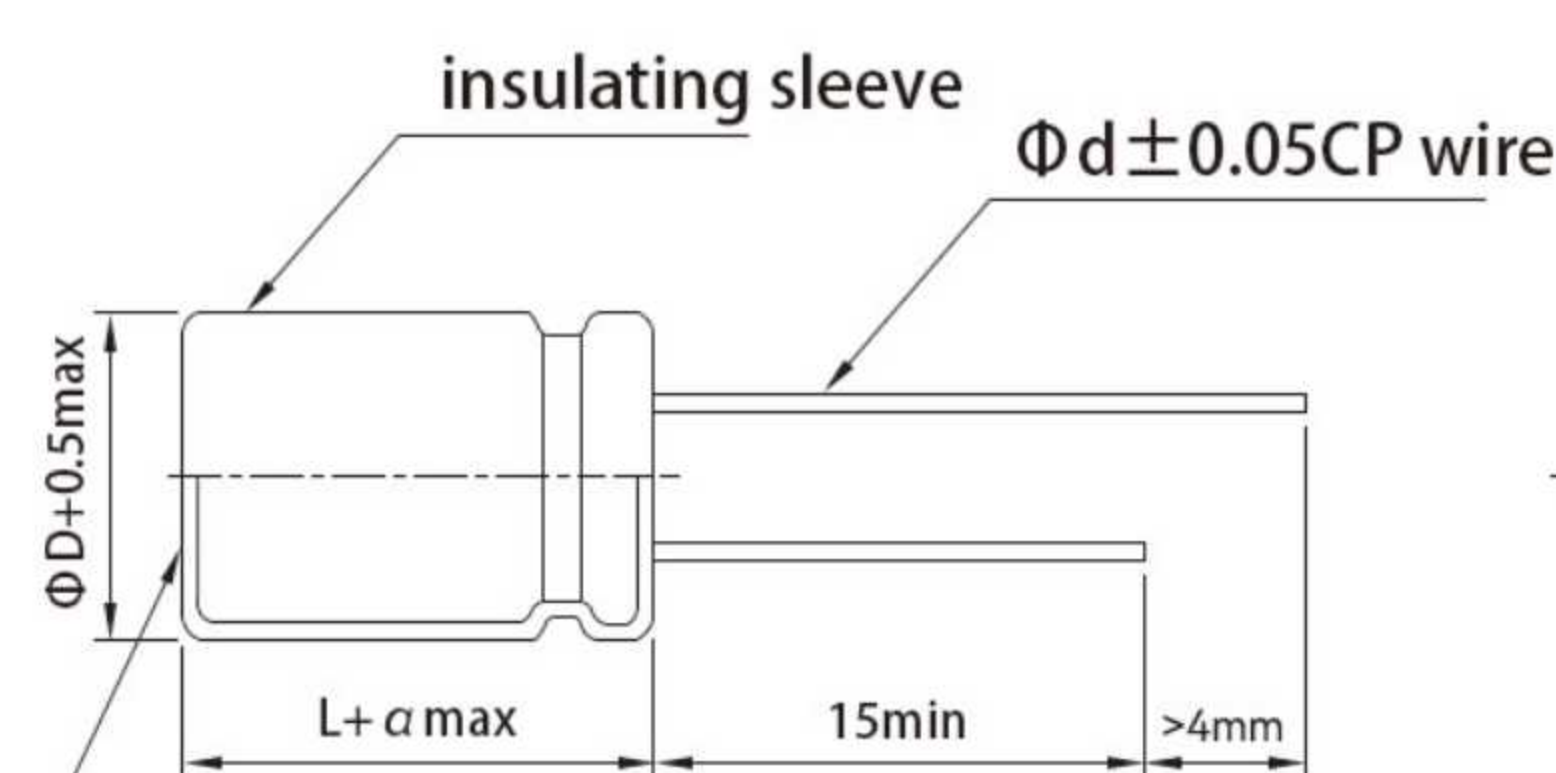
◆ Compliant with AEC-Q200 RoHS directive



Main technical parameters

project	characteristic						
Operating Temperature Range	≦120V - 55~+105°C ; 160~500V - 40~+105°C						
Nominal Voltage Range	10~500V						
Capacity Tolerance	±20% (25±2°C 120Hz)						
Leakage Current (μA)	10~120WV I≦0.01CV or 3μA (whichever is greater) C: Nominal capacitance (μF) V: Rated voltage (V) Readings taken after 2 minutes 160~500WV I≦0.02CV+10(μA) C: Nominal capacitance (μF) V: Rated voltage (V) Readings taken over 2 minutes						
Loss Tangent (25 ± 2° C 120Hz)	Rated voltage (V) 10 16 25 35 50 63 80 100						
	tg δ 0.19 0.16 0.14 0.12 0.10 0.09 0.09 0.09						
	Rated voltage (V) 120 160 200 250 350 400 450 500						
	tg δ 0.09 0.09 0.08 0.08 0.10 0.10 0.12 0.20						
For nominal capacities exceeding 1000 μF, the loss tangent increases by 0.02 for every additional 1000 μF.							
Temperature Characteristics (120Hz)	Rated voltage (V) 10 16 25 35 50 63 80 100						
	Impedance ratio Z(-40°C)/Z(20°C) 6 4 3 3 3 3 3 3						
	Rated voltage (V) 120 160 200 250 350 400 450 500						
	Impedance ratio Z(-40°C)/Z(20°C) 5 5 5 5 7 7 7 8						
Durability	In a 105°C oven, apply the rated voltage containing the rated ripple current for a specified time, then place at room temperature for 16 hours before testing. The test temperature is 25±2°C. The capacitor's performance should meet the following requirements.						
	Capacity change rate Within ±20% of the initial value						
	Loss tangent Below 200% of the specified value						
	Leakage current Below the specified value						
	Load life	<table border="1"> <tr> <td>Φ5</td> <td>7000h</td> </tr> <tr> <td>Φ6.3</td> <td>9000h</td> </tr> <tr> <td>≧Φ8</td> <td>10000h</td> </tr> </table>	Φ5	7000h	Φ6.3	9000h	≧Φ8
Φ5	7000h						
Φ6.3	9000h						
≧Φ8	10000h						
High Temperature Storage	After being stored at 105°C for 1000 hours and then placed at room temperature for 16 hours for testing at a test temperature of 25±2°C, the capacitor performance should meet the following requirements.						
	Capacity change rate Within ±20% of the initial value						
	Loss tangent Below 200% of the specified value						
	Leakage current Below 200% of the specified value						

Product dimension drawing (unit: mm)



L=9	α=1.0
L≦16	α=1.5
L > 16	α=2.0

D	5	6.3	8	10	12.5~13	12.5~13(h≧30)	14.5	16	18
d	0.5	0.5	0.6	0.6	0.7	0.6	0.8	0.8	0.8
F	2.0	2.5	3.5	5.0	5.0	5.0	7.5	7.5	7.5

safety valve

Note: Products ≧ Φ6.3 have a safety valve.

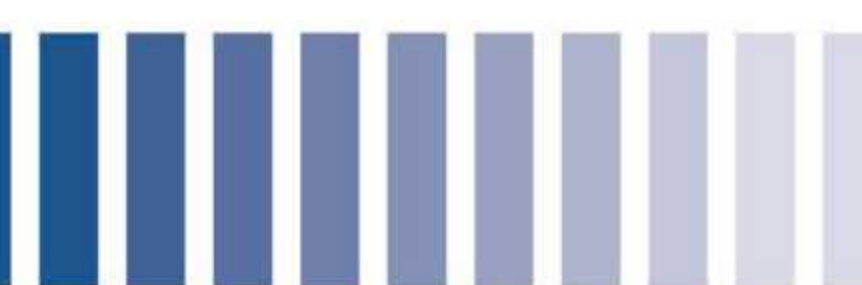
Ripple current compensation coefficient

① Frequency correction factor

Frequency (Hz)	50	120	1K	10K~50K	100K
Correction Factor	0.40	0.50	0.80	0.90	1.00

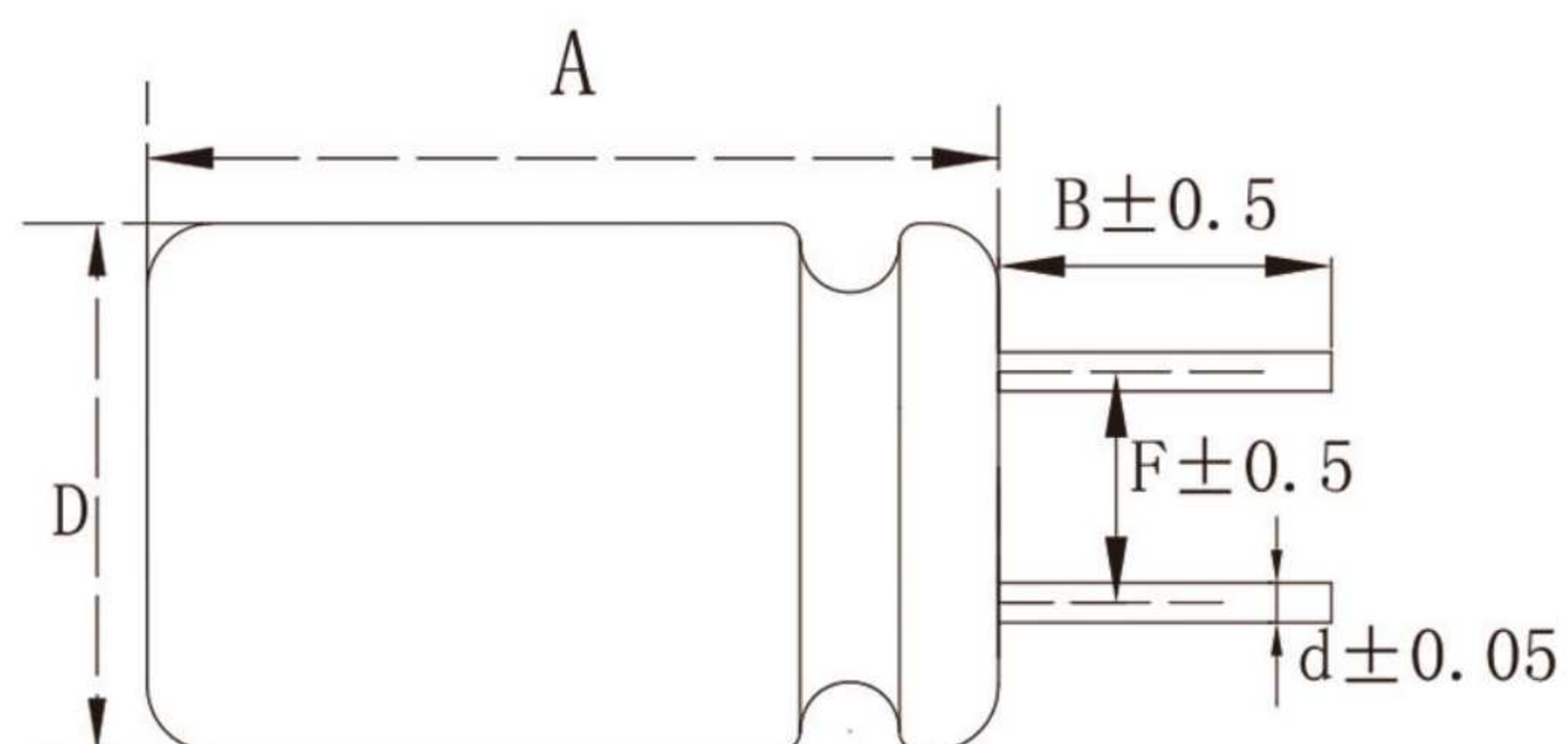
② Temperature correction factor

Ambient temperature (°C)	50°C	70°C	85°C	105°C
Correction factor	2.1	1.8	1.4	1.0



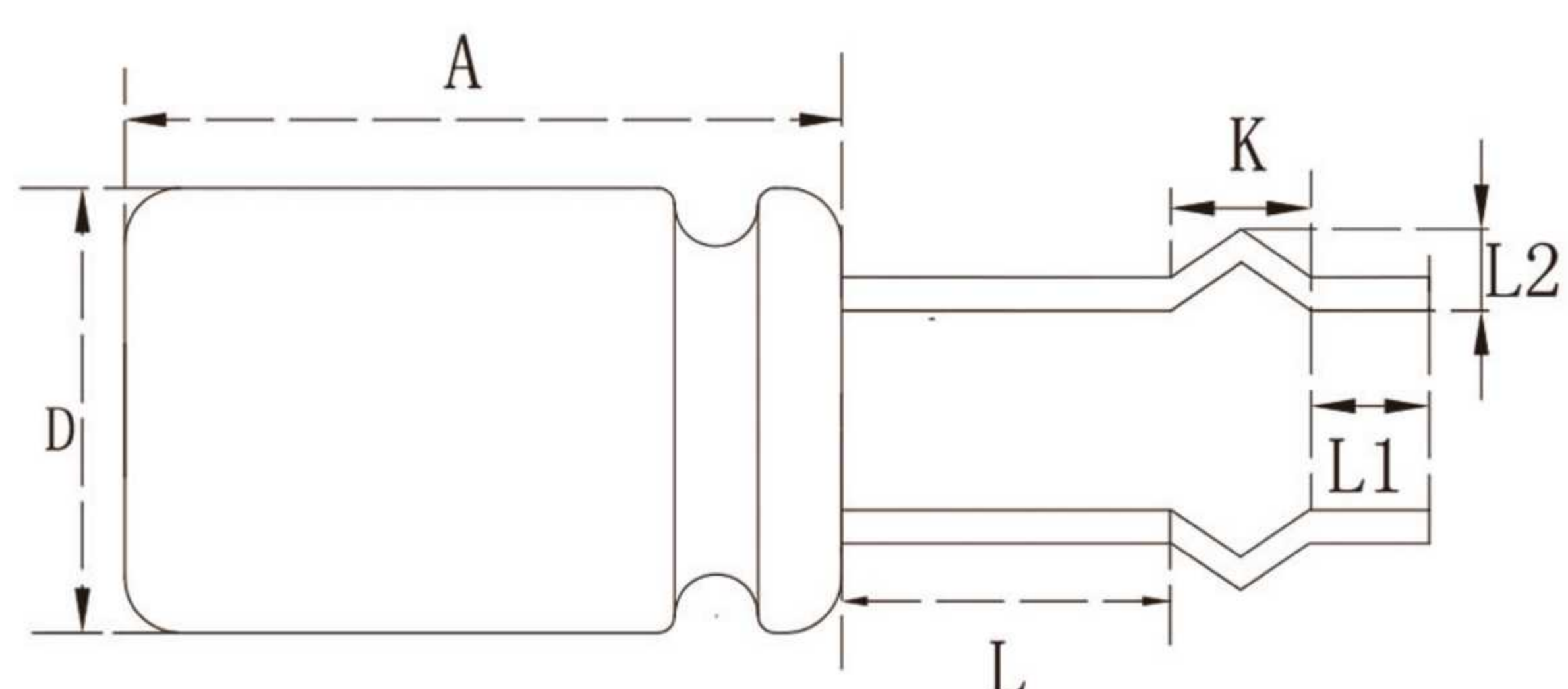
This specification applies to the lead-cutting and tape-forming aluminum electrolytic capacitor products manufactured by our company, including technical requirements, judgment criteria, and acceptance specifications.

Lead cutting and shaping diagram A



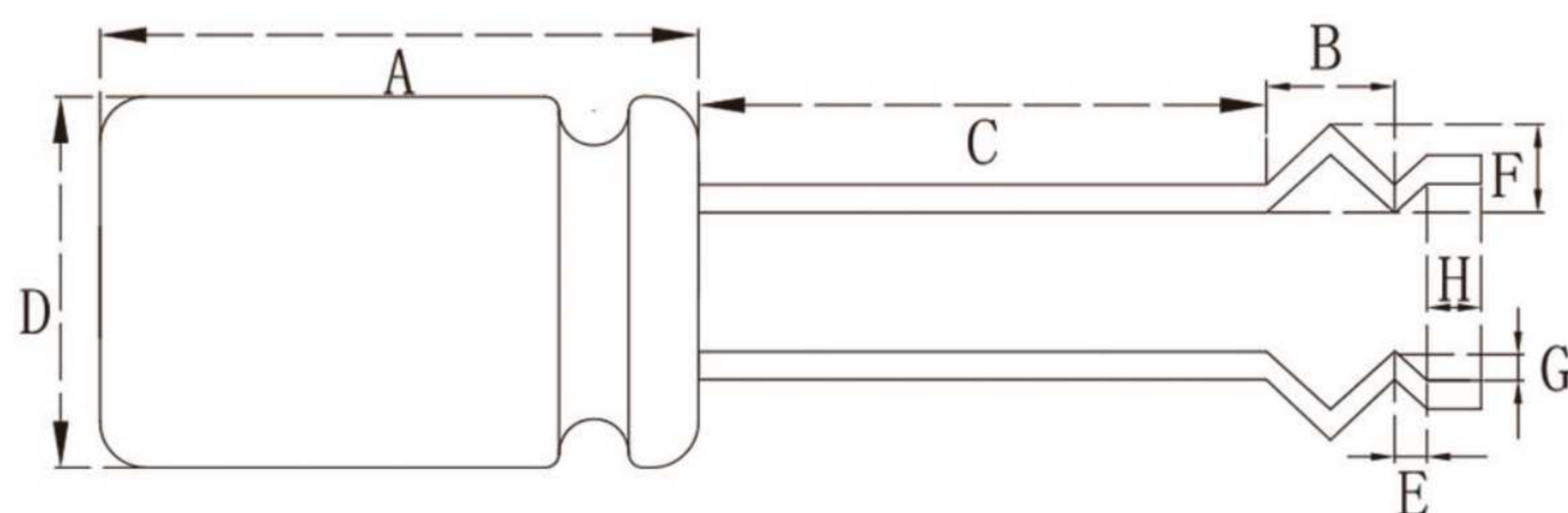
D	5	6.3	8	10	12.5	14.5	16	18	error
B	2.5~10								±0.5
d	0.5		0.6		0.7	0.8			±0.05
F	2.0	2.5	3.5	5.0		7.5			±0.5

Lead cutting and shaping diagram B



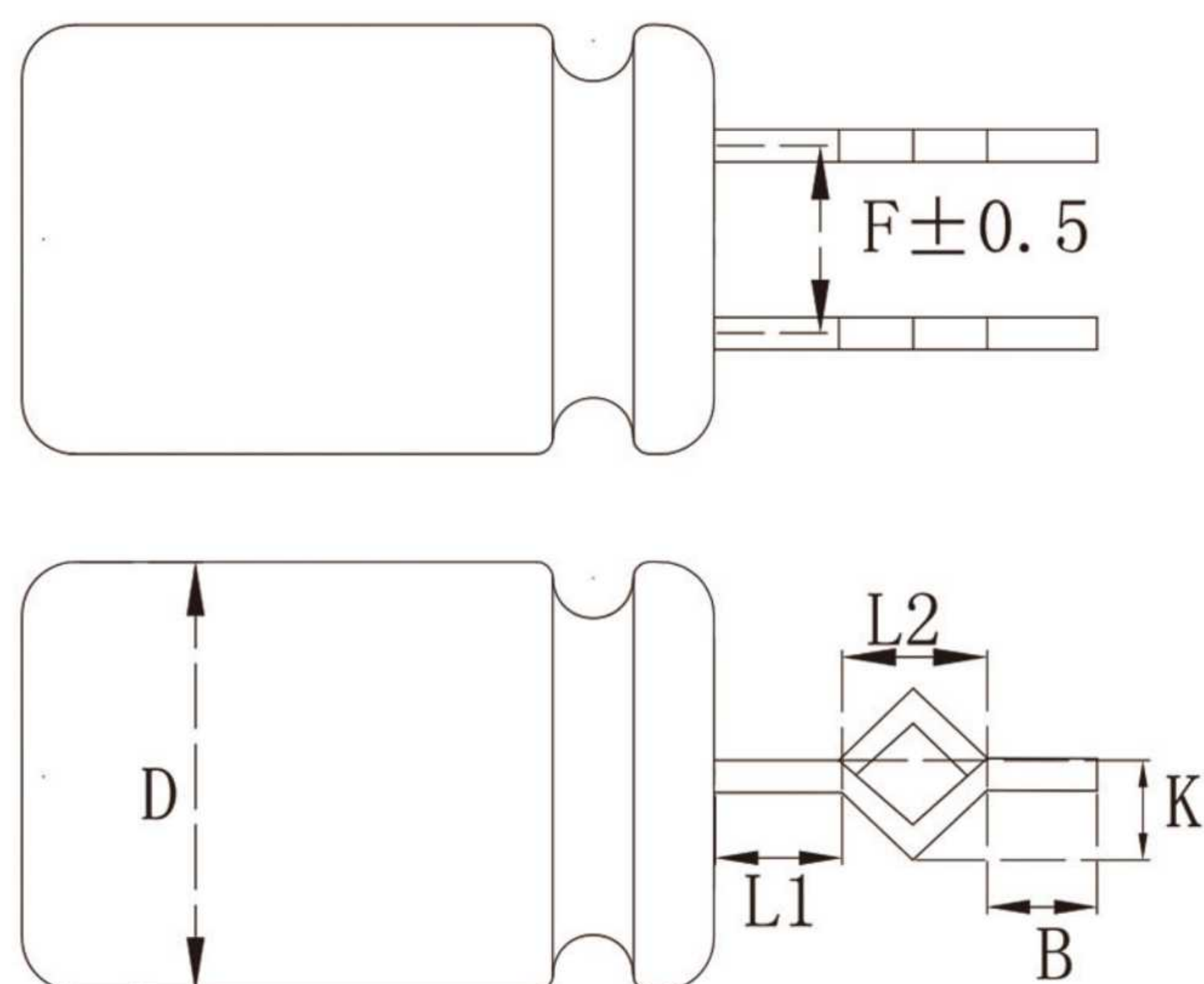
D	A	L±0.5	K±0.5	L2±0.3	L1±0.5	Notes
≤Φ14.5	≤25	2.5~22	2.5	1.5	2.5~5.0	Outer K molding

Lead cutting and shaping diagram c



D	A	C±0.5	B±0.5	E±0.3	F±0.3	G±0.3	H±0.5	Notes
≤Φ14.5	≤25	2.5~22	3.0	1.2	1.8	0.8	2.0~5.0	Internal and external K-forming

Lead cutting and shaping diagram D



ΦD	8	error
F	3.5	±0.5
L1	2.5~21.0	±0.5
L2	3.5	±0.5
K	1.2	±0.2
B	1.2	±0.5



List of Standard Products

Voltage (V)	10			16			25			35		
project Capacity (μF)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
10	5×9	1.10	56	5×9	1.10	71	5×9	1.10	91	5×9	1.40	101
15	5×9	1.10	76	5×9	1.10	91	5×9	1.10	111	5×9	1.10	121
22	5×9	0.40	91	5×9	0.40	111	5×9	1.10	121	5×9	1.10	160
33	5×9	0.40	106	5×9	0.40	121	5×9	0.40	151	5×9	0.40	215
39	5×9	0.26	136	5×9	0.40	151	5×9	0.40	181	5×9	0.40	345
47	5×9	0.26	143	5×9	0.26	161	5×9	0.26	211	5×9	0.37	345
56	5×9	0.26	151	5×9	0.26	171	5×9	0.26	310	5×9	0.37	414
68	5×9	0.26	161	5×9	0.26	181	5×9	0.24	345	5×11	0.34	443
68										6.3×9	0.34	486
82	5×9	0.26	171	5×9	0.26	211	5×9	0.34	414	5×11	0.28	486
82										6.3×9	0.28	540
100	5×9	0.26	181	5×9	0.24	345	5×9	0.34	443	6.3×9	0.28	550
120	5×9	0.26	211	5×9	0.24	345	5×11	0.34	486	6.3×9	0.28	550
120							6.3×9	0.28	486			
150	5×9	0.26	345	5×9	0.34	414	6.3×9	0.28	540	6.3×11	0.21	660
150										8×9	0.21	660
180	5×9	0.26	345	5×11	0.34	443	6.3×9	0.28	550	8×9	0.21	900
180				6.3×9	0.34	486						
220	5×9	0.34	414	6.3×9	0.28	540	6.3×11	0.21	660	8×9	0.15	945
220							8×9	0.21	660			
270	5×11	0.34	443	6.3×9	0.28	540	8×9	0.15	900	8×11.5	0.1200	1250
270	6.3×9	0.34	486							10×9	0.1200	1250
330	6.3×9	0.15	540	6.3×11	0.21	550	8×9	0.1500	945	8×14	0.0900	1330
330				8×9	0.21	550				10×12.5	0.0900	1330
390	6.3×9	0.15	540	8×9	0.15	660	8×11.5	0.0980	1250	8×16	0.076	1420
390							10×9	0.0980	1250	10×12.5	0.076	1760
470	6.3×11	0.15	545	8×9	0.15	900	8×11.5	0.0980	1330	10×14	0.0590	1850
470	8×9	0.15	550				10×9	0.0980	1330			
560	6.3×11	0.12	880	8×9	0.15	900	8×14	0.0760	1420	10×14	0.0590	1960
560	8×9	0.12	900				10×12.5	0.0760	1760			
680	8×9	0.12	900	8×11.5	0.0980	1250	8×16	0.0590	1500	10×16	0.0520	2120
680				10×9	0.0980	1330	10×12.5	0.0590	1760	12.5×14	0.0520	2120
820	8×9	0.12	1180	8×14	0.0760	1420	10×14	0.0460	1850	12.5×14	0.0520	2360
820				10×12.5	0.0760	1760						
1000	8×11.5	0.0980	1250	8×16	0.0590	1500	10×16	0.0420	1960	12.5×16	0.0420	2480
1000	10×9	0.0980	1330	10×12.5	0.0590	1850	12.5×14	0.0420	2120			
1200	8×14	0.0760	1420	10×14	0.0460	1850	10×20	0.0320	2120	12.5×20	0.0380	2900
1200	10×12.5	0.0760	1760				12.5×14	0.0320	2120			
1500	8×16	0.0590	1500	10×16	0.0420	1960	10×20	0.0280	2480	12.5×20	0.0380	2900



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List of Standard Products

Voltage (V)	10			16			25			35		
project	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
Capacity (μF)												
1500	10×12.5	0.0590	1760	12.5×14	0.0420	2120	12.5×16	0.0280	2480	16×16	0.0380	3250
1800	10×14	0.0460	1850	10×20	0.0380	1960	12.5×16	0.0280	2480	12.5×25	0.0350	3450
1800				12.5×14	0.0420	2120				14.5×16	0.0210	3180
1800										16×20	0.0350	3630
2200	10×16	0.0420	1960	10×20	0.0380	2480	12.5×20	0.0270	2900	12.5×30	0.0320	3630
2200	12.5×14	0.0420	2120	12.5×16	0.0380	2480	14.5×16	0.0270	2620	14.5×20	0.0160	3215
2200							16×16	0.0270	3250	16×20	0.0320	3630
2700	10×20	0.0320	2250	12.5×16	0.0380	2480	12.5×25	0.0265	3450	14.5×23	0.0160	3320
2700	12.5×14	0.0320	2250				16×20	0.0265	3630	16×25	0.0230	3890
2700										18×20	0.0230	4010
3300	10×23	0.0280	2480				12.5×30	0.0260	3630			
3300	12.5×16	0.0280	2480	12.5×20	0.0280	2900	14.5×20	0.0250	3180	14.5×25	0.0150	3400
3300				14.5×16	0.0268	2620	14.5×23	0.0240	3270	16×31.5	0.0100	4080
3300							16×20	0.0260	3630	18×25	0.0100	4080
3900	12.5×16	0.0280	2900	12.5×25	0.0230	3250	14.5×25	0.023	3350	14.5×27	0.0140	3520
3900				16×16	0.0230	3450	16×25	0.0171	3890			
3900							18×20	0.0171	3650	18×25	0.0100	4080
4700	12.5×20	0.0230	3250	12.5×25	0.0210	3450	14.5×27	0.0220	3460			
4700	14.5×16	0.0280	2450	14.5×20	0.0255	3110	16×25	0.0121	3890			
4700	16×16	0.0230	3450	16×20	0.0210	3630	18×20	0.0110	4010			
5600				14.5×23	0.0250	3200						
6800	14.5×20	0.0180	2780	14.5×25	0.0246	3270						
8200	14.5×23	0.0170	2920									
8200	14.5×25	0.0160	3160									
10000	14.5×27	0.0150	3280	14.5×27	0.0238	3450						

Voltage (V)	50			63			80			100		
project	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
Capacity (μF)												
0.47	5×9	5.50	21	5×9	5.00	23	5×9	6.05	24	5×9	6.05	24
1.0	5×9	5.50	31	5×9	5.00	35	5×9	6.05	37	5×9	6.05	37
1.2				5×9	5.00	35	5×9	6.05	37	5×9	6.05	37
1.5				5×9	5.00	41	5×9	6.05	43	5×9	6.05	43
1.8	5×9	5.50	32	5×9	5.00	41	5×9	6.05	43	5×9	6.05	43
2.2	5×9	1.50	39	5×9	1.50	45	5×9	1.50	47	5×9	1.60	47
2.7				5×9	1.50	52	5×9	1.50	55	5×9	1.60	55
3.3	5×9	1.50	54	5×9	1.50	59	5×9	1.50	62	5×9	1.60	62
3.9	5×9	1.50	54	5×9	1.50	78	5×9	1.50	81	5×9	1.60	81
4.7	5×9	1.50	89	5×9	1.50	98	5×9	1.50	101	5×9	1.60	101
5.6	5×9	1.50	91	5×9	1.50	100	5×9	1.50	106	5×9	1.40	106
6.8	5×9	1.50	94	5×9	1.50	103	5×9	1.50	111	5×9	1.40	111
8.2	5×9	1.50	98	5×9	1.50	109	5×9	1.50	121	5×9	1.40	121
10	5×9	1.50	101	5×9	1.50	111	5×9	1.40	150	5×9	0.80	220
12				5×9	1.50	121	5×9	1.40	163	5×11	0.80	267
12										6.3×9	0.80	267
15	5×9	1.50	121	5×9	1.50	150	5×9	1.10	200	5×11	0.80	267
15										6.3×9	0.80	267
18				5×9	1.1	173	5×9	0.86	240	6.3×9	0.63	267



List of Standard Products

Voltage (V)	50			63			80			100		
project	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
Capacity (μF)												
22	5×9	1.10	238	5×9	0.86	228	5×11	0.73	250	6.3×9	0.63	290
22							6.3×9	0.63	267			
27	5×9	0.86	286	5×9	0.58	250	6.3×9	0.63	267	6.3×11	0.63	420
27										8×9	0.63	450
33	5×9	0.58	314	5×11	0.39	300	6.3×9	0.63	267	8×9	0.40	450
33				6.3×9	0.39	344						
39	5×11	0.36	344	6.3×9	0.39	344	6.3×11	0.63	400	8×9	0.28	565
39	6.3×9	0.36	344				8×9	0.63	420			
47	5×11	0.36	344	6.3×9	0.39	385	6.3×11	0.63	420	8×11.5	0.28	585
47	6.3×9	0.34	385				8×9	0.63	470	10×9	0.28	624
56	6.3×9	0.34	385	6.3×11	0.24	492	8×9	0.63	470	8×14	0.25	624
56				8×9	0.24	525				10×9	0.25	624
68	6.3×9	0.34	390	6.3×11	0.24	724	8×9	0.49	520	8×16	0.21	735
68				8×9	0.24	724				10×12.5	0.21	750
82	6.3×11	0.24	487	8×9	0.24	724	8×11.5	0.38	624	8×16	0.19	780
82	8×9	0.24	724				10×9	0.25	668	10×14	0.19	900
100	6.3×11	0.18	687	8×9	0.24	902	8×14	0.21	735	10×14	0.14	1040
100	8×9	0.18	724				10×9	0.19	744			
120	8×9	0.18	800	8×11.5	0.19	902	8×16	0.19	744	10×16	0.12	1170
120				10×9	0.19	979	10×12.5	0.19	892	12.5×14	0.12	1240
150	8×11.5	0.14	950	8×14	0.19	950	10×14	0.15	980	12.5×14	0.0930	1368
150	10×9	0.14	975	10×12.5	0.19	1130						
180	8×14	0.11	1190	8×16	0.19	1190	10×14	0.15	980	12.5×16	0.0660	1530
180	10×12.5	0.11	1230	10×14	0.19	1190						
220	8×14	0.0950	1190	10×14	0.14	1200	10×16	0.13	1040	12.5×20	0.0660	1620
220	10×12.5	0.0950	1230				12.5×14	0.13	1040			
270	8×16	0.0740	1420	10×16	0.0860	1300	10×20	0.0940	1240	12.5×20	0.0560	1750
270	10×14	0.0740	1420	12.5×14	0.0902	1500	12.5×16	0.0940	1240	16×16	0.0640	1750
330	10×14	0.0740	1450	10×16	0.0860	1580	12.5×16	0.0940	1368	12.5×25	0.0470	2140
330				12.5×14	0.0902	1650				16×20	0.0480	2210
390	10×16	0.0580	1580	10×20	0.0660	1870	12.5×20	0.0640	1640	12.5×30	0.0400	2210
390	12.5×14	0.0580	1650	12.5×16	0.0660	1870	16×16	0.0640	1750	16×20	0.0480	2210
470	12.5×14	0.0580	2050	12.5×16	0.0500	2100	12.5×20	0.0640	1750			
470							14.5×16	0.076	1460	16×25	0.0480	2400
470							16×16	0.0480	1750	18×20	0.0420	2270
560	12.5×16	0.0500	2050	12.5×20	0.0473	2410	12.5×25	0.0480	2110	16×25	0.0320	2600
560				16×16	0.0473	2500	16×20	0.0480	2110			
680	12.5×16	0.0500	2250	12.5×25	0.0473	2410	12.5×30	0.0420	2270			
680				14.5×16	0.0560	1620	14.5×20	0.0630	1720			
680							14.5×23	0.0570	1860	16×31.5	0.0300	2860
680				16×16	0.0385	2730	16×20	0.0420	2270	18×25	0.0300	2860
820	12.5×20	0.0390	2410	12.5×30	0.0360	2620				14.5×25	0.0520	1990
820	14.5×16	0.0580	2480				16×25	0.0320	2600	18×31.5	0.0290	3510

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List of Standard Products

Voltage (V)	50			63			80		
project	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
Capacity (μF)									
820	16×16	0.0390	2730	16×20	0.0350	2730	18×20	0.0420	2270
1000	12.5×25	0.0390	2860	14.5×20	0.0480	2180	14.5×27	0.0480	2080
1000				14.5×23	0.0440	2300	16×31.5	0.0300	2860
1000	16×16	0.0390	3010	16×20	0.0350	2860	18×25	0.0340	2470
1200	12.5×25	0.0340	3280	14.5×25	0.0420	2420			
1200	14.5×20	0.0480	2580	16×25	0.0340	2990			
1200	16×20	0.0340	3300	18×20	0.0340	3300	18×25	0.0300	2860
1500	12.5×30	0.0260	3280						
1500	14.5×23	0.0390	2620						
1500	14.5×25	0.0300	2680	14.5×27	0.0390	2540			
1500	16×25	0.0340	3300	16×25	0.0280	3280	18×31.5	0.0290	3510
1800	16×25	0.0280	3300	16×31.5	0.0280	3570			
1800	18×20	0.0280	3300	18×25	0.0280	3570			
2200	14.5×27	0.0280	2780						
2200	18×25	0.0280	3570	18×31.5	0.0260	3670			
2700	18×31.5	0.0260	3670						

Voltage (V)	120			160			200			250		
project	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
Capacity (μF)												
0.47	5×9	6.05	24									
1.0	5×9	6.05	37	5×9	28.00	68	5×9	28.00	50	5×9	28.00	56
1.2	5×9	6.05	37	5×9	28.00	68	5×9	28.00	55	5×9	28.00	56
1.5	5×9	6.05	43	5×9	28.00	95	5×9	28.00	60	5×9	28.00	56
1.8	5×9	6.05	43	5×9	28.00	95	5×9	28.00	65	5×9	28.00	65
2.2	5×9	1.60	47	5×9	28.00	95	5×9	28.00	75	5×9	28.00	98
2.7	5×9	1.60	55	5×9	28.00	95	5×9	28.00	80	5×9	28.00	98
3.3	5×9	1.60	62	5×9	28.00	95	5×9	28.00	95	5×9	28.00	98
3.9	5×9	1.60	81	5×9	28.00	95	5×9	28.00	95	5×11	23.00	114
3.9										6.3×9	15.60	135
4.7	5×9	1.60	101	5×9	23.00	95	5×11	23.00	104	6.3×9	15.60	135
4.7							6.3×9	15.60	125			
5.6	5×9	1.60	106	5×11	23.00	104	6.3×9	15.60	125	6.3×9	15.60	140
5.6				6.3×9	23.00	110						
6.8	5×11	1.40	111	6.3×9	18.00	125	6.3×9	15.60	140	6.3×11	14.90	140
6.8										8×9	14.90	140
8.2	5×11	1.40	127	6.3×9	18.00	125	6.3×11	14.90	140	6.3×12	12.50	150
8.2							8×9	14.90	140	8×9	12.50	170
10	6.3×9	1.10	220	6.3×11	15.00	132	6.3×12	12.50	160	8×9	10.00	210
10				8×9	15.00	140	8×9	12.50	170			
12	6.3×9	1.10	220	6.3×12	12.50	140	8×11.5	7.00	210	8×11.5	7.00	270



■ List of Standard Products

Voltage (V)	120			160			200			250		
project	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
Capacity (μF)												
12				8×9	12.50	150						
15	6.3×11	0.80	267	6.3×12	12.50	140	8×11.5	4.90	256	8×11.5	4.90	270
15	8×9	0.80	267	8×9	12.50	150	10×9	4.90	280	10×9	4.90	280
18	8×9	0.80	267	8×11.5	9.70	160	8×14	3.58	280	8×14	3.58	280
18				10×9	12.50	160	10×12.5	3.58	320	10×12.5	3.58	320
22	8×9	0.80	290	8×11.5	7.90	160	8×16	3.58	320	8×16	3.58	320
22				10×9	7.90	250	10×12.5	3.58	320	10×12.5	3.58	320
27	8×11.5	0.63	420	8×14	7.90	250						
27				10×12.5	7.90	250						
33	8×11.5	0.49	450	8×16	5.90	350	8×23	1.78	603	8×23	1.78	603
33	10×9	0.49	450	10×12.5	5.90	360	10×16	1.78	708	10×16	1.78	708
39	8×14	0.38	565	8×20	5.55	580						
39	10×12.5	0.38	565	10×14	5.55	635						
47	8×16	0.28	585	8×23	5.55	635	10×20	1.46	745	10×20	1.46	850
47	10×12.5	0.28	624	10×16	5.55	680	12.5×16	1.46	960	12.5×16	1.46	960
56	8×20	0.25	624	10×16	5.55	850	10×23	1.46	960	10×23	1.46	960
56	10×14	0.25	624	12.5×14	5.55	850	12.5×16	1.46	960	12.5×16	1.46	960
68	8×23	0.21	735	10×20	5.55	850	12.5×20	1.35	1270	12.5×20	1.35	1270
68	10×16	0.21	750	12.5×14	5.55	850	16×16	1.35	1270	16×16	1.35	1270
82	10×16	0.19	780	10×20	4.36	1020	12.5×20	1.35	1270	12.5×20	1.35	1270
82	12.5×14	0.19	900	12.5×16	4.36	1155	16×16	1.35	1270	16×16	1.35	1270
100	10×20	0.14	1040	12.5×16	4.36	1155	12.5×20	1.35	1360	12.5×25	1.32	1360
100	12.5×16	0.14	1040				16×16	1.35	1270	16×20	1.32	1410
120	10×23	0.12	1170	12.5×20	3.41	1390	12.5×25	1.25	1360	16×20	1.25	1500
120	12.5×16	0.12	1240	16×16	3.01	1420	16×20	1.32	1660			
150	12.5×20	0.0930	1368	12.5×25	3.01	1520	16×20	1.20	1850	16×25	1.25	1800
150				16×20	2.31	1850				18×20	1.25	1920
180	12.5×25	0.0660	1530	12.5×30	2.31	1850	16×25	0.95	2020	16×31.5	0.95	2250
180				16×20	2.31	1850	18×20	0.95	2020	18×25	0.95	2250
220	16×20	0.0660	1620	16×25	1.88	2400	18×25	0.91	2380	18×31.5	0.91	2625
220				18×20	1.88	2320						
270	12.5×30	0.0560	1750	16×31.5	1.80	2715						
270	16×20	0.0640	1750	18×25	0.98	2660						
330	16×25	0.0470	2140	18×25	0.98	2660						
330	18×20	0.0480	2140									
390	16×31.5	0.0400	2210	18×31.5	0.91	2715						
390	18×25	0.0400	2210									
470	16×31.5	0.0400	2270									
470	18×25	0.0400	2270									
560	16×35.5	0.0320	2600									
560	18×31.5	0.0320	2600									
680	18×35.5	0.0300	2860									



■ List of Standard Products

Voltage (V)	350			400			450			500		
project	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
Capacity (μF)												
1.0	5×9	55.00	73	5×9	55.00	73	5×9	55.00	73	6.3×9	52.00	45
1.2	5×9	36.00	90	5×9	36.00	76	5×9	52.00	78	6.3×9	52.00	45
1.5	5×9	36.00	90	5×9	36.00	76	5×11	52.00	81	6.3×9	52.00	45
1.5							6.3×9	52.00	90			
1.8	5×9	36.00	95	5×9	36.00	87	6.3×9	52.00	95	8×9	45.00	80
2.2	5×11	36.00	104	6.3×9	29.00	105	6.3×9	42.00	100	8×9	45.00	80
2.2	6.3×9	36.00	125									
2.7	6.3×9	26.00	125	6.3×9	26.00	125	6.3×9	42.00	100	8×11.5	18.50	85
3.3	6.3×9	23.00	131	6.3×9	25.00	131	6.3×12	25.00	120	8×11.5	18.50	85
3.3							8×9	25.00	120			
3.9	6.3×11	17.00	131	6.3×11	25.00	140	8×9	25.00	135	8×14	13.00	85
3.9	8×9	17.00	131	8×9	23.50	140						
4.7	6.3×11	17.00	140	6.3×12	23.50	140	8×11.5	18.50	135	8×16	13.00	130
4.7	8×9	17.00	140	8×9	23.50	140	10×9	18.50	135			
5.6	8×9	17.00	140	8×11.5	15.00	200	8×14	15.00	140	10×14	13.00	130
5.6				10×9	15.00	220	10×9	13.50	140			
6.8	8×11.5	15.00	200	8×11.5	15.00	210	8×16	8.05	220	10×14	13.00	130
6.8	10×9	17.00	210	10×9	15.00	250	10×12.5	12.00	200			
8.2	8×14	11.25	220	8×14	11.00	250	8×16	8.05	220	10×14	11.00	240
8.2	10×9	15.00	250	10×9	11.00	270	10×12.5	12.00	200			
10	8×14	8.05	250	8×16	8.05	270	8×20	8.05	260	8×23	11.00	240
10	10×12.5	11.00	270	10×12.5	11.00	270	10×14	8.05	350	10×16	10.00	260
12	8×20	9.00	360	10×14	9.00	340	10×16	7.90	370	12.5×14	9.50	265
15	8×20	6.50	360	10×14	8.50	340	10×16	7.70	370	12.5×16	8.00	270
15	10×14	6.50	460				12.5×14	7.70	370			
18	10×16	6.50	480	10×16	6.50	360	12.5×16	6.70	410	12.5×16	7.00	470
18	12.5×14	6.50	585	12.5×14	6.50	360						
22	10×20	6.50	585	10×20	6.50	570	12.5×16	6.70	450	12.5×20	7.00	470
22	12.5×14	6.50	585	12.5×16	6.50	570						

LKM

■ List of Standard Products

Voltage (V)	350			400			450			500		
project Capacity (μF)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
33	12.5×16	6.50	960	12.5×20	3.25	850	12.5×20	3.05	710	12.5×25	5.50	700
33				16×16	3.25	900	16×16	3.05	740	16×20	3.50	700
47	12.5×20	2.25	1115	12.5×25	2.25	1100	12.5×30	1.60	1215	16×25	2.50	720
47	16×16	2.25	1060	16×20	2.25	1155	16×20	1.60	1215			
56	12.5×25	2.25	1115	12.5×25	2.25	1155	16×25	1.60	1215	16×31.5	2.30	840
56	16×20	2.25	1155	16×20	2.25	1400	18×20	1.60	1215	18×25	2.30	840
68	12.5×30	2.25	1115	16×25	1.60	1460	16×31.5	1.60	1215	18×25	2.30	840
68	16×20	2.25	1400	18×20	1.60	1530	18×25	1.60	1300			
82	16×25	1.60	1550	16×31.5	1.60	1740	16×35.5	1.35	1675	18×31.5	1.80	1100
82	18×20	1.60	1530	18×25	1.60	1740	18×25	1.45	1700			
100	16×25	1.60	2230	18×25	1.60	1740	18×31.5	1.35	1800	18×35.5	1.50	1150
120	18×25	1.60	2305	18×31.5	1.50	2305	18×35.5	1.25	1930	18×40	1.40	1200
150	18×31.5	1.50	2720	18×35.5	1.50	3330	18×40	1.15	2350			

LKJ

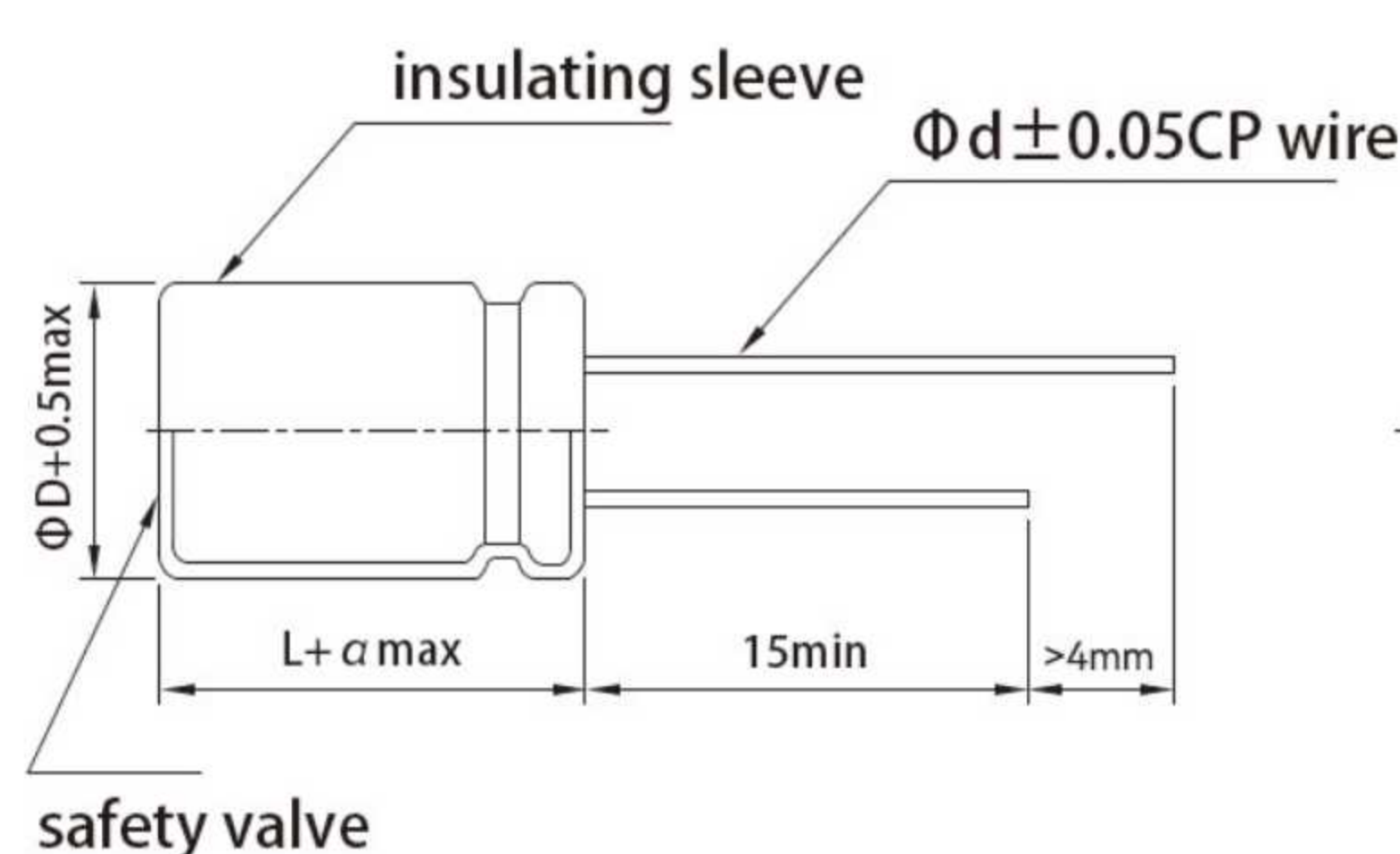
- ◆ Long lifespan, low impedance, miniaturized design, specifically for smart meters
- ◆ 5000~10000 hours at 105°C
- ◆ Compliant with AEC-Q200 RoHS directive



Main technical parameters

project	characteristic								
Operating Temperature Range	-55~+105°C								
Nominal Voltage Range	6.3~100V								
Capacity Tolerance	±20% (25±2°C 120Hz)								
Leakage Current (μA)	CV ≤ 1000 I ≤ 0.01CV or 3 μA (whichever is greater) C: Nominal capacitance (μF) V: Rated voltage (V) Readings taken after 2 minutes								
	CV > 1000 I ≤ 0.006CV + 4 μA C: Nominal capacitance (μF) V: Rated voltage (V) Readings taken over 2 minutes								
Loss Tangent (25 ± 2° C 120Hz)	Rated voltage (V)	6.3	10	16	25	35	50	63	100
	tg δ	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08
For nominal capacities exceeding 1000 μF, the loss tangent increases by 0.02 for every additional 1000 μF.									
Temperature Characteristics (120Hz)	Rated voltage (V)	6.3	10	16	25	35	50	63	100
	Impedance ratio Z(-40°C)/Z(20°C)	7	5	5	4	4	4	4	4
Durability	After being stored at 105°C for 1000 hours and then placed at room temperature for 16 hours for testing at a test temperature of 25±2°C, the capacitor performance should meet the following requirements.								
	Capacity change rate	Within ±20% of the initial value							
	Loss tangent	Below 200% of the specified value							
	Leakage current	Below the specified value							
	Load life	Below the specified value	6.3~10V			16~100V			
ΦD=5		5000h			5000h				
ΦD=6.3、8		6000h			7000h				
ΦD=≥10		8000h			10000h				
High Temperature Storage	After being stored at 105°C for 1000 hours and then placed at room temperature for 16 hours for testing at a test temperature of 25±2°C, the capacitor performance should meet the following requirements.								
	Capacity change rate	Within ±20% of the initial value							
	Loss tangent	Below 200% of the specified value							
	Leakage current	Below 200% of the specified value							

Product dimension drawing (unit: mm)



L ≤ 16	α=1.5
L > 16	α=2.0

D	5	6.3	8	10	12.5~13	12.5~13(h≥30)	14.5	16	18
d	0.5	0.5	0.6	0.6	0.7	0.6	0.8	0.8	0.8
F	2.0	2.5	3.5	5.0	5.0	5.0	7.5	7.5	7.5

Note: Products ≥ Φ6.3 have a safety valve.

Ripple current compensation coefficient

① Frequency correction coefficient 6.3~50WV

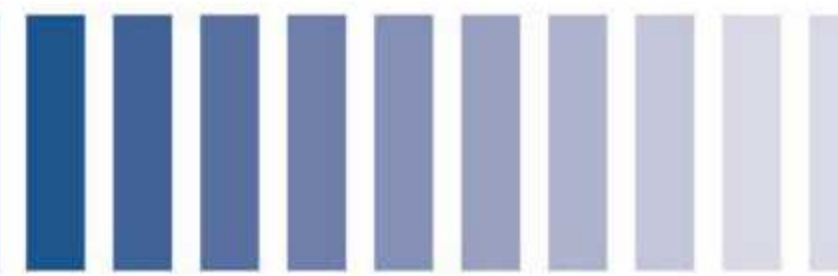
Correction Factor	Frequency (Hz)	120	1K	10K	100K ≤
	0.47~10μF	0.42	0.60	0.80	1.00
	22~33μF	0.55	0.75	0.90	1.00
	47~330μF	0.70	0.85	0.95	1.00
	470~1000μF	0.75	0.90	0.98	1.00
2200~15000μF	0.80	0.95	1.00	1.00	

63~100WV

Frequency (Hz)	120	1K	10K	100K ≤
Correction Factor	0.42	0.60	0.80	1.00

② Temperature correction factor

Frequency (Hz)	50°C	70°C	85°C	105°C
Correction Factor	2.1	1.8	1.4	1.0



LKJ

List of Standard Products

Voltage (V)	6.3			10			16			25		
project Capacity (μF)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
33										5×11	0.40	250
47							5×11	0.40	250	5×11	0.40	250
100	5×11	0.90	150	5×11	0.90	150	5×11	0.40	250	5×11	0.40	250
220	5×11	0.40	250	5×11	0.40	250	6.3×11	0.22	400	6.3×11	0.22	400
330	6.3×11	0.22	340	6.3×11	0.22	400	6.3×11	0.22	400	8×11.5	0.13	640
470	6.3×11	0.22	400	6.3×11	0.22	400	8×11.5	0.13	640	10×12.5	0.080	865
1000	8×11.5	0.13	640	10×12.5	0.080	865	10×16	0.062	1210	10×20	0.046	1400
2200	10×16	0.038	1300	10×20	0.046	1400	12.5×20	0.041	1900	12.5×25	0.032	2230
3300	10×20	0.046	1400	12.5×20	0.041	1900	12.5×25	0.032	2230	16×25	0.021	2930
4700	12.5×25	0.032	2230	12.5×25	0.032	2230	16×25	0.021	2930	16×31.5	0.019	3450
6800	12.5×25	0.032	2230	16×25	0.021	2930	16×31.5	0.019	3450			
10000	16×25	0.021	2930	16×31.5	0.019	3450						
15000	16×35.5	0.015	3610									

Voltage (V)	35			50			63			100		
project Capacity (μF)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)	Dimensions: ΦD×L (mm)	Impedance (Ωmax/100kHz 25±2°C)	Ripple current (mA r.m.s / 105°C 120Hz)
0.47				5×11	5.50	17				5×11	6.00	15
1.0				5×11	4.00	30				5×11	4.50	20
2.2				5×11	2.50	43				5×11	3.00	30
3.3				5×11	2.20	53				5×11	2.70	40
4.7				5×11	1.90	88				5×11	2.50	65
10				5×11	1.50	100	5×11	0.88	173	5×11	1.40	163
22				5×11	0.90	150	5×11	0.88	173	6.3×11	0.57	267
33	5×11	0.40	250	5×11	0.70	250	6.3×11	0.35	278	8×11.5	0.36	462
47	5×11	0.40	250	6.3×11	0.40	250	6.3×11	0.35	278	8×16	0.25	585
100	6.3×11	0.22	400	8×11.5	0.25	400	10×12.5	0.15	725	10×20	0.12	1040
220	8×11.5	0.13	640	10×16	0.12	770	10×20	0.078	1200	12.5×25	0.060	1620
330	10×12.5	0.080	865	10×20	0.078	1050	12.5×20	0.060	1570	16×25	0.044	2210
470	10×16	0.062	1210	12.5×20	0.062	1300	12.5×25	0.043	1990			
1000	12.5×20	0.041	1900	16×25	0.034	1850	16×25	0.032	2730			
2200	16×25	0.038	2930	16×35.5	0.019	3150						
3300	16×31.5	0.019	3450									

CW3

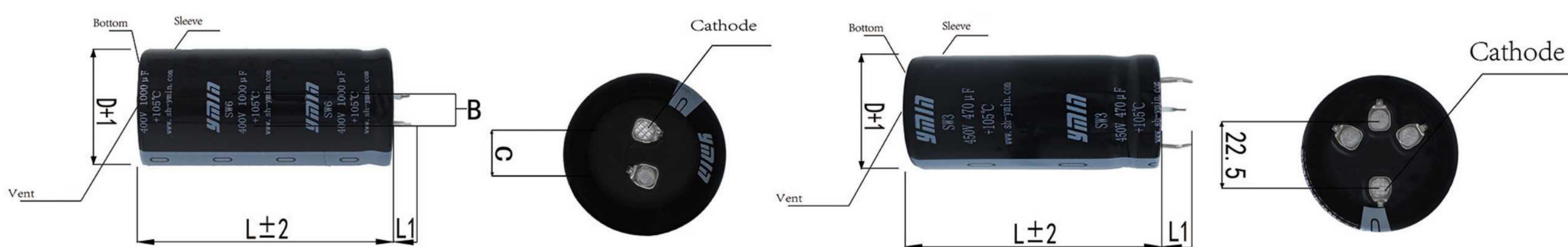
- ◆ Compact size, ultra-low temperature operation
- ◆ 105°C, 3000 hours operating time
- ◆ Suitable for home inverter and servo applications
- ◆ RoHS compliant



■ Main technical parameters

project	characteristic						
Operating Temperature Range	-40 ~ +105°C						
Rated Voltage Range	350 ~ 600V						
Rated Capacitance Range	47 ~ 1000μF (20°C 120Hz)						
Rated Capacitance Tolerance	±20%						
Leakage Current (mA)	$\leq 3\sqrt{CV}$ (C: Nominal capacity; V: Rated voltage) or 0.94mA, whichever is smaller, test for 5 minutes at 20°C.						
Maximum Loss (20° C)	0.20 (20°C 120Hz)						
Temperature Characteristics (120Hz)	$C(-25^{\circ}\text{C})/C(+20^{\circ}\text{C}) \geq 0.8$; $C(-40^{\circ}\text{C})/C(+20^{\circ}\text{C}) \geq 0.65$						
Impedance Characteristics (120Hz)	$Z(-25^{\circ}\text{C})/Z(+20^{\circ}\text{C}) \leq 5$; $Z(-40^{\circ}\text{C})/Z(+20^{\circ}\text{C}) \leq 8$						
Insulation Resistance	The insulation resistance between all terminals and the insulating sleeves and mounting straps on the container sleeve was measured with a DC 500V insulation resistance meter and was $\geq 100\text{M}\Omega$.						
Insulation Voltage	An AC 2000V voltage was applied to all terminals and the insulating sleeves and mounting straps on the container sleeve for 1 minute, and no abnormalities were observed.						
Durability	Under conditions of 105°C and above the rated voltage with superimposed rated ripple current, after continuous loading of the rated voltage for 3000 hours and then returning to 20°C, the following requirements should be met. <table border="1" style="width: 100%; margin-top: 5px;"> <tr> <td>Capacity change rate (ΔC)</td> <td>$\leq \pm 20\%$ of the initial value</td> </tr> <tr> <td>Loss value ($\text{tg } \delta$)</td> <td>$\leq 200\%$ of the initial specification value</td> </tr> <tr> <td>Leakage current (LC)</td> <td>\leq Initial specification value</td> </tr> </table>	Capacity change rate (ΔC)	$\leq \pm 20\%$ of the initial value	Loss value ($\text{tg } \delta$)	$\leq 200\%$ of the initial specification value	Leakage current (LC)	\leq Initial specification value
Capacity change rate (ΔC)	$\leq \pm 20\%$ of the initial value						
Loss value ($\text{tg } \delta$)	$\leq 200\%$ of the initial specification value						
Leakage current (LC)	\leq Initial specification value						
High Temperature No-Load Characteristics	After being stored at 105°C for 1000 hours and then restored to 20°C, the following requirements should be met during the test. <table border="1" style="width: 100%; margin-top: 5px;"> <tr> <td>Capacity change rate (ΔC)</td> <td>$\leq \pm 15\%$ of the initial value</td> </tr> <tr> <td>Loss value ($\text{tg } \delta$)</td> <td>$\leq 150\%$ of the initial specification value</td> </tr> <tr> <td>Leakage current (LC)</td> <td>\leq Initial specification value</td> </tr> </table> <p>Voltage pretreatment is required before the test: Apply the rated voltage across the capacitor through a resistor of approximately 1000Ω and maintain it for 1 hour. After pretreatment, discharge the capacitor through a resistor of approximately 1Ω/V. After complete discharge, place the capacitor at room temperature for 24 hours before starting the test.</p>	Capacity change rate (ΔC)	$\leq \pm 15\%$ of the initial value	Loss value ($\text{tg } \delta$)	$\leq 150\%$ of the initial specification value	Leakage current (LC)	\leq Initial specification value
Capacity change rate (ΔC)	$\leq \pm 15\%$ of the initial value						
Loss value ($\text{tg } \delta$)	$\leq 150\%$ of the initial specification value						
Leakage current (LC)	\leq Initial specification value						

■ Product dimension drawing (unit: mm)



	Φ22	Φ25	Φ30	Φ35	Φ40
ΦD	Φ22	Φ25	Φ30	Φ35	Φ40
B	11.6	11.8	11.8	11.8	12.25
C	8.4	10	10	10	10
L1	6.5	6.5	6.5	6.5	6.5

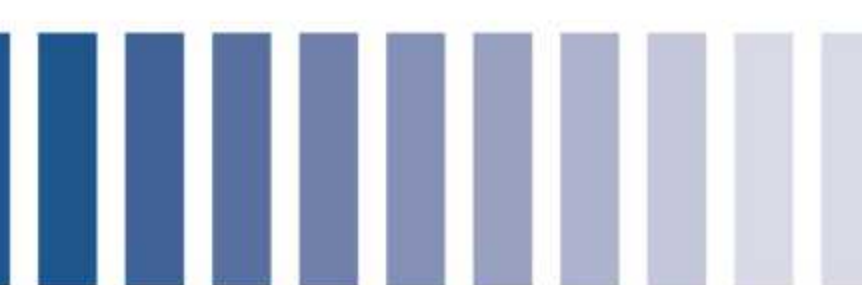
■ Ripple current correction factor

Frequency compensation coefficient

Frequency	50Hz	120Hz	500Hz	1kHz	$\geq 10\text{kHz}$
Correction Factor	0.80	1.00	1.20	1.25	1.40

Temperature compensation coefficient

Temperature (° C)	40°C	60°C	85°C	105°C
Coefficient	2.7	2.2	1.7	1.0



CW3

■ List of Standard Products

Operating voltage (V)	350(400)			400(450)			
	project	Dimensions: $\Phi D \times L$ (mm)	Ripple current (105°C 120Hz) Arms	ESR (Max, m Ω / 120Hz 20°C)	Dimensions: $\Phi D \times L$ (mm)	Ripple current (105°C 120Hz) Arms	ESR (Max, m Ω / 120Hz 20°C)
Capacity (μF)							
47				22×20	0.34	3386	
56		22×20	0.40	2605	22×20	0.37	2842
68		25×20	0.48	2145	22×25	0.44	2341
68				25×20	0.43	2341	
82		22×25	0.52	1779	22×25	0.48	1941
82		25×20	0.52	1779	25×20	0.47	1941
100		22×25	0.57	1459	22×30	0.57	1592
100		30×20	0.63	1459	25×25	0.57	1592
100				30×20	0.58	1592	
120		22×30	0.67	1216	22×30	0.62	1326
120		25×25	0.67	1216	25×25	0.61	1326
120		30×20	0.68	1216	30×20	0.63	1326
120				35×20	0.69	1326	
150		22×35	0.79	973	22×35	0.73	1061
150		25×30	0.73	973	25×30	0.73	1061
150		30×25	0.82	973	30×25	0.75	1061
150		35×20	0.82	973	35×20	0.76	1061
180		22×40	0.90	811	22×40	0.83	884
180		25×30	0.85	811	25×30	0.79	884
180		30×25	0.88	811	30×25	0.82	884
180				35×25	0.89	884	
220		22×45	1.03	663	22×45	0.96	723
220		25×35	0.99	663	25×40	0.97	723
220		30×25	0.96	663	30×30	0.96	723
220		35×25	1.05	663	35×25	0.98	723
270		22×50	1.18	540	25×45	1.12	589
270		25×40	1.14	540	30×30	1.05	589
270		30×30	1.12	540	35×25	1.07	589
270		35×25	1.15	540			
330		25×45	1.31	442	25×50	1.28	482
330		30×35	1.31	442	30×35	1.22	482
330		35×30	1.34	442	35×30	1.25	482
390		25×50	1.48	374	25×55	1.44	408
390		30×35	1.41	374	30×40	1.39	408
390		35×30	1.44	374	35×35	1.43	408
470		25×60	1.75	310	30×45	1.59	339
470		30×45	1.70	310	35×40	1.65	339
470		35×35	1.67	310			
560		30×50	1.92	261	30×50	1.79	284



CW3

■ List of Standard Products

Operating voltage (V)	350(400)			400(450)		
project	Dimensions: $\Phi D \times L$ (mm)	Ripple current (105°C 120Hz) Arms	ESR (Max, m Ω / 120Hz 20°C)	Dimensions: $\Phi D \times L$ (mm)	Ripple current (105°C 120Hz) Arms	ESR (Max, m Ω / 120Hz 20°C)
Capacity (μF)						
560	35×40	1.91	261	35×45	1.87	284
680	30×60	2.26	215	35×50	2.13	234
680	35×45	2.18	215			
820	35×50	2.44	178	35×55	2.38	194
1000	35×55	2.68	146	35×70	2.80	159

Operating voltage (V)	450(500)			500(550)		
project	Dimensions: $\Phi D \times L$ (mm)	Ripple current (105°C 120Hz) Arms	ESR (Max, m Ω / 120Hz 20°C)	Dimensions: $\Phi D \times L$ (mm)	Ripple current (105°C 120Hz) Arms	ESR (Max, m Ω / 120Hz 20°C)
Capacity (μF)						
47				22×25	0.30	3951
56	22×25	0.38	3079	22×30	0.35	3316
68	22×30	0.45	2536	22×30	0.39	2731
68	25×25	0.41	2536	25×25	0.38	2731
82	22×25	0.45	2103	22×35	0.45	2264
82	25×20	0.44	2103	25×30	0.45	2264
100	22×35	0.57	1724	22×45	0.55	1857
100	25×30	0.53	1724	25×35	0.53	1857
100	30×25	0.59	1724	30×25	0.51	1857
120	22×40	0.66	1437	22×50	0.63	1547
120	25×25	0.58	1437	25×40	0.61	1547
120	30×25	0.64	1437	30×30	0.60	1547
120	35×20	0.65	1437	35×25	0.61	1547
150	22×45	0.76	1149	22×50	0.70	1238
150	25×30	0.69	1149	25×40	0.68	1238
150	30×25	0.71	1149	30×30	0.67	1238
150	35×25	0.72	1149	35×25	0.68	1238
180				22×60	0.82	1032
180	22×40	0.78	958	25×50	0.81	1032
180	25×35	0.79	958	30×35	0.77	1032
180	30×30	0.82	958	35×30	0.79	1032
220				22×65	0.93	844
220	25×40	0.92	784	25×55	0.93	844
220	30×30	0.91	784	30×40	0.89	844
220	35×25	0.93	784	35×25	0.81	844
270	25×45	1.07	639	25×60	1.06	688



CW3

■ List of Standard Products

Operating voltage (V)	450(500)			500(550)			
	project	Dimensions: $\Phi D \times L$ (mm)	Ripple current (105°C 120Hz) Arms	ESR (Max, m Ω / 120Hz 20°C)	Dimensions: $\Phi D \times L$ (mm)	Ripple current (105°C 120Hz) Arms	ESR (Max, m Ω / 120Hz 20°C)
270		30×35	1.06	639	30×45	1.03	688
270		35×30	1.09	639	35×35	1.01	688
330					25×70	1.25	563
330		30×40	1.23	522	30×50	1.18	563
330		35×35	1.27	522	35×40	1.17	563
390		30×45	1.40	442	30×60	1.39	476
390		35×35	1.38	442	35×45	1.33	476
470		30×50	1.60	367	30×65	1.57	395
470		35×40	1.59	367	35×50	1.52	395
560		30×60	1.88	308	30×65	1.81	332
560		35×45	1.81	308	35×50	1.79	332
680		35×55	2.15	254	35×65	2.15	273
820		35×60	2.40	210	35×70	2.55	226
1000		35×70	2.72	172	35×85	2.91	186

CW6

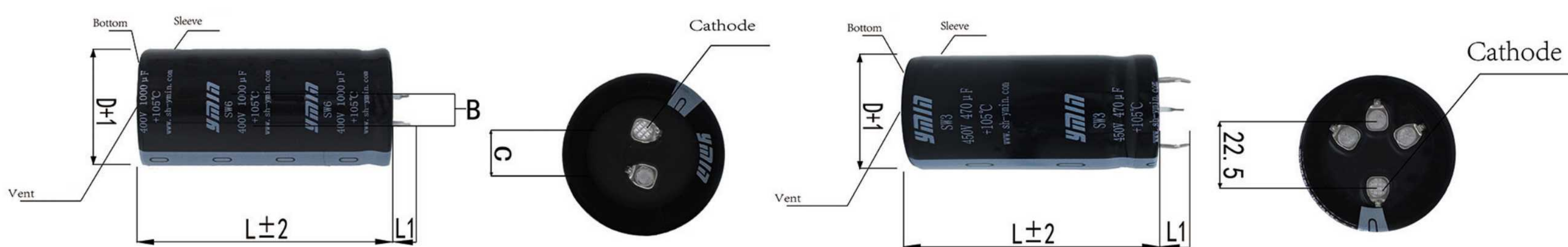
- ◆ Compact size, high reliability, ultra-low temperature capability
- ◆ 105°C, 6000 hours
- ◆ Suitable for photovoltaic and industrial applications
- ◆ RoHS compliant



Main technical parameters

project	characteristic						
Operating Temperature Range	-40 ~ +105°C						
Rated Voltage Range	350 ~ 600V						
Rated Capacitance Range	82 ~ 1000μF (20°C 120Hz)						
Rated Capacitance Tolerance	±20%						
Leakage Current (mA)	$\leq 3\sqrt{CV}$ (C: Nominal capacity; V: Rated voltage) or 0.94mA, whichever is smaller, test for 5 minutes at 20°C.						
Maximum Loss (20° C)	0.20 (20°C 120Hz)						
Temperature Characteristics (120Hz)	$C(-25^{\circ}\text{C})/C(+20^{\circ}\text{C}) \geq 0.8$; $C(-40^{\circ}\text{C})/C(+20^{\circ}\text{C}) \geq 0.65$						
Impedance Characteristics (120Hz)	$Z(-25^{\circ}\text{C})/Z(+20^{\circ}\text{C}) \leq 5$; $Z(-40^{\circ}\text{C})/Z(+20^{\circ}\text{C}) \leq 8$						
Insulation Resistance	The insulation resistance between all terminals and the insulating sleeves and mounting straps on the container sleeve was measured with a DC 500V insulation resistance meter and was $\geq 100\text{M}\Omega$.						
Insulation Voltage	An AC 2000V voltage was applied to all terminals and the insulating sleeves and mounting straps on the container sleeve for 1 minute, and no abnormalities were observed.						
Durability	Under conditions of 105°C and above the rated voltage with superimposed rated ripple current, after continuous loading of the rated voltage for 6000 hours and then returning to 20°C, the following requirements should be met. <table border="1" style="width: 100%;"> <tr> <td>Capacity change rate (ΔC)</td> <td>$\leq \pm 20\%$ of the initial value</td> </tr> <tr> <td>Loss value ($\text{tg } \delta$)</td> <td>$\leq 200\%$ of the initial specification value</td> </tr> <tr> <td>Leakage current (LC)</td> <td>\leq Initial specification value</td> </tr> </table>	Capacity change rate (ΔC)	$\leq \pm 20\%$ of the initial value	Loss value ($\text{tg } \delta$)	$\leq 200\%$ of the initial specification value	Leakage current (LC)	\leq Initial specification value
Capacity change rate (ΔC)	$\leq \pm 20\%$ of the initial value						
Loss value ($\text{tg } \delta$)	$\leq 200\%$ of the initial specification value						
Leakage current (LC)	\leq Initial specification value						
High Temperature No-Load Characteristics	After being stored at 105°C for 1000 hours and then restored to 20°C, the following requirements should be met during the test. <table border="1" style="width: 100%;"> <tr> <td>Capacity change rate (ΔC)</td> <td>$\leq \pm 15\%$ of the initial value</td> </tr> <tr> <td>Loss value ($\text{tg } \delta$)</td> <td>$\leq 150\%$ of the initial specification value</td> </tr> <tr> <td>Leakage current (LC)</td> <td>\leq Initial specification value</td> </tr> </table> <p>Voltage pretreatment is required before the test: Apply the rated voltage across the capacitor through a resistor of approximately 1000Ω and maintain it for 1 hour. After pretreatment, discharge the capacitor through a resistor of approximately 1Ω/V. After complete discharge, place the capacitor at room temperature for 24 hours before starting the test.</p>	Capacity change rate (ΔC)	$\leq \pm 15\%$ of the initial value	Loss value ($\text{tg } \delta$)	$\leq 150\%$ of the initial specification value	Leakage current (LC)	\leq Initial specification value
Capacity change rate (ΔC)	$\leq \pm 15\%$ of the initial value						
Loss value ($\text{tg } \delta$)	$\leq 150\%$ of the initial specification value						
Leakage current (LC)	\leq Initial specification value						

Product dimension drawing (unit: mm)



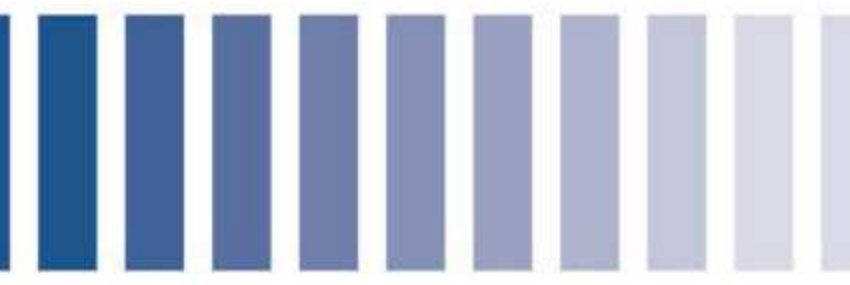
	Φ22	Φ25	Φ30	Φ35	Φ40
ΦD	Φ22	Φ25	Φ30	Φ35	Φ40
B	11.6	11.8	11.8	11.8	12.25
C	8.4	10	10	10	10
L1	6.5	6.5	6.5	6.5	6.5

Ripple current correction factor Frequency compensation coefficient

Frequency	50Hz	120Hz	500Hz	1kHz	$\geq 10\text{kHz}$
Correction Factor	0.80	1.00	1.20	1.25	1.40

Temperature compensation coefficient

Temperature (° C)	40°C	60°C	85°C	105°C
Coefficient	2.7	2.2	1.7	1.0

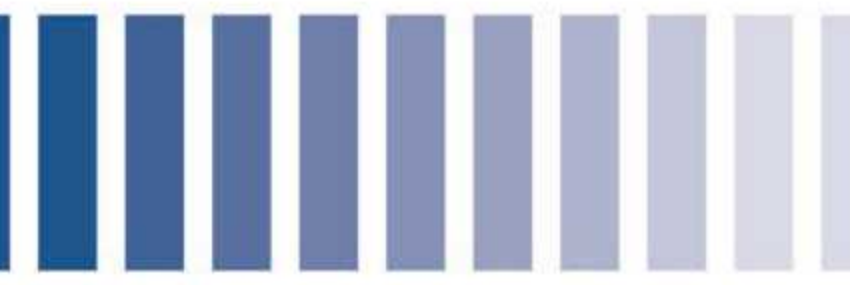


CW6

■ List of Standard Products

Operating voltage (V)	350(400)			400(450)			
	project	Dimensions: $\Phi D \times L$ (mm)	Ripple current (105°C 120Hz) Arms	ESR (Max, m Ω / 120Hz 20°C)	Dimensions: $\Phi D \times L$ (mm)	Ripple current (105°C 120Hz) Arms	ESR (Max, m Ω / 120Hz 20°C)
100				22×25	0.54	1459	
120		22×25	0.64	1105	22×30	0.63	1216
150		22×30	0.77	884	22×35	0.76	973
150				25×30	0.76	973	
180		25×30	0.90	737	22×40	0.87	811
180				25×30	0.83	811	
180				30×25	0.85	811	
220		22×40	1.03	603	22×45	1.00	663
220		25×30	0.98	603	25×35	0.96	663
220		30×25	1.01	603	35×25	1.03	663
270		22×45	1.19	491	22×50	1.15	540
270		25×35	1.14	491	25×45	1.18	540
270		30×30	1.18	491	30×30	1.10	540
270		35×25	1.21	491			
330		22×50	1.35	402	25×50	1.35	442
330		25×40	1.31	402	30×35	1.28	442
330		30×35	1.37	402	35×30	1.31	442
390		25×45	1.49	340	30×40	1.46	374
390		30×40	1.56	340	35×35	1.51	374
390		35×30	1.52	340			
470		25×55	1.77	282	30×45	1.67	310
470		30×45	1.78	282	35×40	1.73	310
470		35×35	1.75	282			
560		30×50	2.02	237	35×45	1.96	261
560		35×40	2.00	237			
680		35×45	2.29	195	35×50	2.23	215
820		35×50	2.55	162	35×55	2.49	178
1000		35×55	2.79	133	35×65	2.83	146

Operating voltage (V)	450(500)			500(550)			
	project	Dimensions: $\Phi D \times L$ (mm)	Ripple current (105°C 120Hz) Arms	ESR (Max, m Ω / 120Hz 20°C)	Dimensions: $\Phi D \times L$ (mm)	Ripple current (105°C 120Hz) Arms	ESR (Max, m Ω / 120Hz 20°C)
82		22×25	0.45	1941	22×35	0.45	2103
100		22×30	0.54	1592	22×40	0.53	1724
100		25×25	0.54	1592	25×35	0.54	1724
120		22×35	0.63	1326	25×40	0.62	1437
150		22×40	0.74	1061	25×50	0.76	1149
150		25×30	0.70	1061	30×35	0.73	1149



CW6

■ List of Standard Products

Operating voltage (V)	450(500)			500(550)			
	project	Dimensions: $\Phi D \times L$ (mm)	Ripple current (105°C 120Hz) Arms	ESR (Max, m Ω / 120Hz 20°C)	Dimensions: $\Phi D \times L$ (mm)	Ripple current (105°C 120Hz) Arms	ESR (Max, m Ω / 120Hz 20°C)
150		30×25	0.73	1061	35×30	0.75	1149
180		22×45	0.85	884	30×35	0.79	958
180		25×35	0.81	884	35×30	0.81	958
180		30×30	0.85	884			
180		35×25	0.87	884			
220		25×40	0.94	723	30×40	0.92	784
220		30×35	0.99	723	35×35	0.95	784
220		35×30	1.02	723			
270		25×45	1.09	589	30×50	1.11	639
270		30×40	1.15	589	35×40	1.10	639
270		35×35	1.19	589			
330		30×45	1.33	482	30×55	1.27	522
390		30×50	1.50	408	30×65	1.48	442
390		35×40	1.49	408	35×50	1.44	442
470		35×40	1.63	339	35×55	1.64	367
560		35×50	1.93	284	35×65	1.91	308
680		35×55	2.19	234	35×65	2.22	254
820		35×60	2.45	194	35×90	2.61	210
1000		35×70	2.78	159			

Operating voltage (V)	550(600)			600(650)			
	project	Dimensions: $\Phi D \times L$ (mm)	Ripple current (105°C 120Hz) Arms	ESR (Max, m Ω / 120Hz 20°C)	Dimensions: $\Phi D \times L$ (mm)	Ripple current (105°C 120Hz) Arms	ESR (Max, m Ω / 120Hz 20°C)
120		30×30	0.91	1547	30×40	0.96	1658
					35×30	0.95	1658
150		30×35	1.04	1237	30×45	1.10	1325
					35×35	1.07	1325
180		30×40	1.17	1032	30×50	1.22	1092
		35×30	1.10	1032	35×40	1.22	1092
220		30×50	1.35	844	30×60	1.40	893
		35×40	1.28	844	35×45	1.38	893
270		35×45	1.45	688	35×50	1.56	728
330		35×50	1.64	563	35×60	1.79	522
390		35×60	1.85	476			
470		35×60	2.22	390	35×65	2.15	317
680		35×75	3.87	305	40×70	3.74	223



VHT

- ◆ Low ESR, high tolerable ripple current, high reliability
- ◆ 125°C, 4000-hour warranty
- ◆ Meets vibration resistance requirements
- ◆ Surface mount type, suitable for high-temperature lead-free reflow soldering
- ◆ Compliant with AEC-Q200, RoHS compliant

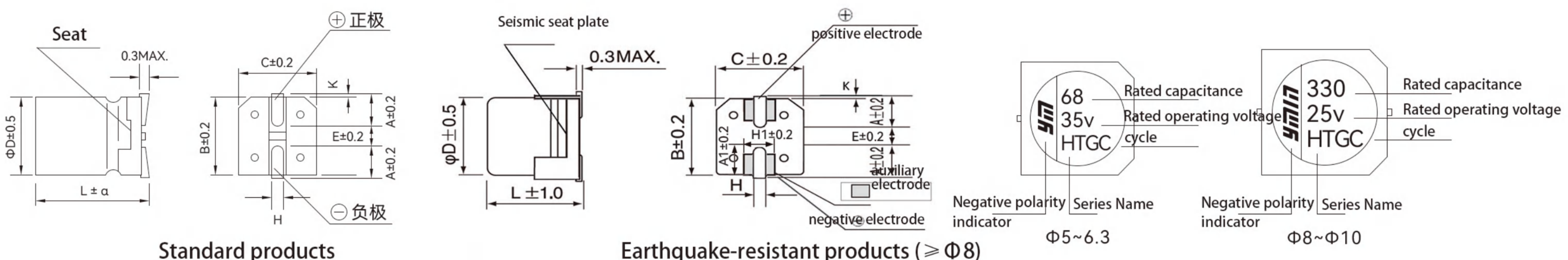


Main technical parameters

project	characteristic	
Operating temperature range	- 55 ~ +125°C	
Rated operating voltage	6.3 ~ 100V	
Capacity range	4.7 ~ 2200μF 120Hz 20°C	
Capacity tolerance	±20% (120Hz 20°C)	
Loss tangent	The following are the values from the standard product list: 120Hz, 20°C	
Leakage current	Below 0.01CV (μA), charge for 2 minutes at rated voltage, 20°C	
Equivalent series resistance (ESR)	The following are the values from the standard sample list: 100kHz, 20°C	
Temperature characteristics	Z(-25°C)/Z(+20°C) ≤ 2.0 ; Z(-55°C)/Z(+20°C) ≤ 2.5 (100kHz)	
Durability	After applying the rated voltage with rated ripple current at 105°C for 2000H/5000H, and then placing it at 20°C for 16 hours, the product should meet the following requirements.	
	Rate of change of capacitance	± 30% of the initial value
	Equivalent series resistance (ESR)	≦ 200% of the initial specification value
	Leakage current	≦ Initial specification value
High temperature storage	After storage at 105°C for 1000 hours, followed by a 16-hour period at room temperature (20°C ± 2°C), the product should meet the following requirements.	
	Rate of change of capacitance	± 30% of the initial value
	Equivalent series resistance (ESR)	≦ 200% of the initial specification value
	Leakage current	≦ Initial specification value
Note: Products stored at high temperatures must undergo voltage treatment.		
High temperature and humidity	After being subjected to rated voltage for 1000 hours at 85° C and 85% RH, and then placed at 20° C for 16 hours, the product should meet the following requirements.	
	Rate of change of capacitance	± 30% of the initial value
	Equivalent series resistance (ESR)	≦ 200% of the initial specification value
	Leakage current	≦ Initial specification value

※If there is any doubt about the leakage current value, please place the product at 105° C and apply the rated operating voltage for 2 hours, then cool it down to 20° C before testing the leakage current.

Product dimension drawing (unit: mm)



ΦD	B	C	A	A1	H	H1	E	K	α
5	5.3	5.3	2.1	/	0.65±0.20	/	1.3	0.5MAX	±0.5
6.3	6.6(7.0)	6.6	2.6	1.3	0.70±0.20	2.5	1.8	0.5MAX	
8	8.3(8.8)	8.3	3.0	1.8	0.90±0.20	3.9	3.1	0.5MAX	
10	10.3(10.8)	10.3	3.5	1.8	0.90±0.20	3.9	4.6	0.70±0.20	
12.5	12.8(13.5)	12.8	4.7	2.5	0.90±0.20	4.4	4.6	0.70±0.30	±1.0

Frequency correction factor

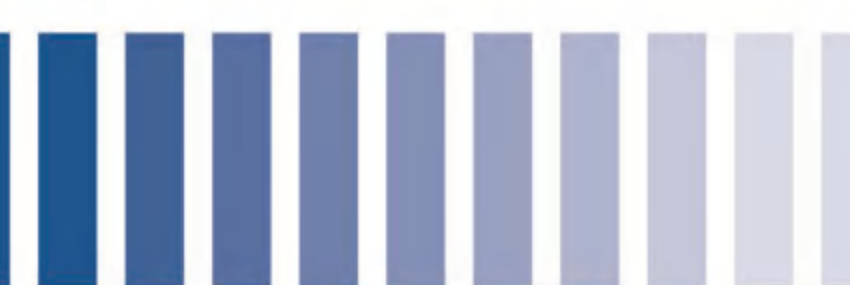
Capacitance C	Frequency (Hz)	120Hz	500Hz	1kHz	5kHz	10kHz	20kHz	40kHz	100kHz	200kHz	500kHz
C < 47 μF	Correction factor	0.12	0.20	0.35	0.50	0.65	0.70	0.80	1.00	1.00	1.05
47 μF ≤ C < 120 μF		0.15	0.30	0.45	0.60	0.75	0.80	0.85	1.00	1.00	1.00
C ≥ 120 μF		0.15	0.30	0.45	0.65	0.80	0.85	0.85	1.00	1.00	1.00



VHT

■ List of Standard Products

Rated voltage (V)	nominal capacity (μF)	size ΦD×L(mm)	Tan δ 120Hz	ESR (mΩ100kHz)	Rated ripple current (mA r.m.s./125°C100kHz)	model	
						Standard products	earthquake-resistant products
6.3(7.2)	100	5×5.8	0.16	80	550	VHTB0580J101MVCG	---
10(11.5)	47	6.3×5.8	0.16	45	950	VHTC0581A470MVCG	VHTC0581A470MVKZ
10(11.5)	100	5×5.8	0.16	80	550	VHTB0581A101MVCG	---
10(11.5)	220	6.3×5.8	0.16	45	950	VHTC0581A221MVCG	VHTC0581A221MVKZ
10(11.5)	470	6.3×7.7	0.16	27	1450	VHTC0771A471MVCG	VHTC0771A471MVKZ
16(18.4)	47	5×5.8	0.16	80	550	VHTB0581C470MVCG	---
16(18.4)	82	6.3×5.8	0.16	45	950	VHTC0581C820MVCG	VHTC0581C820MVKZ
16(18.4)	100	5×7.7	0.16	60	600	VHTB0771C101MVCG	---
16(18.4)	100	6.3×5.8	0.16	45	950	VHTC0581C101MVCG	VHTC0581C101MVKZ
16(18.4)	150	6.3×7.7	0.16	27	1450	VHTC0771C151MVCG	VHTC0771C151MVKZ
16(18.4)	220	6.3×5.8	0.16	45	950	VHTC0581C221MVCG	VHTC0581C221MVKZ
16(18.4)	270	6.3×7.7	0.16	27	1450	VHTC0771C271MVCG	VHTC0771C271MVKZ
16(18.4)	270	8×10.5	0.16	22	1700	VHTD1051C271MVCG	VHTD1051C271MVKZ
16(18.4)	470	10×10.5	0.16	18	3000	VHTE1051C471MVCG	VHTE1051C471MVKZ
16(18.4)	1200	10×13	0.17	16	3100	VHTE1301C122MVCG	VHTE1301C122MVKZ
16(18.4)	1800	10×17	0.17	12	4100	VHTE1701C182MVCG	VHTE1701C182MVKZ
25(28.8)	22	5×5.8	0.14	80	550	VHTB0581E220MVCG	---
25(28.8)	33	5×5.8	0.14	80	550	VHTB0581E330MVCG	---
25(28.8)	33	6.3×5.8	0.14	50	900	VHTC0581E330MVCG	VHTC0581E330MVKZ
25(28.8)	47	6.3×5.8	0.14	50	900	VHTC0581E470MVCG	VHTC0581E470MVKZ
25(28.8)	56	5×5.8	0.14	80	550	VHTB0581E560MVCG	---
25(28.8)	56	6.3×5.8	0.14	50	900	VHTC0581E560MVCG	VHTC0581E560MVKZ
25(28.8)	68	6.3×7.7	0.14	30	1400	VHTC0771E680MVCG	VHTC0771E680MVKZ
25(28.8)	100	6.3×5.8	0.14	50	900	VHTC0581E101MVCG	VHTC0581E101MVKZ
25(28.8)	100	6.3×7.7	0.14	30	1400	VHTC0771E101MVCG	VHTC0771E101MVKZ
25(28.8)	150	6.3×7.7	0.14	30	1400	VHTC0771E151MVCG	VHTC0771E151MVKZ
25(28.8)	150	8×10.5	0.14	27	1600	VHTD1051E151MVCG	VHTD1051E151MVKZ
25(28.8)	180	8×8.5	0.14	30	1400	VHTD0851E181MVCG	VHTD0851E181MVKZ
25(28.8)	220	8×8.5	0.14	30	1400	VHTD0851E221MVCG	VHTD0851E221MVKZ
25(28.8)	220	8×10.5	0.14	27	1600	VHTD1051E221MVCG	VHTD1051E221MVKZ
25(28.8)	270	8×10.5	0.14	27	1600	VHTD1051E271MVCG	VHTD1051E271MVKZ
25(28.8)	270	10×10.5	0.14	20	2800	VHTE1051E271MVCG	VHTE1051E271MVKZ
25(28.8)	330	10×10.5	0.14	20	2800	VHTE1051E331MVCG	VHTE1051E331MVKZ
25(28.8)	470	10×10.5	0.14	20	2800	VHTE1051E471MVCG	VHTE1051E471MVKZ
25(28.8)	470	10×13	0.14	16	3100	VHTE1301E471MVCG	VHTE1301E471MVKZ
25(28.8)	560	10×10.5	0.14	20	2800	VHTE1051E561MVCG	VHTE1051E561MVKZ
25(28.8)	560	10×13	0.14	16	3100	VHTE1301E561MVCG	VHTE1301E561MVKZ
25(28.8)	680	10×13	0.14	16	3100	VHTE1301E681MVCG	VHTE1301E681MVKZ
25(28.8)	820	10×13	0.14	16	3100	VHTE1301E821MVCG	VHTE1301E821MVKZ
25(28.8)	1000	10×17	0.14	12	4100	VHTE1701E102MVCG	VHTE1701E102MVKZ
35(41)	10	6.3×7.7	0.12	35	1400	VHTC0771V100MVCG	VHTC0771V100MVKZ
35(41)	22	5×5.8	0.12	100	550	VHTB0581V220MVCG	---
35(41)	27	6.3×5.8	0.12	60	900	VHTC0581V270MVCG	VHTC0581V270MVKZ



VHT

■ List of Standard Products

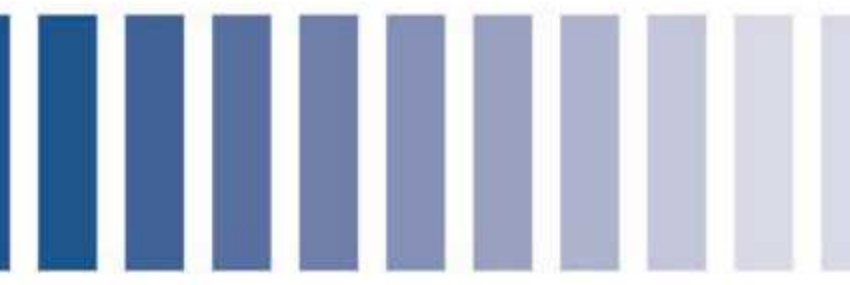
Rated voltage (V)	nominal capacity (μF)	size ΦD×L(mm)	Tan δ 120Hz	ESR (mΩ100kHz)	Rated ripple current (mA r.m.s./125°C100kHz)	model	
						Standard products	earthquake-resistant products
35(41)	47	6.3×5.8	0.12	60	900	VHTC0581V470MVCG	VHTC0581V470MVKZ
35(41)	47	6.3×7.7	0.12	35	1400	VHTC0771V470MVCG	VHTC0771V470MVKZ
35(41)	47	8×10.5	0.12	27	1600	VHTD1051V470MVCG	VHTD1051V470MVKZ
35(41)	56	6.3×5.8	0.12	60	900	VHTC0581V560MVCG	VHTC0581V560MVKZ
35(41)	68	6.3×7.7	0.12	35	1400	VHTC0771V680MVCG	VHTC0771V680MVKZ
35(41)	100	6.3×7.7	0.12	35	1400	VHTC0771V101MVCG	VHTC0771V101MVKZ
35(41)	100	8×10.5	0.12	27	1600	VHTD1051V101MVCG	VHTD1051V101MVKZ
35(41)	100	10×10.5	0.12	20	2800	VHTE1051V101MVCG	VHTE1051V101MVKZ
35(41)	100	10×13	0.12	16	3000	VHTE1301V101MVCG	VHTE1301V101MVKZ
35(41)	120	6.3×7.7	0.12	35	1400	VHTC0771V121MVCG	VHTC0771V121MVKZ
35(41)	150	6.3×7.7	0.12	35	1400	VHTC0771V151MVCG	VHTC0771V151MVKZ
35(41)	150	8×10.5	0.12	27	1600	VHTD1051V151MVCG	VHTD1051V151MVKZ
35(41)	150	10×10.5	0.12	20	2800	VHTE1051V151MVCG	VHTE1051V151MVKZ
35(41)	180	8×10.5	0.12	27	1600	VHTD1051V181MVCG	VHTD1051V181MVKZ
35(41)	220	8×10.5	0.12	27	1600	VHTD1051V221MVCG	VHTD1051V221MVKZ
35(41)	270	10×10.5	0.12	20	2800	VHTE1051V271MVCG	VHTE1051V271MVKZ
35(41)	330	10×10.5	0.12	20	2800	VHTE1051V331MVCG	VHTE1051V331MVKZ
35(41)	390	10×10.5	0.12	20	2800	VHTE1051V391MVCG	VHTE1051V391MVKZ
35(41)	470	10×10.5	0.12	20	2800	VHTE1051V471MVCG	VHTE1051V471MVKZ
35(41)	470	10×13	0.12	16	3000	VHTE1301V471MVCG	VHTE1301V471MVKZ
35(41)	560	10×13	0.12	16	3000	VHTE1301V561MVCG	VHTE1301V561MVKZ
35(41)	680	10×13	0.12	16	3000	VHTE1301V681MVCG	VHTE1301V681MVKZ
35(41)	680	10×17	0.12	12	4100	VHTE1701V681MVCG	VHTE1701V681MVKZ
35(41)	820	12.5×13.5	0.12	16	3850	VHTL1351V821MVCG	VHTL1351V821MVKZ
35(41)	1000	12.5×15	0.12	16	4050	VHTL1501V102MVCG	VHTL1501V102MVKZ
35(41)	2200	18×21.5	0.14	16	5750	VHTJ2151V222MVCG	VHTJ2151V222MVKZ
50(58)	4.7	6.3×5.8	0.10	80	750	VHTC0581H4R7MVCG	VHTC0581H4R7MVKZ
50(58)	10	5×5.8	0.10	120	550	VHTB0581H100MVCG	---
50(58)	10	6.3×5.8	0.10	80	750	VHTC0581H100MVCG	VHTC0581H100MVKZ
50(58)	15	6.3×7.7	0.10	40	1100	VHTC0771H150MVCG	VHTC0771H150MVKZ
50(58)	22	6.3×5.8	0.10	80	750	VHTC0581H220MVCG	VHTC0581H220MVKZ
50(58)	33	6.3×7.7	0.10	40	1100	VHTC0771H330MVCG	VHTC0771H330MVKZ
50(58)	33	8×10.5	0.10	30	1250	VHTD1051H330MVCG	VHTD1051H330MVKZ
50(58)	47	6.3×7.7	0.10	40	1100	VHTC0771H470MVCG	VHTC0771H470MVKZ
50(58)	47	6.3×8.5	0.10	35	1150	VHTC0851H470MVCG	VHTC0851H470MVKZ
50(58)	47	6.3×10	0.10	40	1300	VHTC1001H470MVCG	VHTC1001H470MVKZ
50(58)	47	8×10.5	0.10	30	1250	VHTD1051H470MVCG	VHTD1051H470MVKZ
50(58)	47	10×10.5	0.10	25	1600	VHTE1051H470MVCG	VHTE1051H470MVKZ
50(58)	56	6.3×7.7	0.10	40	1100	VHTC0771H560MVCG	VHTC0771H560MVKZ
50(58)	56	10×10.5	0.10	25	1600	VHTE1051H560MVCG	VHTE1051H560MVKZ
50(58)	68	8×10.5	0.10	30	1250	VHTD1051H680MVCG	VHTD1051H680MVKZ
50(58)	100	8×10.5	0.10	30	1250	VHTD1051H101MVCG	VHTD1051H101MVKZ
50(58)	100	10×10.5	0.10	25	1600	VHTE1051H101MVCG	VHTE1051H101MVKZ



VHT

■ List of Standard Products

Rated voltage (V)	nominal capacity (μF)	size ΦD×L(mm)	Tan δ 120Hz	ESR (mΩ100kHz)	Rated ripple current (mA r.m.s./125°C 100kHz)	model	
						Standard products	earthquake-resistant products
50(58)	100	10×17	0.10	12	3700	VHTE1701H101MVCG	VHTE1701H101MVKZ
50(58)	120	10×10.5	0.10	25	1600	VHTE1051H121MVCG	VHTE1051H121MVKZ
50(58)	150	10×10.5	0.10	25	1600	VHTE1051H151MVCG	VHTE1051H151MVKZ
50(58)	180	10×13	0.10	20	2400	VHTE1301H181MVCG	VHTE1301H181MVKZ
50(58)	220	10×12.5	0.10	20	2400	VHTE1251H221MVCG	VHTE1251H221MVKZ
50(58)	220	10×13	0.10	20	2400	VHTE1301H221MVCG	VHTE1301H221MVKZ
50(58)	220	10×13.5	0.10	20	2400	VHTE1351H221MVCG	VHTE1351H221MVKZ
50(58)	270	10×17	0.10	12	3700	VHTE1701H271MVCG	VHTE1701H271MVKZ
50(58)	330	10×15.5	0.10	30	3500	VHTE1551H331MVCG	VHTE1551H331MVKZ
50(58)	330	10×17	0.10	12	3700	VHTE1701H331MVCG	VHTE1701H331MVKZ
50(58)	330	12.5×13.5	0.10	20	3500	VHTL1351H331MVCG	VHTL1351H331MVKZ
63(73)	6.8	6.3×5.8	0.08	120	700	VHTC0581J6R8MVCG	VHTC0581J6R8MVKZ
63(73)	10	6.3×5.8	0.08	120	700	VHTC0581J100MVCG	VHTC0581J100MVKZ
63(73)	10	6.3×7.7	0.08	80	900	VHTC0771J100MVCG	VHTC0771J100MVKZ
63(73)	22	6.3×5.8	0.08	120	700	VHTC0581J220MVCG	VHTC0581J220MVKZ
63(73)	22	6.3×7.7	0.08	80	900	VHTC0771J220MVCG	VHTC0771J220MVKZ
63(73)	22	8×10.5	0.08	40	1100	VHTD1051J220MVCG	VHTD1051J220MVKZ
63(73)	33	8×10.5	0.08	40	1100	VHTD1051J330MVCG	VHTD1051J330MVKZ
63(73)	33	10×10.5	0.08	30	1400	VHTE1051J330MVCG	VHTE1051J330MVKZ
63(73)	47	8×8.5	0.08	50	950	VHTD0851J470MVCG	VHTD0851J470MVKZ
63(73)	47	8×10.5	0.08	40	1100	VHTD1051J470MVCG	VHTD1051J470MVKZ
63(73)	47	10×10.5	0.08	30	1400	VHTE1051J470MVCG	VHTE1051J470MVKZ
63(73)	56	10×10.5	0.08	30	1400	VHTE1051J560MVCG	VHTE1051J560MVKZ
63(73)	68	10×10.5	0.08	30	1400	VHTE1051J680MVCG	VHTE1051J680MVKZ
63(73)	82	10×10.5	0.08	30	1400	VHTE1051J820MVCG	VHTE1051J820MVKZ
63(73)	100	10×13	0.08	20	2200	VHTE1301J101MVCG	VHTE1301J101MVKZ
63(73)	150	10×13	0.08	20	2200	VHTE1301J151MVCG	VHTE1301J151MVKZ
63(73)	150	10×16.5	0.08	12	3500	VHTE1651J151MVCG	VHTE1651J151MVKZ
63(73)	150	10×17	0.08	12	3500	VHTE1701J151MVCG	VHTE1701J151MVKZ
63(73)	180	10×17	0.08	12	3500	VHTE1701J181MVCG	VHTE1701J181MVKZ
63(73)	220	10×17	0.08	12	3500	VHTE1701J221MVCG	VHTE1701J221MVKZ
80(92)	10	6.3×5.8	0.10	120	700	VHTC0581K100MVCG	VHTC0581K100MVKZ
80(92)	12	6.3×5.8	0.10	120	700	VHTC0581K120MVCG	VHTC0581K120MVKZ
80(92)	15	6.3×7.7	0.10	80	900	VHTC0771K150MVCG	VHTC0771K150MVKZ
80(92)	22	8×10.5	0.08	45	1100	VHTD1051K220MVCG	VHTD1051K220MVKZ
80(92)	33	10×10.5	0.10	35	1200	VHTE1051K330MVCG	VHTE1051K330MVKZ
80(92)	39	10×10.5	0.10	35	1200	VHTE1051K390MVCG	VHTE1051K390MVKZ
80(92)	47	8×10.5	0.08	45	1100	VHTD1051K470MVCG	VHTD1051K470MVKZ
80(92)	47	10×10.5	0.10	35	1200	VHTE1051K470MVCG	VHTE1051K470MVKZ
80(92)	68	10×10.5	0.10	35	1200	VHTE1051K680MVCG	VHTE1051K680MVKZ
80(92)	82	10×13	0.10	20	2200	VHTE1301K820MVCG	VHTE1301K820MVKZ
80(92)	100	8×17	0.08	30	1450	VHTD1701K101MVCG	VHTD1701K101MVKZ
80(92)	100	10×10.5	0.10	35	1200	VHTE1051K101MVCG	VHTE1051K101MVKZ



VHT

■ List of Standard Products

Rated voltage (V)	nominal capacity (μF)	size ΦD×L(mm)	Tan δ 120Hz	ESR (mΩ100kHz)	Rated ripple current (mA r.m.s/125°C100kHz)	model	
						Standard products	earthquake-resistant products
80(92)	100	10×17	0.10	12	3500	VHTE1701K101MVCG	VHTE1701K101MVKZ
80(92)	120	10×17	0.10	12	3500	VHTE1701K121MVCG	VHTE1701K121MVKZ
80(92)	150	10×15.5	0.10	30	3300	VHTE1551K151MVCG	VHTE1551K151MVKZ
80(92)	150	12.5×13.5	0.10	20	3400	VHTL1351K151MVCG	VHTL1351K151MVKZ
80(92)	180	10×17	0.10	12	3500	VHTE1701K181MVCG	VHTE1701K181MVKZ
80(92)	220	12.5×17	0.10	20	3900	VHTL1701K221MVCG	VHTL1701K221MVKZ
80(92)	220	16×16.5	0.10	16	4350	VHTI1651K221MVCG	VHTI1651K221MVKZ
80(92)	270	12.5×19	0.10	20	4100	VHTL1901K271MVCG	VHTL1901K271MVKZ
80(92)	330	12.5×21	0.10	16	4300	VHTL2101K331MVCG	VHTL2101K331MVKZ
80(92)	470	16×21.5	0.10	16	4950	VHTI2151K471MVCG	VHTI2151K471MVKZ
100(115)	5.6	6.3×5.8	0.10	120	700	VHTC0582A5R6MVCG	VHTC0582A5R6MVKZ
100(115)	8.2	6.3×5.8	0.10	120	700	VHTC0582A8R2MVCG	VHTC0582A8R2MVKZ
100(115)	10	6.3×7.7	0.10	80	900	VHTC0772A100MVCG	VHTC0772A100MVKZ
100(115)	18	8×10.5	0.08	45	1100	VHTD1052A180MVCG	VHTD1052A180MVKZ
100(115)	22	8×10.5	0.08	45	1100	VHTD1052A220MVCG	VHTD1052A220MVKZ
100(115)	33	10×10.5	0.10	35	1200	VHTE1052A330MVCG	VHTE1052A330MVKZ
100(115)	47	10×10.5	0.10	35	1200	VHTE1052A470MVCG	VHTE1052A470MVKZ
100(115)	56	10×13	0.10	20	2200	VHTE1302A560MVCG	VHTE1302A560MVKZ
100(115)	82	10×17	0.10	12	3500	VHTE1702A820MVCG	VHTE1702A820MVKZ
100(115)	82	12.5×14.5	0.10	20	3500	VHTL1452A820MVCG	VHTL1452A820MVKZ
100(115)	120	12.5×15	0.10	20	3500	VHTL1502A121MVCG	VHTL1502A121MVKZ
100(115)	220	12.5×21	0.10	16	4100	VHTL2102A221MVCG	VHTL2102A221MVKZ



VHM

- ◆ Miniaturized, high-capacity upgrade of the VHM series
- ◆ Low ESR, high permissible ripple current, high reliability
- ◆ 125°C, 4000-hour warranty
- ◆ Compliant with AEC-Q200, RoHS compliant
- ◆ Meets vibration resistance requirements, surface mount type, suitable for high-temperature lead-free reflow soldering

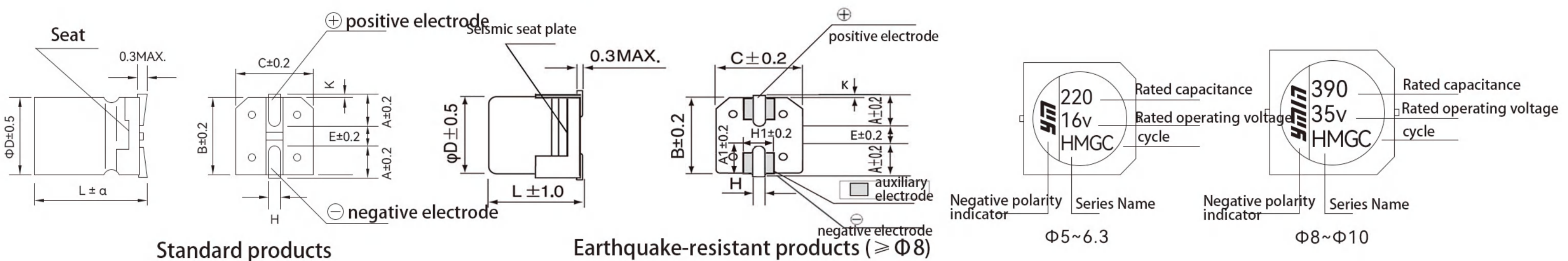


Main technical parameters

project	characteristic	
Operating temperature range	- 55 ~ +125°C	
Rated operating voltage	16 ~ 100V	
Capacity range	3.3 ~ 1800µF 120Hz 20°C	
Capacity tolerance	±20% (120Hz 20°C)	
Loss tangent	The following are the values from the standard product list: 120Hz, 20°C	
Leakage current	Below 0.01CV (µA), charge for 2 minutes at rated voltage, 20°C	
Equivalent series resistance (ESR)	The following are the values from the standard sample list: 100kHz, 20°C	
Temperature characteristics	Z(-25°C)/Z(+20°C) ≤ 2.0 ; Z(-55°C)/Z(+20°C) ≤ 2.5 (100kHz)	
Durability	After applying the rated voltage with rated ripple current at 105°C for 2000H/5000H, and then placing it at 20°C for 16 hours, the product should meet the following requirements.	
	Rate of change of capacitance	± 30% of the initial value
	Equivalent series resistance (ESR)	≦ 200% of the initial specification value
	Loss tangent	≦ 200% of the initial specification value
	Leakage current	≦ Initial specification value
High temperature storage	After storage at 105°C for 1000 hours, followed by a 16-hour period at room temperature (20°C ± 2°C), the product should meet the following requirements.	
	Rate of change of capacitance	± 30% of the initial value
	Equivalent series resistance (ESR)	≦ 200% of the initial specification value
	Loss tangent	≦ 200% of the initial specification value
	Leakage current	≦ Initial specification value
Note: Products stored at high temperatures must undergo voltage treatment.		
High temperature and humidity	After being subjected to rated voltage for 1000 hours at 85° C and 85% RH, and then placed at 20° C for 16 hours, the product should meet the following requirements.	
	Rate of change of capacitance	± 30% of the initial value
	Equivalent series resistance (ESR)	≦ 200% of the initial specification value
	Loss tangent	≦ 200% of the initial specification value
	Leakage current	≦ Initial specification value

※ If there is any doubt about the leakage current value, please place the product at 105° C and apply the rated operating voltage for 2 hours, then cool it down to 20° C before testing the leakage current.

Product dimension drawing (unit: mm)



ΦD	B	C	A	A1	H	H1	E	K	α
5	5.3	5.3	2.1	/	0.65±0.20	/	1.3	0.5MAX	±0.5
6.3	6.6(7.0)	6.6	2.6	1.3	0.70±0.20	2.5	1.8	0.5MAX	
8	8.3(8.8)	8.3	3.0	1.8	0.90±0.20	3.9	3.1	0.5MAX	
10	10.3(10.8)	10.3	3.5	1.8	0.90±0.20	3.9	4.6	0.70±0.20	±1.0
12.5	12.8(13.5)	12.8	4.7	2.5	0.90±0.30	4.4	4.6	0.70±0.30	

Frequency correction factor

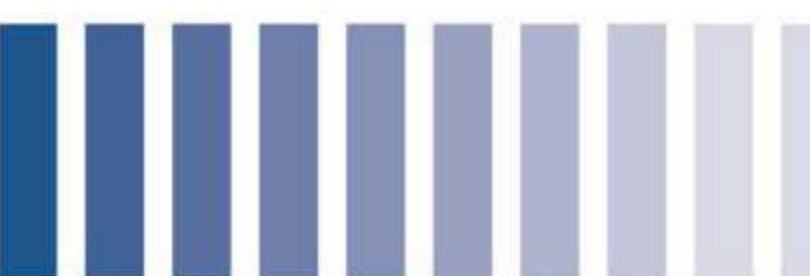
Capacitance C	Frequency (Hz)	120Hz	500Hz	1kHz	5kHz	10kHz	20kHz	40kHz	100kHz	200kHz	500kHz
C < 47µF	Correction factor	0.12	0.20	0.35	0.50	0.65	0.70	0.80	1.00	1.00	1.05
47µF ≤ C < 120µF		0.15	0.30	0.45	0.60	0.75	0.80	0.85	1.00	1.00	1.00
C ≥ 120µF		0.15	0.30	0.45	0.65	0.80	0.85	0.85	1.00	1.00	1.00



VHM

■ List of Standard Products

Rated voltage (V)	nominal capacity (μF)	size ΦD×L(mm)	Tan δ 120Hz	ESR (mΩ100kHz)	Rated ripple current (mA r.m.s/125°C100kHz)	model	
						Standard products	earthquake-resistant products
16(18.4)	82	5×5.8	0.12	80	850	VHMB0581C820MVCG	---
16(18.4)	82	6.3×5.8	0.12	45	1400	VHMC0581C820MVCG	VHMC0581C820MVKZ
16(18.4)	150	6.3×5.8	0.12	45	1400	VHMC0581C151MVCG	VHMC0581C151MVKZ
16(18.4)	150	6.3×7.7	0.12	27	2000	VHMC0771C151MVCG	VHMC0771C151MVKZ
16(18.4)	220	6.3×7.7	0.12	27	2000	VHMC0771C221MVCG	VHMC0771C221MVKZ
16(18.4)	560	8×10.5	0.12	22	2200	VHMD1051C561MVCG	VHMD1051C561MVKZ
16(18.4)	1000	10×10.5	0.12	18	2800	VHME1051C102MVCG	VHME1051C102MVKZ
16(18.4)	1200	10×13	0.12	16	3200	VHME1301C122MVCG	VHME1301C122MVKZ
16(18.4)	1800	10×17	0.13	12	4100	VHME1701C182MVCG	VHME1701C182MVKZ
25(28.8)	56	5×5.8	0.12	80	850	VHMB0581E560MVCG	---
25(28.8)	100	6.3×5.8	0.12	50	1300	VHMC0581E101MVCG	VHMC0581E101MVKZ
25(28.8)	100	6.3×7.7	0.12	30	1800	VHMC0771E101MVCG	VHMC0771E101MVKZ
25(28.8)	180	6.3×7.7	0.12	30	1800	VHMC0771E181MVCG	VHMC0771E181MVKZ
25(28.8)	330	8×10.5	0.12	27	2000	VHMD1051E331MVCG	VHMD1051E331MVKZ
25(28.8)	560	10×10.5	0.12	20	2800	VHME1051E561MVCG	VHME1051E561MVKZ
25(28.8)	560	10×13	0.12	16	3200	VHME1301E561MVCG	VHME1301E561MVKZ
25(28.8)	820	10×13	0.12	16	3200	VHME1301E821MVCG	VHME1301E821MVKZ
25(28.8)	1000	10×17	0.12	12	4100	VHME1701E102MVCG	VHME1701E102MVKZ
25(28.8)	1500	10×17	0.13	12	4100	VHME1701E152MVCG	VHME1701E152MVKZ
35(41)	39	5×5.8	0.12	100	750	VHMB0581V390MVCG	---
35(41)	47	6.3×7.7	0.12	35	1800	VHMC0771V470MVCG	VHMC0771V470MVKZ
35(41)	68	6.3×5.8	0.12	60	1200	VHMC0581V680MVCG	VHMC0581V680MVKZ
35(41)	120	6.3×7.7	0.12	35	1800	VHMC0771V121MVCG	VHMC0771V121MVKZ
35(41)	220	8×10.5	0.12	27	2000	VHMD1051V221MVCG	VHMD1051V221MVKZ
35(41)	390	10×10.5	0.12	20	2800	VHME1051V391MVCG	VHME1051V391MVKZ
35(41)	390	10×13	0.12	16	3200	VHME1301V391MVCG	VHME1301V391MVKZ
35(41)	560	10×12.5	0.12	16	3200	VHME1251V561MVCG	VHME1251V561MVKZ
35(41)	560	10×13	0.12	16	3200	VHME1301V561MVCG	VHME1301V561MVKZ
35(41)	560	12.5×13.5	0.12	16	3600	VHML1351V561MVCG	VHML1351V561MVKZ
35(41)	680	10×17	0.12	12	4100	VHME1701V681MVCG	VHME1701V681MVKZ
50(58)	12	5×5.8	0.10	120	650	VHMB0581H120MVCG	---
50(58)	22	6.3×5.8	0.10	80	1000	VHMC0581H220MVCG	VHMC0581H220MVKZ
50(58)	33	6.3×7.7	0.10	40	1600	VHMC0771H330MVCG	VHMC0771H330MVKZ
50(58)	82	8×10.5	0.10	30	1800	VHMD1051H820MVCG	VHMD1051H820MVKZ
50(58)	150	10×10.5	0.10	25	2200	VHME1051H151MVCG	VHME1051H151MVKZ
50(58)	220	10×13	0.10	20	2400	VHME1301H221MVCG	VHME1301H221MVKZ
50(58)	270	10×17	0.10	12	3850	VHME1701H271MVCG	VHME1701H271MVKZ
50(58)	680	12.5×21	0.10	16	4450	VHML2101H681MVCG	VHML2101H681MVKZ
63(73)	8.2	5×5.8	0.08	120	650	VHMB0581J8R2MVCG	---
63(73)	15	6.3×5.8	0.08	80	1000	VHMC0581J150MVCG	VHMC0581J150MVKZ
63(73)	22	6.3×7.7	0.08	50	1600	VHMC0771J220MVCG	VHMC0771J220MVKZ
63(73)	56	8×10.5	0.08	40	1800	VHMD1051J560MVCG	VHMD1051J560MVKZ
63(73)	100	10×10.5	0.08	30	2200	VHME1051J101MVCG	VHME1051J101MVKZ



VHM

■ List of Standard Products

Rated voltage (V)	nominal capacity (μF)	size ΦD×L(mm)	Tan δ 120Hz	ESR (mΩ100kHz)	Rated ripple current (mA r.m.s/125°C100kHz)	model	
						Standard products	earthquake-resistant products
63(73)	120	10×13	0.08	20	2400	VHME1301J121MVCG	VHME1301J121MVKZ
63(73)	150	10×12.5	0.08	20	2400	VHME1251J151MVCG	VHME1251J151MVKZ
63(73)	150	10×13	0.08	20	2400	VHME1301J151MVCG	VHME1301J151MVKZ
63(73)	180	10×17	0.08	12	3850	VHME1701J181MVCG	VHME1701J181MVKZ
80(92)	5.6	5×5.8	0.10	120	650	VHMB0581K5R6MVCG	---
80(92)	10	6.3×5.8	0.10	80	1000	VHMC0581K100MVCG	VHMC0581K100MVKZ
80(92)	15	6.3×7.7	0.10	50	1500	VHMC0771K150MVCG	VHMC0771K150MVKZ
80(92)	39	8×10.5	0.10	40	1800	VHMD1051K390MVCG	VHMD1051K390MVKZ
80(92)	68	10×10.5	0.10	30	2000	VHME1051K680MVCG	VHME1051K680MVKZ
80(92)	82	10×13	0.10	20	2200	VHME1301K820MVCG	VHME1301K820MVKZ
80(92)	100	10×13	0.10	20	2200	VHME1301K101MVCG	VHME1301K101MVKZ
80(92)	120	10×15.5	0.10	20	2400	VHME1551K121MVCG	VHME1551K121MVKZ
80(92)	120	10×17	0.10	12	3650	VHME1701K121MVCG	VHME1701K121MVKZ
80(92)	150	10×15.5	0.10	20	2400	VHME1551K151MVCG	VHME1551K151MVKZ
80(92)	150	10×17	0.10	12	3650	VHME1701K151MVCG	VHME1701K151MVKZ
80(92)	180	10×17	0.10	12	3650	VHME1701K181MVCG	VHME1701K181MVKZ
80(92)	220	10×22	0.10	12	4150	VHME2201K221MVCG	VHME2201K221MVKZ
100(115)	3.3	5×5.8	0.10	120	650	VHMB0582A3R3MVCG	---
100(115)	5.6	6.3×5.8	0.10	80	1000	VHMC0582A5R6MVCG	VHMC0582A5R6MVKZ
100(115)	10	6.3×7.7	0.10	50	1500	VHMC0772A100MVCG	VHMC0772A100MVKZ
100(115)	22	8×10.5	0.10	40	1800	VHMD1052A220MVCG	VHMD1052A220MVKZ
100(115)	39	10×10.5	0.10	30	2000	VHME1052A390MVCG	VHME1052A390MVKZ
100(115)	56	10×13	0.10	20	2200	VHME1302A560MVCG	VHME1302A560MVKZ
100(115)	82	10×17	0.10	12	3650	VHME1702A820MVCG	VHME1702A820MVKZ



SDB

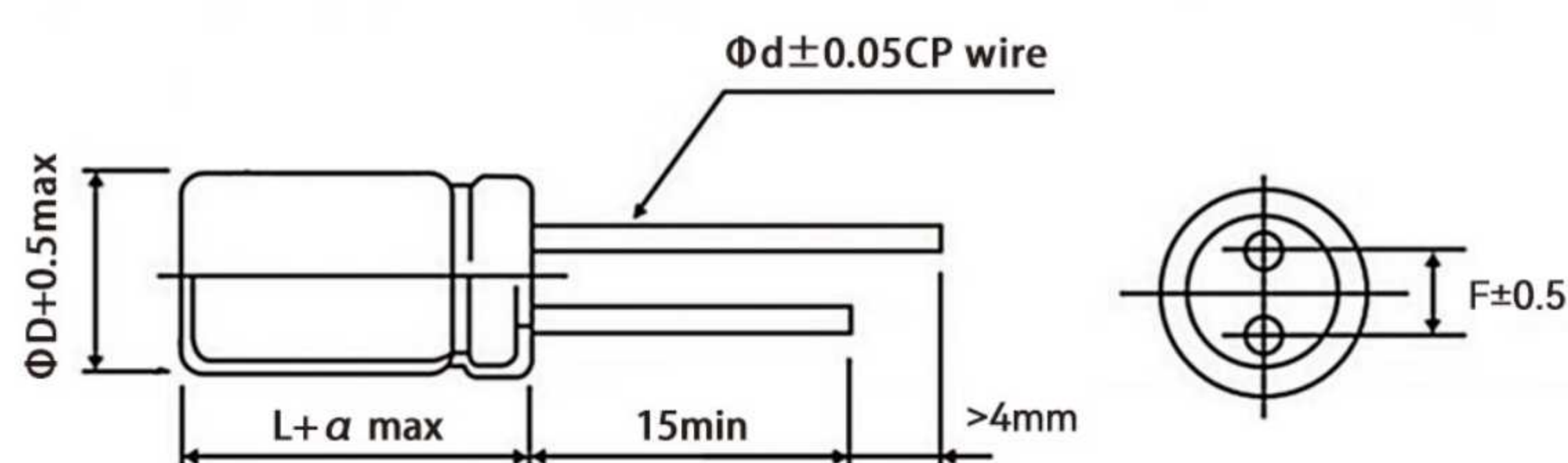
- ◆ 3.0V standard wound type
- ◆ 70°C 1000-hour product
- ◆ High energy, high power, high voltage, long charge/discharge cycle life
- ◆ Compliant with RoHS and REACH directives



Main technical parameters

project	characteristic	
Operating temperature range	-40~+70°C	
Rated operating voltage	3.0V	
Nominal capacity range	1.0F~160F	
Normal temperature capacity deviation	-10%~+30% (25°C)	
High temperature load life	After continuously applying the rated voltage at the rated temperature for 1000 hours, the system is returned to 25° C for testing.	The following requirements must be met: Capacity change ΔC is less than 30% of the initial value; Internal resistance is less than four times
Steady-state damp heat life	After continuously applying the rated voltage for 240 hours at 40°C and 90%~95%RH humidity, the test was conducted at 25°C.	The following requirements must be met: Capacity change ΔC is less than 30% of the initial value; Internal resistance is less than four times
Self-discharge characteristics	After constant current charging to the rated voltage, charge at constant voltage for 8 hours, then let stand with the circuit open.	Average self-discharge ≤ 1.5mV/day (test period over 30 days)
Cycle charge-discharge life	At 25° C, the capacitor was cyclically charged and discharged 250,000 times between 3.8V and 2.5V using a constant current.	The following requirements must be met: Capacity change ΔC is less than 30% of the initial value; Internal resistance is less than four times
Optimal storage environment	-10°C to 40°C, below 60%RH	

External dimensions



$L \leq 16$	$\alpha = 1.5$
$L > 16$	$\alpha = 2.0$

D	8	10	12.5	16	18	22
d	0.6	0.6	0.6	0.8	0.8	0.8
F	3.5	5	5	7.5	7.5	10

List of Standard Products

series	Rated voltage (V)	Capacitance (F)	Product dimensions: ΦD×L (mm)	ESR (mΩ/20°C, AC 1kHz)	72h Leakage Current (μA)	Continuous current (A)	Peak current (A)	Stored energy (J)	Product Number
SDB	3	1	8x11.5	240	3	0.28	1.10	4.5	SDB3R0L1050812
	3	2	8x13	160	4	0.55	2.03	9.0	SDB3R0L2050813
	3	3.3	8x20	100	6	0.90	3.31	14.9	SDB3R0L3350820
	3	3.3	10x13	100	6	0.90	3.31	14.9	SDB3R0L3351013
	3	5	10x20	80	10	1.34	4.69	22.5	SDB3R0L5051020
	3	7	10x20	80	14	1.80	5.71	31.5	SDB3R0L7051020
	3	10	10x25	70	20	2.48	7.32	45.0	SDB3R0L1061025
	3	10	12.5x20	60	20	2.54	7.89	45.0	SDB3R0L1061320
	3	15	12.5x25	50	30	3.67	10.59	67.5	SDB3R0L1561325
	3	20	12.5x30	40	40	4.84	13.64	90.0	SDB3R0L2061330
	3	25	16x25	30	50	6.12	17.65	112.5	SDB3R0L2561625
	3	30	16x25	30	60	7.09	19.15	135.0	SDB3R0L3061625
	3	35	16x35	28	70	8.11	21.26	157.5	SDB3R0L3561635
	3	40	18x40	26	80	9.15	23.44	180.0	SDB3R0L4061840
	3	50	18x40	24	100	11.03	26.79	225.0	SDB3R0L5061840
	3	60	18x40	22	120	12.89	30.20	270.0	SDB3R0L6061840
	3	70	18x50	20	140	14.79	33.87	315.0	SDB3R0L7061850
	3	100	22x45	18	160	19.48	40.54	450.0	SDB3R0L1072245
	3	120	22x50	16	180	22.84	46.39	540.0	SDB3R0L1272250
3	160	22x55	14	200	28.71	55.05	720.0	SDB3R0L1672255	



SM

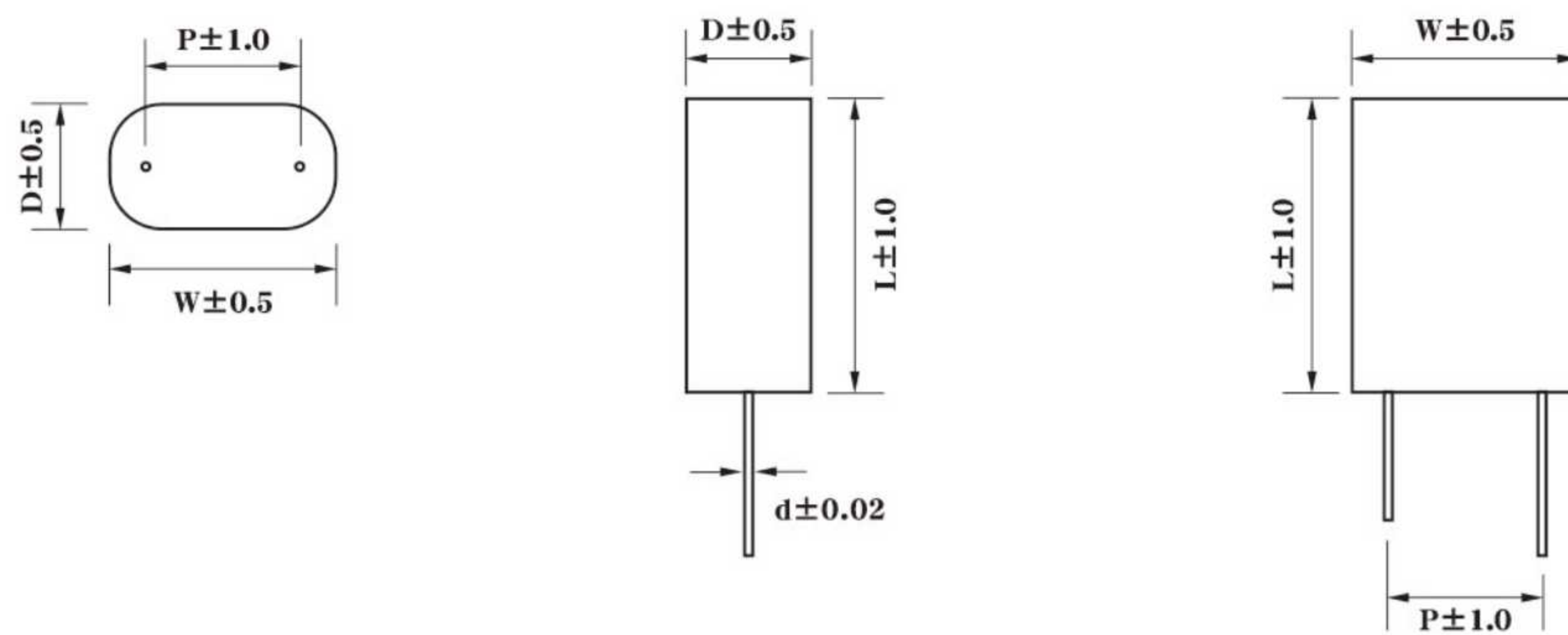
- ◆ Epoxy resin encapsulation
- ◆ High energy/high power/internal series structure
- ◆ Low internal resistance/long charge/discharge cycle life
- ◆ Low leakage current/suitable for use with batteries
- ◆ Customized according to customer needs/meets different performance requirements



■ Main technical parameters

project	characteristic	
Operating temperature range	-40~+70°C / -40~+85°C	
Rated operating voltage	5.5V、6.0V	
Nominal capacity range	0.1F~5.0F	
Normal temperature capacity deviation	-10%~+30% (25°C)	
High temperature load life	After continuously applying the rated voltage at the rated temperature for 1000 hours, the system is returned to 25° C for testing.	The following requirements must be met: Capacity change ΔC is less than 30% of the initial value; Internal resistance is less than four times
Steady-state damp heat life	After continuously applying the rated voltage for 240 hours at 40°C and 90%~95%RH humidity, the test was conducted at 25°C.	The following requirements must be met: Capacity change ΔC is less than 30% of the initial value; Internal resistance is less than four times
Self-discharge characteristics	After constant current charging to the rated voltage, charge at constant voltage for 8 hours, then let stand with the circuit open for 24 hours.	The residual voltage is greater than 80% of the rated voltage.
Cycle charge-discharge life	At 25° C, the capacitor was subjected to 500,000 cyclic charge-discharge cycles between its rated	The following requirements must be met: Capacity change ΔC is less than 30% of the initial value; Internal resistance is less than four times
Optimal storage environment	-10°C to 40°C, below 60%RH	

■ External dimensions



■ Main uses

- ◆ Suitable for smart meters (water, electricity, gas meters), concentrators
- ◆ Smart grids and other supporting equipment

■ List of Standard Products

series	Rated voltage (V)	Capacitance (F)	Product dimensions: ΦD×L (mm)	ESR (mΩ/, AC 1kHz)	72h leakage current (μA)	Product Number		Foot spacing (mm)	Wire diameter (mm)
						5.5V	6.0V		
SM	5.5/6.0	0.1	11.5*6.5*13	1200	2	SM5R5M1041213	SM6R0M1041213	7.0	0.5
	5.5/6.0	0.22	14.0*8.0*13.5	800	2	SM5R5M0041414	SM6R0M0041414	9.0	0.5
	5.5/6.0	0.33	14.0*8.0*13.5	800	2	SM5R5M3341414	SM6R0M3341414	9.0	0.5
	5.5/6.0	0.5	17.5*9.5*16.0	400	2	SM5R5M5041816	SM6R0M5041816	11.5	0.6
	5.5/6.0	1	18.0*9.5*20	240	4	SM5R5M1051820	SM6R0M1051820	11.5	0.6
	5.5/6.0	1.5	18.0*9.5*23.6	200	6	SM5R5M1551824	SM6R0M1551824	11.5	0.6
	5.5/6.0	2.5	21.5*11.0*24.0	140	10	SM5R5M2552224	SM6R0M2552224	15.5	0.6
	5.5/6.0	3.5	21.5*11.0*24.0	120	15	SM5R5M3552224	SM6R0M3552224	15.5	0.6
	5.5/6.0	5	22.0*11.5*28.5	100	20	SM5R5M5052229	SM6R0M5052229	15.5	0.6

SDM SERIES MODULE INFORMATION



SDM5.4V60FSEA

Rated Voltage(V) 5.4
 DC Internal Resistance(mΩ) ≤75
 Nominal Capacitance(F) 60
 Max Stored Energy(Wh) 0.24



SDM5.4V80FSEA

Rated Voltage(V) 5.4
 DC internal Resistance(mΩ) ≤60
 Nominal Capacitance(F) 80
 Max Stored Energy(Wh) 0.32



SDM5.4V120FRCB

Rated Voltage(V) 5.4
 DC Internal Resistance(mΩ) ≤20
 Nominal Capacitance(F) 120
 Max Stored Energy(Wh) 0.49



SDM5.4V165FRCB

Rated Voltage(V) 5.4
 DC Internal Resistance(mΩ) ≤45
 Nominal Capacitance(F) 165
 Max Stored Energy(Wh) 0.67



SDM6V5FRCA

Rated Voltage(V) 6
 DC Internal Resistance(mΩ) ≤180
 Nominal Capacitance(F) 5
 Max Stored Energy(Wh) 0.03



SDM6V60FRCA

Rated Voltage(V) 6
 DC Internal Resistance(mΩ) ≤48
 Nominal Capacitance(F) 60
 Max Stored Energy(Wh) 0.3



SDM6V80FRCA

Rated Voltage(V) 6
 DC Internal Resistance(mΩ) ≤42
 Nominal Capacitance(F) 80
 Max Stored Energy(Wh) 0.4



SDM9V3.3FRCA

Rated Voltage(V) 9
 DC Internal Resistance(mΩ) ≤270
 Nominal Capacitance(F) 3.3
 Max Stored Energy(Wh) 0.04



SDM9V53FRCA

Rated Voltage(V) 9
 DC Internal Resistance(mΩ) ≤70
 Nominal Capacitance(F) 53
 Max Stored Energy(Wh) 0.6



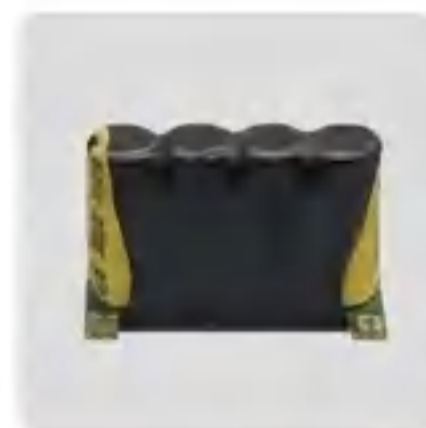
SDM10.8V40FREA

Rated Voltage(V) 10.8
 DC Internal Resistance(mΩ) ≤120
 Nominal Capacitance(F) 40
 Max Stored Energy(Wh) 0.65



SDM10V117FREA

Rated Voltage(V) 10
 DC Internal Resistance(mΩ) ≤53
 Nominal Capacitance(F) 117
 Max Stored Energy(Wh) 1.63



SDM12V2.5FRCA

Rated Voltage(V) 12
 DC Internal Resistance(mΩ) ≤390
 Nominal Capacitance(F) 2.5
 Max Stored Energy(Wh) 0.05

SDM SERIES MODULE INFORMATION



SDM12V3.5FRCA

Rated Voltage (V) 12
 DC Internal Resistance(mΩ) ≤270
 Nominal Capacitance (F) 3.5
 Max. Stored Energy (Wh) 0.07



SDM12V40FRCA

Rated Voltage (V) 12
 DC Internal Resistance(mΩ) ≤200
 Nominal Capacitance (F) 40
 Max. Stored Energy (Wh) 0.8



SDM13.5V5FREB

Rated Voltage (V) 13.5
 DC Internal Resistance(mΩ) ≤230
 Nominal Capacitance (F) 5
 Max. Stored Energy (Wh) 0.13



SDM14V26FTDA

Rated Voltage (V) 14
 DC Internal Resistance(mΩ) ≤150
 Nominal Capacitance (F) 26
 Max. Stored Energy (Wh) 0.71



SDM14V78FTDA

Rated Voltage (V) 14
 DC Internal Resistance (mΩ) ≤75
 Nominal Capacitance (F) 78
 Max. Stored Energy (Wh) 0.17



SDM27V6FLYA

Rated Voltage (V) 27
 DC Internal Resistance (mΩ) ≤240
 Nominal Capacitance (F) 6
 Max. Stored Energy (Wh) 0.61



SDM27V20FRYA

Rated Voltage (V) 27
 DC Internal Resistance (mΩ) ≤130
 Nominal Capacitance (F) 20
 Max. Stored Energy (Wh) 2.03



SDM29.7V13.6FRYA

Rated Voltage (V) 29.7
 DC Internal Resistance (mΩ) ≤150
 Nominal Capacitance (F) 13.6
 Max. Stored Energy (Wh) 1.67



SDM30V5FRYA

Rated Voltage (V) 30
 DC Internal Resistance ≤300
 Nominal Capacitance (F) 5
 Max. Stored Energy (Wh) 0.63



SDM30V5FRYB

Rated Voltage (V) 30
 DC Internal Resistance ≤280
 Nominal Capacitance (F) 5
 Max. Stored Energy (Wh) 0.63



SDM30V6FRYA

Rated Voltage (V) 30
 DC Internal Resistance ≤270
 Nominal Capacitance (F) 6
 Max. Stored Energy (Wh) 0.75



SDM30V11FRYA-E2512

Rated Voltage (V) 30
 DC Internal Resistance ≤195
 Nominal Capacitance (F) 11
 Max. Stored Energy (Wh) 1.38

SDM SERIES MODULE INFORMATION



SDM32V20FRYA

Rated Voltage(V) 32
 DC Internal Resistance(mΩ) ≤140
 Nominal Capacitance(F) 20
 Max. Stored Energy(Wh) 2.84



SDM48V0.9FLYB

Rated Voltage(V) 48
 DC Internal Resistance(mΩ) ≤950
 Nominal Capacitance(F) 0.9
 Max. Stored Energy(Wh) 0.29



SDM48V10FTDA

Rated Voltage(V) 48
 DC Internal Resistance(mΩ) <335
 Nominal Capacitance(F) 10
 Max. Stored Energy(Wh) 3.2



SDM54V55FTDA

Rated Voltage(V) 54
 DC Internal Resistance(mΩ) ≤50
 Nominal Capacitance(F) 55
 Max. Stored Energy(Wh) 22.28



SDM60V8FTDAB

Rated Voltage(V) 60
 DC Internal Resistance(mΩ) ≤300
 Nominal Capacitance(F) 8
 Max. Stored Energy(Wh) 4



SDM64V80FTDA

Rated Voltage(V) 64
 DC Internal Resistance(mΩ) ≤68
 Nominal Capacitance(F) 80
 Max. Stored Energy(Wh) 45.51



SDM160V10FTDAB

Rated Voltage(V) 160
 DC Internal Resistance(mΩ) ≤220
 Nominal Capacitance(F) 10
 Max. Stored Energy(Wh) 35.56

SLM SERIES MODULE INFORMATION



SLM7.6V1100FREA

Rated Voltage (V) 7.6
 DC Internal Resistance (mΩ) ≤180
 Nominal Capacitance (F) 1100
 Max Stored Energy (Wh) 5.2



SLM7.6V3300FRCA

Rated Voltage (V) 7.6
 DC Internal Resistance (mΩ) ≤160
 Nominal Capacitance (F) 3300
 Max Stored Energy (Wh) 17



SLM12V250FREA

Rated Voltage (V) 12
 DC Internal Resistance (mΩ) ≤150
 Nominal Capacitance (F) 250
 Max Stored Energy (Wh) 2.55



SLM27V107FREA

Rated Voltage (V) 27
 DC Internal Resistance (mΩ) ≤300
 Nominal Capacitance (F) 107
 Max Stored Energy (Wh) 6.3



SLM28V35.7FRDA

Rated Voltage (V) 28
 DC Internal Resistance (mΩ) ≤600
 Nominal Capacitance (F) 35.7
 Max Stored Energy (Wh) 2.28



SLM48V11.5FRDA

Rated Voltage (V) 48
 DC Internal Resistance (mΩ) ≤2250
 Nominal Capacitance (F) 11.5
 Max Stored Energy (Wh) 2.2



SLM64V40WHTDB

Rated Voltage (V) 64
 DC Internal Resistance (mΩ) ≤220
 Nominal Capacitance (F) 187.5
 Max Stored Energy (Wh) 40



MDP

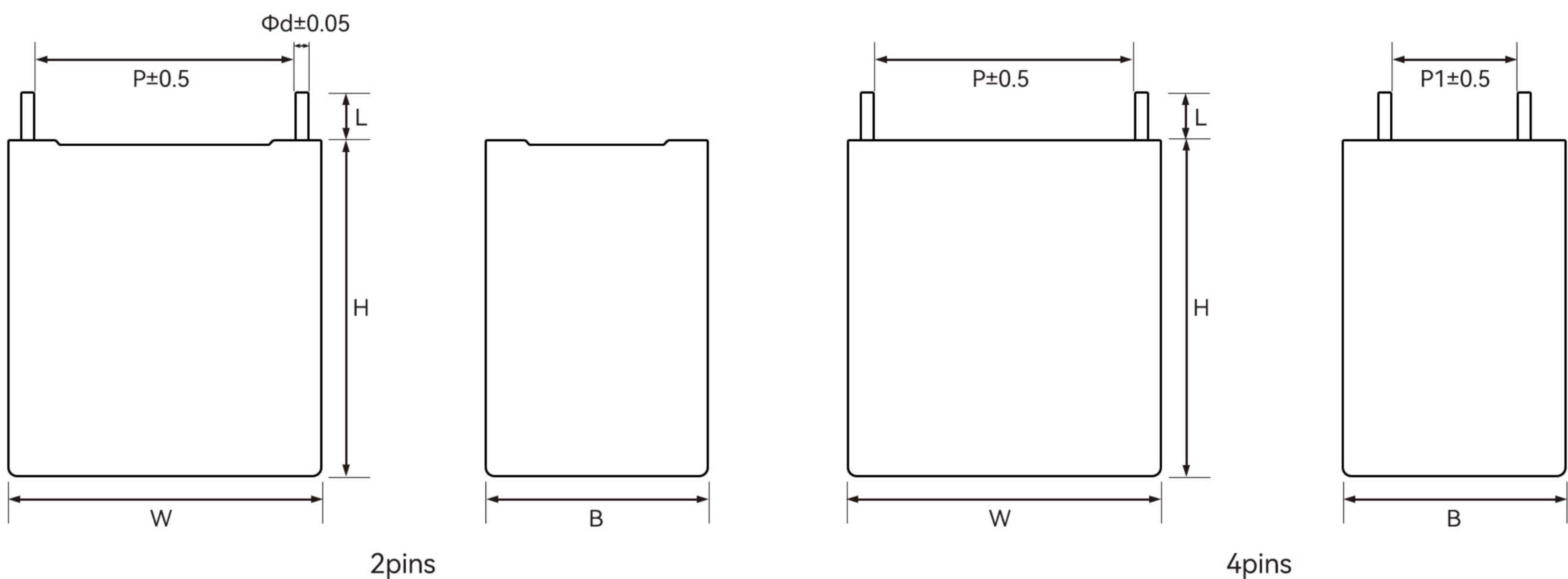
- ◆ DC-LINK capacitors for PCBs
- ◆ Metallized polypropylene film structure
- ◆ Plastic shell encapsulation, epoxy resin filling (UL94 V-0)
- ◆ Excellent electrical performance
- ◆ Application Areas
 - ◇ Solar inverters ◇ Uninterruptible power supplies ◇ Military and high-end power supplies
 - ◇ On-board chargers and charging stations



■ Main technical parameters

project	characteristic
Reference Standards	GB/T 17702 (IEC 61071)
Rated Voltage	500Vd.c.~1600Vd.c.
Capacity Range	5 μ F~190 μ F
Climate Category	40/85/56,40/105/56
Operating Temperature Range	-40°C~105°C
Capacity Tolerance	$\pm 5\%$ (J), $\pm 10\%$ (K)
Withstand Voltage	1.5U _N (10s, 20°C \pm 5°C)
Insulation Resistance	$\geq 10000s$ (20°C, 100Vd.c., 60s)
Self-Inductance (Ls)	< 1nH/mm 引线间距
Dielectric Loss Tangent	0.0002
Maximum Peak Current (A)	$\square = C \times dv/dt$
Non-Repeatable Peak Current	1.4 \square (寿命期间1000次)
Overvoltage	1.1U _N (有载持续时间的30%/d)
	1.15 U _N (30min/d)
	1.2 U _N (5min/d)
	1.3 U _N (1min/d)
	1.5U _N (it is permissible to experience 1000 overvoltage events of 1.5U _N each, lasting 30ms.)
Life expectancy	100000h@U _N , 70°C, $\Theta_{hs}=85^\circ\text{C}$
Failure Rate	$\leq 300\text{FIT}@U_N, 70^\circ\text{C}, \Theta_{hs}=85^\circ\text{C}$

■ Product Dimensions



Note: Product dimensions are in mm. Please refer to the "Product Dimension Table" for specific dimensions.



List of Standard Products

Rated voltage	C _N (μF)	W±1 (mm)	H±1 (mm)	T±1 (mm)	P (mm)	P1 (mm)	d±0.05 (mm)	dv/dt (V/μs)	tanδ(×10 ⁻⁴)		ESR@10kHz (mΩ)	I _{max} (A)	Product Code
									1kHz	10kHz			
500Vdc	5.0	32.0	20.0	11.0	27.5	-	0.8	67	9.5	98	21.9	5.1	MDP501505*322011++RN
	10	32.0	24.5	15.0	27.5	-	0.8	67	9.5	98	11.5	6.6	MDP501106*322415++RN
	22	32.0	37.0	22.0	27.5	10.2	0.8	67	9.5	98	5.8	10.1	MDP501226*323722++RY
	30	42.0	40.0	20.0	37.5	10.2	1.0	32	14	148	7.9	12.6	MDP501306*424020++SY
	35	42.0	37.0	28.0	37.5	10.2	1.0	32	14	148	8	13.6	MDP501356*423728++SY
	40	42.0	37.0	28.0	37.5	10.2	1.0	32	14	148	4.9	14.6	MDP501406*423728++SY
	40	42.0	44.0	24.0	37.5	10.2	1.0	32	16	148	4.9	14.6	MDP501406*424424++SY
	50	42.0	43.0	28.0	37.5	10.2	1.2	32	14	148	4	16.1	MDP501506*424328++SY
	50	42.0	45.0	30.0	37.5	20.3	1.2	32	14	148	5.1	16.1	MDP501506*424530++SR
	55	42.0	45.0	30.0	37.5	20.3	1.2	32	14	148	3.9	16.2	MDP501556*424530++SR
	60	42.0	45.0	30.0	37.5	20.3	1.2	12	14	150	4.3	20.1	MDP501606*424530++SR
	65	42.0	46.0	35.0	37.5	20.3	1.2	32	14	150	4.1	16.7	MDP501656*424635++SR
	70	42.0	50.0	35.0	37.5	20.3	1.2	32	15	155	3.9	17.5	MDP501706*425035++SR
	75	57.5	45.0	30.0	52.5	12.7	1.2	17	34	345	5.5	16.1	MDP501756*574530++WJ
	75	57.5	45.0	30.0	52.5	20.3	1.2	17	34	345	5.4	16.1	MDP501756*574530++WR
	80	57.5	45.0	30.0	52.5	20.3	1.2	17	34	345	5.4	16.2	MDP501806*574530++WR
	90	42.0	55.0	40.0	37.5	20.3	1.2	32	15	170	3.4	20	MDP501906*425540++SR
	100	57.5	50.0	35.0	52.5	20.3	1.2	17	34	345	4	18.1	MDP501107*575035++WR
	110	57.5	50.0	35.0	52.5	20.3	1.2	17	34	345	4	19.1	MDP501117*575035++WR
	120	42.0	62.0	45.0	37.5	20.3	1.2	32	14	145	3.7	22.5	MDP501127*426245++SR
120	57.5	56.0	35.0	52.5	20.3	1.2	17	34	345	3.8	19.5	MDP501127*575635++WR	
150	57.5	55.0	45.0	52.5	20.3	1.2	17	34	345	3.7	23	MDP501157*575545++WR	
150	57.5	64.5	35.0	52.5	20.3	1.2	17	34	345	3.7	22	MDP501157*576435++WR	
160	57.5	70.0	35.0	52.5	20.3	1.2	17	34	345	3.7	26	MDP501167*577035++WR	
190	57.5	64.5	45.0	52.5	20.3	1.2	17	34	345	3.7	30	MDP501197*576445++WR	
190	57.5	80.0	35.0	52.5	20.3	1.2	17	34	345	3.7	30	MDP501197*578035++WR	
260	57.5	78.0	50.0	52.5	20.3	1.2	17	34	345	2.9	35	MDP501267*577835++WR	
600Vdc	2.0	32.0	18.0	9.0	27.5	-	0.8	67	11	98	47.8	2.9	MDP601205*321809++RN
	3.0	32.0	20.0	11.0	27.5	-	0.8	67	11	98	31.8	4.2	MDP601305*322011++RN
	4.0	32.0	20.0	11.0	27.5	-	0.8	67	11	98	23.9	5.6	MDP601405*322011++RN
	5.0	32.0	22.0	13.0	27.5	-	0.8	67	11	98	19	7	MDP601505*322213++RN
	6.0	32.0	24.5	15.0	27.5	-	0.8	67	11	98	18.6	7.2	MDP601605*322415++RN
	7.0	32.0	24.5	15.0	27.5	-	0.8	67	11	98	15.8	8.3	MDP601705*322415++RN
	8.0	32.0	28.0	14.0	27.5	-	0.8	67	11	98	13.8	9.6	MDP601805*322814++RN
	9.0	32.0	30.0	16.0	27.5	-	0.8	67	11	98	12.4	10.8	MDP601905*323016++RN
	10	32.0	30.0	16.0	27.5	-	0.8	67	11	98	11	11	MDP601106*323016++RN
	12	32.0	33.0	18.0	27.5	-	0.8	67	11	98	10.8	12	MDP601126*323318++RN
	15	32.0	37.0	22.0	27.5	-	0.8	67	11	98	9	12.2	MDP601156*323722++RN
	15	32.0	37.0	22.0	27.5	10.2	0.8	67	11	98	7.4	16,7	MDP601156*323722++RY
	18	32.0	37.0	22.0	27.5	-	0.8	67	11	98	6.2	12.2	MDP601186*323722++RN
	18	32.0	37.0	22.0	27.5	10.2	0.8	67	10.5	98	7.9	12.2	MDP601186*323722++RY
	20	42.0	40.0	20.0	37.5	10.2	1.0	32	19.5	170	9.8	12.3	MDP601206*424020++SY
	22	42.0	40.0	20.0	37.5	10.2	1.0	32	19.5	170	8.9	13.5	MDP601226*424020++SY

Note: "*" indicates the product's capacity deviation, J=±5%, K=±10%, "++" indicates the internal number.



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List of Standard Products

Rated voltage	CN (μF)	W±1 (mm)	H±1 (mm)	T±1 (mm)	P (mm)	P1 (mm)	d±0.05 (mm)	dv/dt (V/μs)	tanδ(×10 ⁻⁴)		ESR@10kHz (mΩ)	I _{max} (A)	Product Code
									1kHz	10kHz			
600Vdc	25	42.0	40.0	20.0	37.5	10.2	1.0	32	19.5	170	7.7	15.5	MDP601256*424020++SY
	30	42.0	37.0	28.0	37.5	10.2	1.0	32	19.5	170	6.4	18.6	MDP601306*423728++SY
	30	42.0	44.0	24.0	37.5	12.7	1.0	32	19.5	170	6.4	18.6	MDP601306*424424++SJ
	35	42.0	45.0	30.0	37.5	12.7	1.2	32	19.5	170	6	20.2	MDP601356*424530++SJ
	35	42.0	45.0	30.0	37.5	20.3	1.2	32	19.5	170	6	20.2	MDP601356*424530++SR
	40	42.0	45.0	30.0	37.5	12.7	1.2	32	19.5	170	5.1	23.2	MDP601406*424530++SJ
	40	42.0	45.0	30.0	37.5	20.3	1.2	32	19.5	170	5.1	23.2	MDP601406*424530++SR
	40	57.5	45.0	25.0	52.5	12.7	1.2	17	35	345	9.8	12.5	MDP601406*574525++WJ
	45	42.0	50.0	35.0	37.5	12.7	1.2	32	19.5	170	4.6	26	MDP601456*425035++SJ
	45	42.0	50.0	35.0	37.5	20.3	1.2	32	19.5	170	4.6	26	MDP601456*425035++SR
	45	57.5	45.0	25.0	52.5	12.7	1.2	17	35	345	8.7	14	MDP601456*574525++WJ
	50	42.0	50.0	35.0	37.5	20.3	1.2	32	19.5	170	4.1	28.7	MDP601506*425035++SR
	50	42.0	46.0	35.0	37.5	20.3	1.2	32	19.5	170	4.1	28.7	MDP601506*424635++SR
	50	57.5	45.0	25.0	52.5	12.7	1.2	17	35	345	7.8	15.5	MDP601506*574525++WJ
	55	42.0	50.0	35.0	37.5	20.3	1.2	32	19.5	170	3.7	31.7	MDP601556*425035++SR
	55	57.5	45.0	30.0	52.5	12.7	1.2	17	35	345	7.1	17	MDP601556*574530++WJ
	55	57.5	45.0	30.0	52.5	20.3	1.2	17	35	345	7.1	17	MDP601556*574530++WR
	60	42.0	55.0	40.0	37.5	20.3	1.2	32	19.5	170	3.5	34.7	MDP601606*425540++SR
	60	57.5	45.0	30.0	52.5	20.3	1.2	17	35	345	6.5	18.7	MDP601606*574530++WR
	65	42.0	55.0	40.0	37.5	20.3	1.2	32	19.5	170	3.2	35	MDP601656*425540++SR
	65	57.5	50.0	35.0	52.5	12.7	1.2	17	35	345	6	20.2	MDP601656*575035++WJ
	65	57.5	50.0	35.0	52.5	20.3	1.2	17	35	345	6	20.2	MDP601656*575035++WR
	70	42.0	55.0	40.0	37.5	20.3	1.2	32	19.5	170	3	35	MDP601706*425540++SR
	70	57.5	50.0	35.0	52.5	20.3	1.2	17	35	345	5.6	21.5	MDP601706*575035++WR
	75	42.0	62.0	45.0	37.5	20.3	1.2	32	19.5	170	2.8	35	MDP601756*426245++SR
	75	57.5	50.0	35.0	52.5	20.3	1.2	17	35	345	5.2	23.3	MDP601756*575035++WR
	80	42.0	62.0	45.0	37.5	20.3	1.2	32	19.5	170	2.6	35	MDP601806*426245++SR
	80	57.5	50.0	35.0	52.5	20.3	1.2	17	35	345	4.9	24.8	MDP601806*575035++WR
	85	42.0	62.0	45.0	37.5	20.3	1.2	32	19.5	170	2.5	35.2	MDP601856*426245++SR
	85	57.5	55.0	45.0	52.5	20.3	1.2	17	35	345	4.8	25.3	MDP601856*575545++WR
90	57.5	55.0	45.0	52.5	20.3	1.2	17	35	345	4.5	25.9	MDP601906*575545++WR	
95	57.5	55.0	45.0	52.5	20.3	1.2	17	35	345	4.4	27.5	MDP601956*575545++WR	
100	57.5	55.0	45.0	52.5	20.3	1.2	17	35	345	4.1	28.8	MDP601107*575545++WR	
110	57.5	55.0	45.0	52.5	20.3	1.2	17	35	345	3.8	31.7	MDP601117*575545++WR	
120	57.5	64.5	45.0	52.5	20.3	1.2	17	35	345	3.4	34.6	MDP601127*576445++WR	
130	57.5	64.5	45.0	52.5	20.3	1.2	17	35	345	3.2	35	MDP601137*576445++WR	
140	57.5	64.5	45.0	52.5	20.3	1.2	17	35	345	3	35	MDP601147*576445++WR	
200	57.5	78.0	50.0	52.5	20.3	1.2	17	35	345	2.5	35	MDP601207*577850++WR	
800Vdc	2.0	32.0	18.0	9.0	27.5	-	0.8	65	10	95	45.4	2.9	MDP801205*321809++RN
	3.0	32.0	20.0	11.0	27.5	-	0.8	65	10	95	30.3	4.4	MDP801305*322011++RN
	3.3	32.0	30.0	16.0	27.5	-	0.8	65	10	95	18.8	7	MDP801335*323016++RN
	4.0	32.0	25.0	13.0	27.5	-	0.8	65	10	95	22.7	5.8	MDP801405*322513++RN

Note: "*" indicates the product's capacity deviation, J=±5%, K=±10%, "++" indicates the internal number.

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List of Standard Products

Rated voltage	C _N (μF)	W±1 (mm)	H±1 (mm)	T±1 (mm)	P (mm)	P1 (mm)	d±0.05 (mm)	dv/dt (V/μs)	tanδ(×10 ⁻⁴)		ESR@10kHz (mΩ)	I _{max} (A)	Product Code
									1kHz	10kHz			
800Vdc	5.0	32.0	24.5	15.0	27.5	-	0.8	65	10	95	18.2	7.3	MDP801505*322415+++RN
	6.0	32.0	30.0	16.0	27.5	-	0.8	65	10	95	15.1	8.7	MDP801605*323016+++RN
	7.0	32.0	30.0	16.0	27.5	-	0.8	65	10	95	13	10.2	MDP801705*323016+++RN
	8.0	32.0	33.0	18.0	27.5	-	0.8	65	10	95	12.5	10.5	MDP801805*323318+++RN
	8.0	41.0	30.0	16.0	37.5	-	1.0	30	18	160	22.3	5.4	MDP801805*413016+++SN
	9.0	32.0	33.0	18.0	27.5	-	0.8	65	10	95	11.1	11.8	MDP801905*323318+++RN
	9.0	41.0	30.0	16.0	37.5	-	1.0	30	18	160	19.8	6.1	MDP801905*413016+++SN
	10	32.0	37.0	22.0	27.5	-	0.8	65	10	95	11	12	MDP801106*323722+++RN
	10	32.0	37.0	22.0	27.5	10.2	0.8	65	10	95	9.1	14.5	MDP801106*323722+++RY
	10	41.0	33.5	18.5	37.5	-	1.0	30	18	160	17.8	6.7	MDP801106*413318+++SN
	11	32.0	37.0	22.0	27.5	-	0.8	65	10	95	10	12	MDP801116*323722+++RN
	11	32.0	37.0	22.0	27.5	10.2	0.8	65	10	95	8.3	16	MDP801116*323722+++RY
	12	32.0	37.0	22.0	27.5	-	0.8	65	10	95	9.3	12	MDP801126*323722+++RN
	12	32.0	37.0	22.0	27.5	10.2	0.8	65	10	95	7.6	16	MDP801126*323722+++RY
	12	41.0	33.5	18.5	37.5	-	1.0	30	18	160	14.9	8.1	MDP801126*413318+++SN
	13	32.0	37.0	22.0	27.5	-	0.8	65	10	95	8.8	12	MDP801136*323722+++RN
	13	32.0	37.0	22.0	27.5	12.7	0.8	65	10	95	8.1	16.2	MDP801136*323722+++RJ
	14	32.0	37.0	22.0	27.5	-	0.8	65	10	95	8.2	12	MDP801146*323722+++RN
	14	32.0	37.0	22.0	27.5	10.2	0.8	65	10	95	7.6	16.5	MDP801146*323722+++RY
	14	41.0	33.5	18.5	37.5	-	1.0	30	18	160	13.8	9.4	MDP801146*413318+++SN
	15	42.0	40.0	20.0	37.5	10.2	1.0	32	18	160	11.8	10.2	MDP801156*424020+++SY
	20	42.0	44.0	24.0	37.5	12.7	1.0	32	18	160	8.9	13.5	MDP801206*424424+++SJ
	25	42.0	44.0	24.0	37.5	12.7	1.0	32	18	160	7.1	16.8	MDP801256*424424+++SJ
	25	57.5	45.0	25.0	52.5	12.7	1.2	15	33	320	14.3	8.4	MDP801256*574525+++WJ
	30	42.0	45.0	30.0	37.5	12.7	1.2	30	18	160	5.9	20.2	MDP801306*424530+++SJ
	30	42.0	45.0	30.0	37.5	20.3	1.2	30	18	160	5.9	20.2	MDP801306*424530+++SR
	30	57.5	45.0	25.0	52.5	12.7	1.2	15	33	320	11.9	10.1	MDP801306*574525+++WJ
	35	42.0	50.0	35.0	37.5	20.3	1.2	30	18	160	5.5	22	MDP801356*425035+++SR
	35	57.5	45.0	25.0	52.5	12.7	1.2	15	33	320	10.2	11.8	MDP801356*574525+++WJ
	40	42.0	50.0	35.0	37.5	20.3	1.2	30	18	160	4.8	25.1	MDP801406*425035+++SR
	40	57.5	44.0	30.0	52.5	12.7	1.2	15	33	320	8.9	13.5	MDP801406*574430+++WJ
	40	57.5	44.0	30.0	52.5	20.3	1.2	15	33	320	8.9	13.5	MDP801406*574430+++WR
	45	42.0	55.0	40.0	37.5	20.3	1.2	30	18	160	4.2	28.3	MDP801456*425540+++SR
45	57.5	44.0	30.0	52.5	12.7	1.2	15	33	320	7.9	15.1	MDP801456*574430+++WJ	
45	57.5	44.0	30.0	52.5	20.3	1.2	15	33	320	7.9	15.1	MDP801456*574430+++WR	
50	42.0	55.0	40.0	37.5	20.3	1.2	30	18	160	3.8	31.4	MDP801506*425540+++SR	
50	57.5	50.0	35.0	52.5	12.7	1.2	15	33	320	7.1	16.8	MDP801506*575035+++WJ	
50	57.5	50.0	35.0	52.5	20.3	1.2	15	33	320	7.1	16.8	MDP801506*575035+++WR	
55	42.0	60.0	45.0	37.5	20.3	1.2	30	18	160	3.5	34.5	MDP801556*426045+++SR	
55	57.5	50.0	35.0	52.5	20.3	1.2	15	33	320	6.5	18.5	MDP801556*575035+++WR	
60	42.0	62.0	45.0	37.5	20.3	1.2	32	18	160	2.8	35.1	MDP801606*426245+++SR	
60	57.5	50.0	35.0	52.5	20.3	1.2	15	33	320	5.9	20.2	MDP801606*575035+++WR	
65	42.0	62.0	45.0	37.5	20.3	1.2	32	18	160	2.9	35	MDP801656*426245+++SR	

Note: "*" indicates the product's capacity deviation, J=±5%, K=±10%, "++" indicates the internal number.



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List of Standard Products

Rated voltage	C _N (μF)	W±1 (mm)	H±1 (mm)	T±1 (mm)	P (mm)	P1 (mm)	d±0.05 (mm)	dv/dt (V/μs)	tanδ(×10 ⁻⁴)		ESR@10kHz (mΩ)	I _{max} (A)	Product Code
									1kHz	10kHz			
800Vdc	65	57.5	55.0	45.0	52.5	20.3	1.2	15	33	320	5.5	21.9	MDP801656*575545++WR
	70	42.0	62.0	45.0	37.5	20.3	1.2	32	20	170	2.8	35	MDP801706*426245++SR
	70	57.5	55.0	45.0	52.5	20.3	1.2	15	33	320	5.1	23.6	MDP801706*575545++WR
	75	42.0	62.0	45.0	37.5	20.3	1.2	32	20	170	2.8	35	MDP801756*426245++SR
	75	57.5	55.0	45.0	52.5	20.3	1.2	15	33	320	4.8	25.2	MDP801756*575545++WR
	80	57.5	55.0	45.0	52.5	20.3	1.2	15	33	320	4.6	25.9	MDP801806*575545++WR
	85	57.5	55.0	45.0	52.5	20.3	1.2	15	33	320	4.5	26.7	MDP801856*575545++WR
	90	57.5	64.5	35.0	52.5	20.3	1.2	17	32	318	4.1	28.4	MDP801906*576435++WR
	90	57.5	55.0	45.0	52.5	20.3	1.2	15	32	318	4	29.8	MDP801906*575545++WR
	95	57.5	64.5	45.0	52.5	20.3	1.2	15	33	320	4	29.8	MDP801956*576445++WR
	100	57.5	64.5	45.0	52.5	20.3	1.2	14	20	225	3.7	31.5	MDP801107*576445++WR
	110	57.5	64.5	45.0	52.5	20.3	1.2	15	20	230	3.9	34.5	MDP801117*576445++WR
	120	57.5	64.5	45.0	52.5	20.3	1.2	17	32	318	3.7	31.5	MDP801127*576445++WR
	120	57.5	80.0	35.0	52.5	20.3	1.2	17	32	318	3.7	31.5	MDP801127*578035++WR
160	57.5	78.0	50.0	52.5	20.3	1.2	17	32	318	2.9	35	MDP801167*577850++WR	
900Vdc	1.0	32.0	18.0	9.0	27.5	-	0.8	70	9	90	86	1.5	MDP901105*321809++RN
	2.0	32.0	20.0	11.0	27.5	-	0.8	70	9	90	43	3.1	MDP901205*322011++RN
	3.0	32.0	22.0	13.0	27.5	-	0.8	70	9	90	28.7	4.6	MDP901305*322213++RN
	4.0	32.0	24.5	15.0	27.5	-	0.8	70	9	90	21.5	6.1	MDP901405*322415++RN
	4.7	41.0	26.0	15.0	37.5	-	1.0	35	17	150	35.6	3.4	MDP901475*412615++SN
	5.0	32.0	30.0	16.0	27.5	-	0.8	70	9	90	17.2	7.7	MDP901505*323016++RN
	5.0	41.0	30.0	16.0	37.5	-	1.0	35	17	150	33.4	3.6	MDP901505*413016++SN
	6.0	32.0	33.0	18.0	27.5	-	0.8	70	9	90	18	6.9	MDP901605*323318++RN
	6.0	41.0	30.0	16.0	37.5	-	1.0	35	17	150	27.9	4.3	MDP901605*413016++SN
	7.0	32.0	33.0	18.0	27.5	-	0.8	70	9	90	13	10.2	MDP901705*323318++RN
	7.0	41.0	30.0	16.0	37.5	-	1.0	35	17	150	23.9	5	MDP901705*413016++SN
	8.0	32.0	37.0	22.0	27.5	-	0.8	70	9	90	11.5	11.4	MDP901805*323722++RN
	8.0	32.0	37.0	22.0	27.5	10.2	0.8	70	9	90	10.7	12.3	MDP901805*323722++RY
	8.0	41.0	33.0	18.0	37.5	-	1.0	35	17	150	20.9	5.7	MDP901805*413318++SN
	9.0	32.0	37.0	22.0	27.5	-	0.8	70	9	90	10.4	12	MDP901905*323722++RN
	9.0	32.0	37.0	22.0	27.5	12.7	0.8	70	9	90	9.6	13.8	MDP901905*323722++RJ
	10	32.0	37.0	22.0	27.5	10.2	0.8	70	9	90	8.5	15.5	MDP901106*323722++RY
	10	32.0	37.0	22.0	27.5	12.7	0.8	70	9	90	8.6	15.4	MDP901106*323722++RJ
	10	42.0	40.0	20.0	37.5	10.2	1.0	35	17	150	16.7	7.2	MDP901106*424020++SY
	11	42.0	40.0	20.0	37.5	10.2	1.0	35	17	150	16.5	7.4	MDP901116*424020++SY
	12	41.0	37.0	22.0	37.5	10.2	1.0	35	17	150	13.9	8.6	MDP901126*413722++SY
	15	42.0	37.0	28.0	37.5	10.2	1.0	35	17	150	11	10.9	MDP901156*423728++SY
	15	42.0	44.0	24.0	37.5	10.2	1.0	35	17	150	11	10.9	MDP901156*424424++SY
	15	57.5	45.0	25.0	52.5	10.2	1.2	15	31	300	22.3	5.4	MDP901156*574525++WY
18	42.0	44.0	24.0	37.5	12.7	1.0	35	17	150	9.3	12.9	MDP901186*424424++SJ	
20	42.0	44.0	24.0	37.5	12.7	1.0	35	17	150	8.4	14.4	MDP901206*424424++SJ	
20	57.5	45.0	25.0	52.5	12.7	1.2	15	31	300	16.7	7.2	MDP901206*574525++WJ	
25	42.0	45.0	30.0	37.5	12.7	1.2	35	17	150	6.7	17.9	MDP901256*424530++SJ	

Note: "*" indicates the product's capacity deviation, J=±5%, K=±10%, "++" indicates the internal number.



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List of Standard Products

Rated voltage	C _N (μF)	W±1 (mm)	H±1 (mm)	T±1 (mm)	P (mm)	P1 (mm)	d±0.05 (mm)	dv/dt (V/μs)	tanδ(×10 ⁻⁴)		ESR@10kHz (mΩ)	I _{max} (A)	Product Code
									1kHz	10kHz			
900Vdc	25	42.0	45.0	30.0	37.5	20.3	1.2	35	17	150	6.7	17.9	MDP901256*424530++SR
	25	57.5	45.0	25.0	52.5	12.7	1.2	15	31	300	13.4	9	MDP901256*574525++WJ
	30	42.0	46.0	35.0	37.5	20.3	1.2	35	17	150	5.5	21.6	MDP901306*424635++SR
	30	42.0	50.0	35.0	37.5	20.3	1.2	35	17	150	5.5	21.6	MDP901306*425035++SR
	30	57.5	44.0	30.0	52.5	12.7	1.2	15	31	300	11.1	10.8	MDP901306*574430++WJ
	30	57.5	44.0	30.0	52.5	20.3	1.2	15	31	300	11.1	10.8	MDP901306*574430++WR
	35	42.0	55.0	40.0	37.5	20.3	1.2	35	17	150	5.1	23.4	MDP901356*425540++SR
	35	57.5	45.0	30.0	52.5	12.7	1.2	15	31	300	9.5	12.7	MDP901356*574530++WJ
	35	57.5	45.0	30.0	52.5	20.3	1.2	15	31	300	9.5	12.7	MDP901356*574530++WR
	40	42.0	55.0	40.0	37.5	20.3	1.2	35	17	150	4.4	26.9	MDP901406*425540++SR
	40	57.5	50.0	35.0	52.5	20.3	1.2	16	17	180	7.6	17.5	MDP901406*575035++WR
	45	42.0	60.0	45.0	37.5	20.3	1.2	35	17	150	4	30.1	MDP901456*426045++SR
	45	57.5	50.0	35.0	52.5	20.3	1.2	15	31	300	7.4	16.1	MDP901456*575035++WR
	50	42.0	62.0	45.0	37.5	20.3	1.2	35	17	150	3.6	33.6	MDP901506*426245++SR
	50	57.5	50.0	35.0	52.5	20.3	1.2	17	30.5	298	6.5	18	MDP901506*575035++WR
	55	57.5	56.0	35.0	52.5	20.3	1.2	17	30.5	298	6	19.8	MDP901556*575635++WR
	60	57.5	55.0	45.0	52.5	20.3	1.2	16	18	190	5.6	21.5	MDP901606*575545++WR
	65	57.5	64.5	35.0	52.5	20.3	1.2	17	30.5	298	5	23.4	MDP901656*576435++WR
	65	57.5	55.0	45.0	52.5	20.3	1.2	17	30.5	298	5.1	23.3	MDP901656*575545++WR
	65	57.5	55.0	45.0	52.5	20.3	1.2	17	30.5	298	5	23.4	MDP901656*575545++WR
70	57.5	64.5	45.0	52.5	20.3	1.2	15	31	300	4.8	25.1	MDP901706*576445++WR	
70	57.5	70.0	35.0	52.5	20.3	1.2	17	30.5	298	4.7	25.2	MDP901706*577035++WR	
75	57.5	64.5	45.0	52.5	20.3	1.2	16	18	195	4.7	25.7	MDP901756*576445++WR	
80	57.5	64.5	45.0	52.5	20.3	1.2	16	18	200	4.5	26.8	MDP901806*576445++WR	
85	57.5	64.5	45.0	52.5	20.3	1.2	17	30.5	298	4.1	28.5	MDP901856*576445++WR	
85	57.5	80.0	35.0	52.5	20.3	1.2	17	30.5	298	4.1	28.5	MDP901856*578035++WR	
120	57.5	78.0	50.0	52.5	20.3	1.2	17	30.5	298	3	35	MDP901127*577850++WR	
1000Vdc	1.0	32.0	18.0	9.0	27.5	-	0.8	75	8	80	76.4	1.7	MDP102105*321809++RN
	2.0	32.0	22.0	13.0	27.5	-	0.8	75	8	80	38.2	3.5	MDP102205*322213++RN
	3.0	32.0	24.5	15.0	27.5	-	0.8	75	8	80	25.5	5.2	MDP102305*322415++RN
	4.0	32.0	30.0	16.0	27.5	-	0.8	75	8	80	19.1	6.9	MDP102405*323016++RN
	5.0	32.0	33.0	18.0	27.5	-	0.8	75	8	80	15.3	8.6	MDP102505*323318++RN
	5.0	41.0	30.0	16.0	37.5	-	1.0	37	15	140	31.2	3.8	MDP102505*413016++SN
	6.0	32.0	33.0	18.0	27.5	-	0.8	75	8	80	14.9	8.9	MDP102605*323318++RN
	6.0	41.0	30.0	16.0	37.5	-	1.0	37	15	140	26	4.6	MDP102605*413016++SN
	7.0	32.0	37.0	22.0	27.5	-	0.8	75	8	80	14.5	9.4	MDP102705*323722++RN
	7.0	32.0	37.0	22.0	27.5	12.7	0.8	75	8	80	11.4	11.6	MDP102705*323722++RJ
	7.0	41.0	33.0	18.0	37.5	-	1.0	37	15	140	22.3	5.4	MDP102705*413318++SN
	8.0	32.0	37.0	22.0	27.5	-	0.8	75	8	80	13	10.8	MDP102805*323722++RN
	8.0	32.0	37.0	22.0	27.5	12.7	0.8	75	8	80	10	13.3	MDP102805*323722++RJ
	8.0	41.0	33.0	18.0	37.5	-	1.0	37	15	140	19.5	6.2	MDP102805*413318++SN
	8.5	32.0	37.0	22.0	27.5	12.7	0.8	77	8	79	9.9	13.4	MDP102855*323722++RJ
	10	42.0	40.0	20.0	37.5	-	1.0	37	15	140	15.6	6.7	MDP102106*424020++SN

Note: "*" indicates the product's capacity deviation, J=±5%, K=±10%, "++" indicates the internal number.



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List of Standard Products

Rated voltage	C _N (μF)	W±1 (mm)	H±1 (mm)	T±1 (mm)	P (mm)	P1 (mm)	d±0.05 (mm)	dv/dt (V/μs)	tanδ(×10 ⁻⁴)		ESR@10kHz (mΩ)	I _{max} (A)	Product Code
									1kHz	10kHz			
1000Vdc	10	42.0	40.0	20.0	37.5	10.2	1.0	37	15	140	15.6	7.7	MDP102106*424020++SY
	12	41.0	37.0	22.0	37.5	12.7	1.0	37	15	140	13	9.2	MDP102126*413722++SJ
	12	42.0	40.0	20.0	37.5	10.2	1.0	40	15	138	13	9.3	MDP102126*424020++SY
	15	42.0	44.0	24.0	37.5	12.7	1.0	37	15	140	10.3	11.6	MDP102156*424424++SJ
	15	42.0	37.0	28.0	37.5	10.2	1.0	40	15	140	10.4	11.5	MDP102156*423728++SY
	15	42.0	44.0	24.0	37.5	10.2	1.0	40	15	140	10.3	11.6	MDP102156*424424++SY
	15	57.5	45.0	25.0	52.5	12.7	1.2	17	28	280	20.8	5.8	MDP102156*574525++WJ
	18	42.0	45.0	30.0	37.5	12.7	1.2	37	15	140	8.7	13.8	MDP102186*424530++SJ
	18	42.0	45.0	30.0	37.5	20.3	1.2	37	15	140	8.7	13.8	MDP102186*424530++SR
	20	42.0	45.0	30.0	37.5	12.7	1.2	37	15	140	7.8	15.4	MDP102206*424530++SJ
	20	42.0	45.0	30.0	37.5	20.3	1.2	40	15	138	7.7	15.5	MDP102206*424530++SR
	20	57.5	45.0	25.0	52.5	12.7	1.2	17	28	280	15.6	7.7	MDP102206*574525++WJ
	25	42.0	46.0	35.0	37.5	20.3	1.2	37	15	138	6.2	19.2	MDP102256*424635++SR
	25	42.0	50.0	35.0	37.5	20.3	1.2	37	15	140	6.2	19.2	MDP102256*425035++SR
	25	57.5	45.0	25.0	52.5	12.7	1.2	17	28	280	12.5	9.6	MDP102256*574525++WJ
	28	42.0	50.0	35.0	37.5	20.3	1.2	40	15	138	6	19.5	MDP102286*425035++SR
	30	42.0	55.0	40.0	37.5	20.3	1.2	37	15	140	5.2	23.1	MDP102306*425540++SR
	30	57.5	44.0	30.0	52.5	12.7	1.2	17	28	280	10.4	11.5	MDP102306*574430++WJ
	30	57.5	44.0	30.0	52.5	20.3	1.2	17	28	280	10.4	11.5	MDP102306*574330++WR
	30	57.5	45.0	30.0	52.5	12.7	1.2	17	28	280	10.4	11.5	MDP102306*574530++WJ
	30	57.5	45.0	30.0	52.5	20.3	1.2	17	28	280	10.4	11.5	MDP102306*574530++WR
	35	42.0	55.0	40.0	37.5	20.3	1.2	37	15	140	4.8	25.1	MDP102356*425540++SR
	35	57.5	50.0	35.0	52.5	20.3	1.2	17	28	280	8.9	13.5	MDP102356*575035++WR
	40	42.0	60.0	45.0	37.5	20.3	1.2	37	15	140	4.2	28.7	MDP102406*426045++SR
	40	57.5	50.0	35.0	52.5	20.3	1.2	17	28	280	7.8	15.4	MDP102406*575035++WR
	45	42.0	62.0	45.0	37.5	20.3	1.2	40	15	138	4.1	29	MDP102456*426245++SR
	45	57.5	55.0	45.0	52.5	20.3	1.2	17	28	280	6.9	17.3	MDP102456*575545++WR
	45	57.5	56.0	35.0	52.5	20.3	1.2	20	27.5	278	6.8	17.4	MDP102456*575635++WR
	50	57.5	55.0	45.0	52.5	20.3	1.2	17	28	280	6.2	19.2	MDP102506*575545++WR
	55	57.5	64.5	35.0	52.5	20.3	1.2	20	27.5	278	5.6	21.2	MDP102556*576435++WR
55	57.5	55.0	45.0	52.5	20.3	1.2	17	28	280	5.7	21.1	MDP102556*575545++WR	
60	57.5	70.0	35.0	52.5	20.3	1.2	20	27.5	278	5.1	23.2	MDP102606*577035++WR	
60	57.5	64.5	45.0	52.5	20.3	1.2	17	28	280	5.2	23.1	MDP102606*576445++WR	
70	57.5	64.5	45.0	52.5	20.3	1.2	17	28	280	4.5	26.9	MDP102706*576445++WR	
70	57.5	80.0	35.0	52.5	20.3	1.2	20	27.5	278	4.4	27	MDP102706*578035++WR	
100	57.5	78.0	50.0	52.5	20.3	1.2	20	27.5	278	3.2	35	MDP102107*577850++WR	
1100Vdc	0.68	32.0	20.0	11.0	27.5	-	0.8	80	8	70	80	1.7	MDP112684*322011++RN
	1.0	32.0	20.0	11.0	27.5	-	0.8	80	8	70	59.4	2.2	MDP112105*322011++RN
	1.5	32.0	22.0	13.0	27.5	-	0.8	80	8	70	55.7	2.4	MDP112155*322213++RN
	2.0	32.0	25.0	13.0	27.5	-	0.8	80	8	70	27.9	4.7	MDP112205*322513++RN
	3.0	32.0	30.0	16.0	27.5	-	0.8	80	8	70	20.4	6.5	MDP112305*323016++RN
	3.0	41.0	30.0	16.0	37.5	-	1.0	40	15	130	48.3	2.5	MDP112305*413016++SN
	4.0	32.0	33.0	18.0	27.5	-	0.8	80	8	70	15.3	8.6	MDP112405*323318++RN

Note: "*" indicates the product's capacity deviation, J=±5%, K=±10%, "++" indicates the internal number.



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List of Standard Products

Rated voltage	C _N (μF)	W±1 (mm)	H±1 (mm)	T±1 (mm)	P (mm)	P1 (mm)	d±0.05 (mm)	dv/dt (V/μs)	tanδ(×10 ⁻⁴)		ESR@10kHz (mΩ)	I _{max} (A)	Product Code
									1kHz	10kHz			
1100Vdc	4.0	41.0	30.0	16.0	37.5	-	1.0	40	15	130	36.2	3.3	MDP112405*413016++SN
	4.7	41.0	33.5	18.5	37.5	-	1.0	40	15	130	30.8	3.9	MDP112475*413318++SN
	5.0	32.0	37.0	22.0	27.5	-	0.8	80	8	70	14	9.8	MDP112505*323722++RN
	5.0	32.0	37.0	22.0	27.5	10.2	0.8	80	8	70	12.3	10.8	MDP112505*323722++RJ
	5.0	41.0	33.5	18.5	37.5	-	1.0	40	15	130	29	4.1	MDP112505*413318++SN
	6.0	32.0	37.0	22.0	27.5	-	0.8	80	8	70	12.3	10.8	MDP112605*323722++RN
	6.0	32.0	37.0	22.0	27.5	10.2	0.8	80	8	70	10.2	12.9	MDP112605*323722++RJ
	6.0	41.0	33.5	18.5	37.5	-	1.0	40	15	130	24.2	5	MDP112605*413318++SN
	7.0	42.0	40.0	20.0	37.5	10.2	1.0	40	15	130	20.7	5.8	MDP112705*424020++SY
	8.0	41.0	37.0	22.0	37.5	10.2	1.0	40	15	130	18.1	6.6	MDP112805*413722++SY
	9.0	41.0	37.0	22.0	37.5	12.7	1.0	40	15	130	16.1	7.5	MDP112905*413722++SJ
	10	42.0	44.0	24.0	37.5	10.2	1.0	42	14.8	128	14.4	8.4	MDP112106*424424++SY
	12	42.0	44.0	24.0	37.5	12.7	1.0	40	15	130	12.1	9.9	MDP112126*424424++SJ
	12	42.0	44.0	24.0	37.5	-	1.0	40	15	130	14	8.6	MDP112126*424424++SN
	15	42.0	45.0	30.0	37.5	12.7	1.2	40	15	130	9.7	12.4	MDP112156*424530++SJ
	15	42.0	45.0	30.0	37.5	20.3	1.2	40	15	130	9.7	12.4	MDP112156*424530++SR
	15	57.5	45.0	25.0	52.5	12.7	1.2	20	27	260	19.3	6.2	MDP112156*574525++WJ
	18	42.0	50.0	35.0	37.5	20.3	1.2	40	15	130	8.1	14.9	MDP112186*425035++SR
	20	42.0	50.0	35.0	37.5	20.3	1.2	40	15	130	7.2	16.6	MDP112206*425035++SR
	20	57.5	45.0	30.0	52.5	12.7	1.2	20	27	260	14.4	8.3	MDP112206*574530++WJ
	25	42.0	55.0	40.0	37.5	20.3	1.2	42	15	130	5.8	20.7	MDP112256*425540++SR
	25	57.5	50.0	35.0	52.5	20.3	1.2	20	27	260	11.6	10.4	MDP112256*575035++WR
	30	42.0	62.0	45.0	37.5	20.3	1.2	42	14.8	128	4.7	24.9	MDP112306*426245++SR
	30	57.5	50.0	35.0	52.5	20.3	1.2	20	27	260	9.7	12.4	MDP112306*575035++WR
	35	57.5	55.0	45.0	52.5	20.3	1.2	20	27	260	8.4	14.3	MDP112356*575545++WR
	35	57.5	56.0	35.0	52.5	20.3	1.2	22	26.8	258	8.3	14.3	MDP112356*575635++WR
40	57.5	55.0	45.0	52.5	20.3	1.2	20	27	260	7.8	15.5	MDP112406*575545++WR	
45	57.5	55.0	45.0	52.5	20.3	1.2	20	27	260	6.9	17.4	MDP112456*575545++WR	
45	57.5	70.0	35.0	52.5	20.3	1.2	22	26.8	258	6.8	17.5	MDP112456*577035++WR	
50	57.5	64.5	45.0	52.5	20.3	1.2	20	27	260	6.2	19.3	MDP112506*576445++WR	
50	57.5	80.0	35.0	52.5	20.3	1.2	20	27.5	278	4.6	25	MDP112506*578035++WR	
55	57.5	64.5	45.0	52.5	20.3	1.2	20	27	260	5.6	21.3	MDP112556*576445++WR	
75	57.5	78.0	50.0	52.5	20.3	1.2	20	27	260	3.6	35	MDP112756*577850++WR	
1200Vdc	1.0	32.0	20.0	11.0	27.5	-	0.8	90	7	55	39.5	3.5	MDP122105*322011++RN
	2.0	32.0	24.5	15.0	27.5	-	0.8	90	7	55	26.3	5	MDP122205*322415++RN
	3.0	32.0	30.0	16.0	27.5	-	0.8	90	7	55	17.5	7.5	MDP122305*323016++RN
	4.0	32.0	33.0	18.0	27.5	-	0.8	90	7	55	13.9	9.5	MDP122405*323318++RN
	5.0	32.0	37.0	22.0	27.5	-	0.8	90	7	55	12.7	10.4	MDP122505*323722++RN
	5.0	32.0	37.0	22.0	27.5	10.2	0.8	90	7	55	11.1	11.8	MDP122505*323722++RJ
	3.0	41.0	30.0	16.0	37.5	-	1.0	45	13	100	37.2	3.2	MDP122305*413016++SN
	4.0	41.0	30.0	16.0	37.5	-	1.0	45	13	100	27.9	4.3	MDP122405*413016++SN
	5.0	41.0	33.5	18.5	37.5	-	1.0	45	13	100	22.3	5.4	MDP122505*413318++SN
	6.0	42.0	40.0	20.0	37.5	10.2	1.0	47	12.8	98	18.5	6.6	MDP122605*424020++SY

Note: "*" indicates the product's capacity deviation, J=±5%, K=±10%, "++" indicates the internal number.



MDP

List of Standard Products

Rated voltage	C _N (μF)	W±1 (mm)	H±1 (mm)	T±1 (mm)	P (mm)	P1 (mm)	d±0.05 (mm)	dv/dt (V/μs)	tanδ(×10 ⁻⁴)		ESR@10kHz (mΩ)	I _{max} (A)	Product Code
									1kHz	10kHz			
1200Vdc	7.0	42.0	37.0	28.0	37.5	10.2	1.0	47	12.8	98	13.8	8.7	MDP122705*423728++SY
	8.0	42.0	44.0	24.0	37.5	10.2	1.0	45	13	100	13.9	8.6	MDP122805*424424++SY
	9.0	42.0	44.0	24.0	37.5	12.7	1.0	45	13	100	12.4	9.7	MDP122905*424424++SJ
	10	42.0	44.0	24.0	37.5	12.7	1.0	45	13	100	11.1	10.8	MDP122106*424424++SJ
	12	42.0	45.0	30.0	37.5	12.7	1.2	45	13	100	9.3	12.9	MDP122126*424530++SJ
	12	42.0	45.0	30.0	37.5	20.3	1.2	45	13	100	9.3	12.9	MDP122126*424530++SR
	12	57.5	45.0	25.0	52.5	12.7	1.2	23	24	200	19.9	6	MDP122126*574525++WJ
	14	42.0	46.0	35.0	37.5	20.3	1.2	47	12.8	98	8.4	14.6	MDP122146*424635++SR
	15	42.0	50.0	35.0	37.5	20.3	1.2	45	13	100	7.4	16.1	MDP122156*425035++SR
	15	57.5	45.0	25.0	52.5	12.7	1.2	23	24	200	15.9	7.5	MDP122156*574525++WJ
	18	42.0	50.0	35.0	37.5	20.3	1.2	45	13	100	6.6	18.1	MDP122186*425035++SR
	20	42.0	55.0	40.0	37.5	20.3	1.2	45	13	100	6	20.1	MDP122206*425540++SR
	20	57.5	45.0	30.0	52.5	12.7	1.2	23	24	200	11.9	10	MDP122206*574530++WJ
	20	57.5	45.0	30.0	52.5	20.3	1.2	23	24	200	11.9	10	MDP122206*574530++WR
	25	42.0	62.0	45.0	37.5	20.3	1.2	47	12.8	98	4.7	25.2	MDP122256*426245++SR
	25	57.5	50.0	35.0	52.5	20.3	1.2	25	23.8	198	9.5	12.7	MDP122256*575035++WR
	30	57.5	56.0	35.0	52.5	20.3	1.2	25	23.8	198	7.9	15.2	MDP122306*575635++WR
	30	57.5	55.0	45.0	52.5	20.3	1.2	23	24	200	8	15.1	MDP122306*575545++WR
	35	57.5	64.5	35.0	52.5	20.3	1.2	25	23.8	198	6.7	17.7	MDP122356*576435++WR
	35	57.5	55.0	45.0	52.5	20.3	1.2	23	24	200	6.8	17.6	MDP122356*575545++WR
38	57.5	55.0	45.0	52.5	20.3	1.2	25	23.8	198	6.4	19.1	MDP122386*575545++WR	
40	57.5	64.5	45.0	52.5	20.3	1.2	23	24	200	6	20.1	MDP122406*576445++WR	
40	57.5	70.0	35.0	52.5	20.3	1.2	25	23.8	198	5.9	20.2	MDP122406*577035++WR	
45	57.5	64.5	45.0	52.5	20.3	1.2	25	23.8	198	5.2	22.7	MDP122456*576445++WR	
45	57.5	80.0	35.0	52.5	20.3	1.2	25	23.8	198	5.2	22.7	MDP122456*578035++WR	
70	57.5	78.0	50.0	52.5	20.3	1.2	25	23.8	198	3.7	32	MDP122706*577850++WR	
1400Vdc	0.56	32.0	20.0	11.0	27.5	-	0.8	120	8	24	33	3.3	MDP142564*322011++RN
	0.68	32.0	22.0	13.0	27.5	-	-	120	8	24	27.7	3.9	MDP142684*322213++RN
	1.0	32.0	22.0	13.0	27.5	-	-	120	8	25	19.9	4.8	MDP142105*322213++RN
	1.5	32.0	24.5	15.0	27.5	-	-	120	8	26	13.6	6.3	MDP142155*322415++RN
	2.0	32.0	28.0	18.0	27.5	-	-	120	8	27	10.2	8.2	MDP142205*322818++RN
	2.0	42.0	24.0	15.0	37.5	-	-	80	8	50	21.2	5.6	MDP142205*422415++SN
	2.7	42.0	28.0	17.0	37.5	-	-	80	8	52	16.5	6.7	MDP142275*422817++SN
	3.0	32.0	37.0	22.0	27.5	-	-	120	8	28	7.1	11.2	MDP142305*323722++RN
	4.0	32.0	37.0	22.0	27.5	-	-	120	8	30	5.8	12.3	MDP142405*323722++RN
	5.0	42.0	40.0	20.0	37.5	10.2	-	80	8	55	9.4	10.8	MDP142505*424020++SY
	7.0	42.0	37.0	28.0	37.5	10.2	-	80	8	55	6.7	13.8	MDP142705*423728++SY
	8.0	42.0	43.0	28.0	37.5	10.2	-	80	8	56	6	15.2	MDP142805*424328++SY
	10	42.0	45.0	30.0	37.5	20.3	-	80	8	61	5.2	17.1	MDP142106*424530++SR
	12	42.0	46.0	35.0	37.5	20.3	-	80	8	61	4.3	19.9	MDP142126*424635++SR
	15	57.5	45.0	30.0	52.5	20.3	-	60	14	135	8.4	15.1	MDP142156*574530++WR

Note: "*" indicates the product's capacity deviation, J=±5%, K=±10%, "++" indicates the internal number.



MDP

List of Standard Products

Rated voltage	C _N (μF)	W±1 (mm)	H±1 (mm)	T±1 (mm)	P (mm)	P1 (mm)	d±0.05 (mm)	dv/dt (V/μs)	tanδ(×10 ⁻⁴)		ESR@10kHz (mΩ)	I _{max} (A)	Product Code
									1kHz	10kHz			
1400Vdc	20	42.0	62.0	45.0	37.5	20.3	-	80	9	73	3.1	27	MDP142206*426245++SR
	20	57.5	50.0	35.0	52.5	20.3	-	60	14	135	6.3	18.7	MDP142206*575035++WR
	25	57.5	64.5	35.0	52.5	20.3	-	60	14	137	5.1	22.2	MDP142256*576435++WR
	30	57.5	80.0	35.0	52.5	20.3	-	60	15	140	4.4	25.3	MDP142306*578035++WR
	35	57.5	80.0	35.0	52.5	20.3	-	60	15	142	3.8	28.3	MDP142356*578035++WR
	40	57.5	78.0	50.0	52.5	20.3	-	60	15	142	2.8	35	MDP142406*577850++WR
1500Vdc	0.47	32.0	20.0	11.0	27.5	-	0.8	140	8	22	35	3.2	MDP152474*322011++RN
	0.68	32.0	22.0	13.0	27.5	-	-	140	8	22	25	4.3	MDP152684*322213++RN
	1.0	32.0	24.5	15.0	27.5	-	-	140	8	22	17.3	5.6	MDP152105*322415++RN
	1.5	32.0	28.0	18.0	27.5	-	-	140	8	23	11.9	7.5	MDP152155*322818++RN
	1.5	42.0	24.0	15.0	37.5	-	-	100	8	43	24	5.3	MDP152155*422415++SN
	2.0	32.0	31.0	21.0	27.5	-	-	140	8	23	9	9.3	MDP152205*323121++RN
	2.0	42.0	28.0	17.0	37.5	-	-	100	8	43	18.3	6.3	MDP152205*422817++SN
	3.0	32.0	37.0	22.0	27.5	-	-	140	8	25	6.5	11.7	MDP152305*323722++RN
	4.0	42.0	40.0	20.0	37.5	10.2	-	100	8	48	10.3	10.4	MDP152405*424020++SY
	5.0	42.0	37.0	28.0	37.5	10.2	-	100	8	48	8.2	12.4	MDP152505*423728++SY
	6.0	42.0	43.0	28.0	37.5	10.2	-	100	8	48	6.8	14.3	MDP152605*424328++SY
	7.0	42.0	45.0	30.0	37.5	20.3	-	100	8	49	5.9	16.1	MDP152705*424530++SR
	9.0	42.0	46.0	35.0	37.5	20.3	-	100	8	53	5.1	18.2	MDP152905*424635++SR
	10	57.5	45.0	30.0	52.5	20.3	-	65	13	111	10.4	13.6	MDP152106*574530++WR
	15	42.0	62.0	45.0	37.5	20.3	-	100	8	63	3.6	25.3	MDP152156*426245++SR
	15	57.5	50.0	35.0	52.5	20.3	-	65	13	112	7.3	17.4	MDP152156*575035++WR
	18	57.5	64.5	35.0	52.5	20.3	-	65	13	113	5.9	20.7	MDP152186*576435++WR
	20	57.5	64.5	35.0	52.5	20.3	-	65	13	115	5.4	22.9	MDP152206*576435++WR
	25	57.5	80.0	35.0	52.5	20.3	-	65	13	115	4.3	26.7	MDP152256*578035++WR
	35	57.5	78.0	50.0	52.5	20.3	-	65	13	115	2.9	35	MDP152356*577850++WR
1600Vdc	0.47	32.0	22.0	13.0	27.5	-	0.8	150	8	20	30	3.8	MDP162474*322213++RN
	0.56	32.0	22.0	13.0	27.5	-	-	150	8	20	27	4.1	MDP162564*322213++RN
	0.68	32.0	24.5	15.0	27.5	-	-	150	8	21	22.3	4.9	MDP162684*322415++RN
	0.82	32.0	24.5	15.0	27.5	-	-	150	8	21	19	5.4	MDP162824*322415++RN
	1.0	32.0	28.0	18.0	27.5	-	-	150	8	22	15.8	6.6	MDP162105*322818++RN
	1.0	42.0	24.0	15.0	37.5	-	-	110	8	38	31.5	4.6	MDP162105*422415++SN
	1.5	32.0	33.0	18.0	27.5	-	-	150	8	22	11	8.2	MDP162155*323318++RN
	1.5	42.0	28.0	17.0	37.5	-	-	110	8	39	22.1	5.8	MDP162155*422817++SN
	2.0	32.0	37.0	22.0	27.5	-	-	150	8	22	8.5	10.2	MDP162205*323722++RN
	3.3	42.0	40.0	20.0	37.5	-	-	110	8	39	10.1	10.4	MDP162335*424020++SN
	4.0	42.0	37.0	28.0	37.5	-	-	110	8	40	8.5	12.2	MDP162405*423728++SN
	5.0	42.0	45.0	30.0	37.5	20.3	-	110	8	40	6.9	14.1	MDP162505*424530++SR
	6.0	42.0	45.0	30.0	37.5	20.3	-	110	8	44	6.2	15.6	MDP162605*424530++SR
	7.0	42.0	46.0	35.0	37.5	20.3	-	110	8	42	5.1	18.2	MDP162705*424635++SR
8.0	57.5	45.0	30.0	52.5	20.3	-	75	1.2	101	11.6	12.8	MDP162805*574530++WR	

Note: "*" indicates the product's capacity deviation, J=±5%, K=±10%, "++" indicates the internal number.

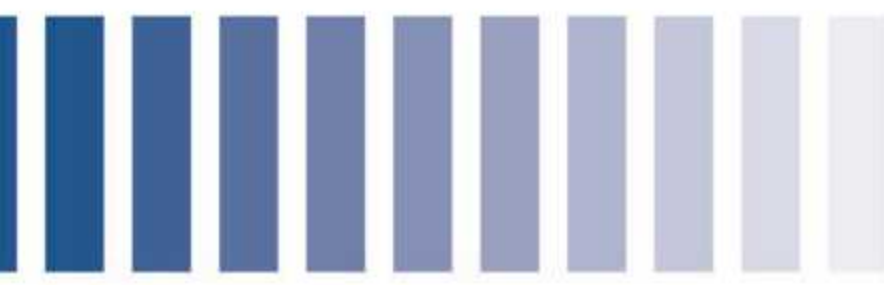


MDP

■ List of Standard Products

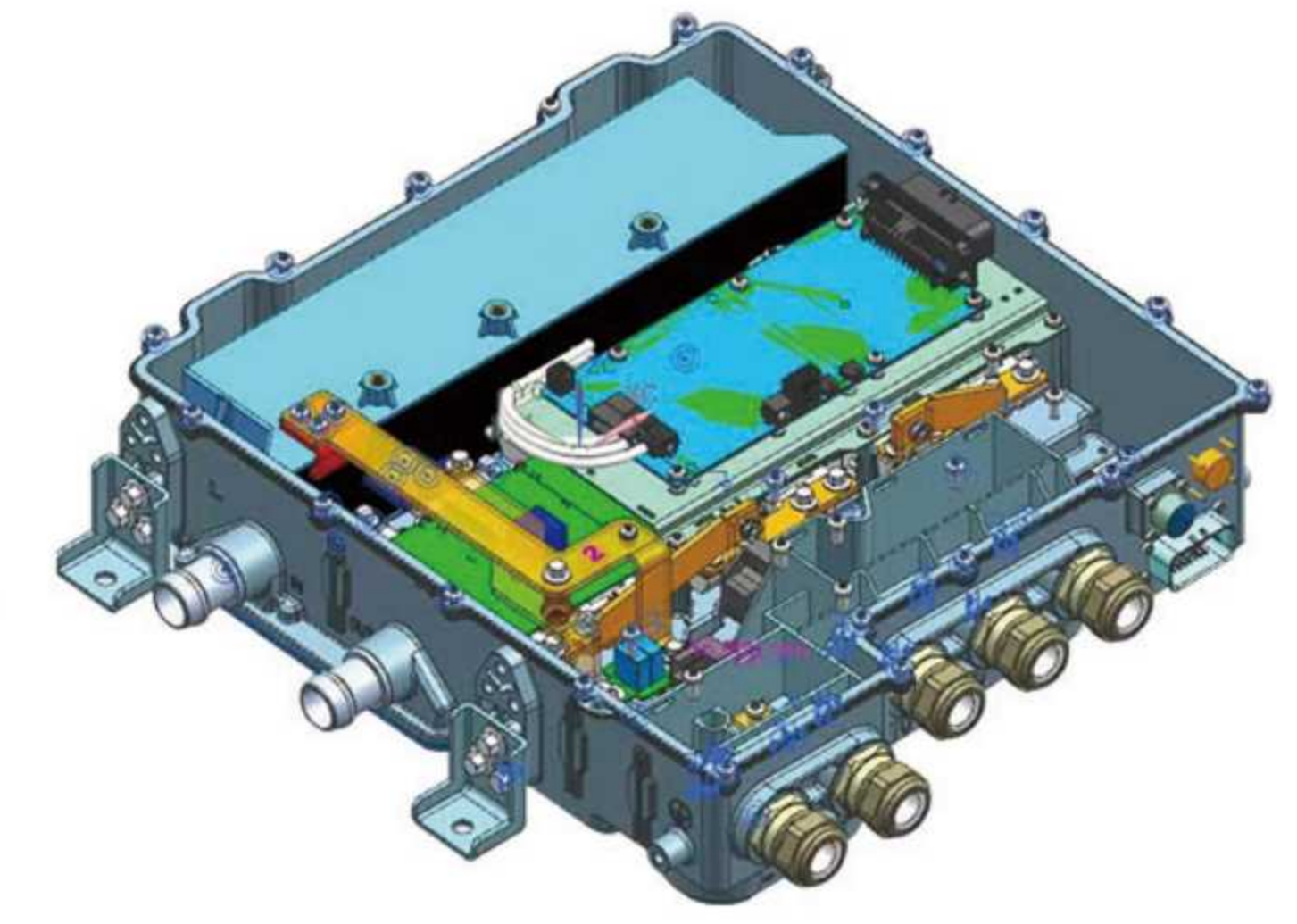
Rated voltage	C _N (μF)	W±1 (mm)	H±1 (mm)	T±1 (mm)	P (mm)	P1 (mm)	d±0.05 (mm)	dv/dt (V/μs)	tanδ(×10 ⁻⁴)		ESR@ 10kHz (mΩ)	I _{max} (A)	Product Code
									1kHz	10kHz			
1600Vdc	12	42.0	62.0	45.0	37.5	20.3	-	110	8	53	3.8	24.5	MDP162126*426245++SR
	12	57.5	50.0	35.0	52.5	20.3	-	75	1.2	104	8.2	16.4	MDP162126*575035++WR
	15	57.5	64.5	35.0	52.5	20.3	-	75	1.2	105	6.5	19.7	MDP162156*576435++WR
	18	57.5	64.5	35.0	52.5	20.3	-	75	1.2	106	5.5	22.7	MDP162186*576435++WR
	20	57.5	80.0	35.0	52.5	20.3	-	75	1.2	108	5	24.7	MDP162206*578035++WR
	25	57.5	80.0	35.0	52.5	20.3	-	75	1.2	108	3.5	35	MDP162256*578035++WR

Note: "*" indicates the product's capacity deviation, J=±5%, K=±10%, "++" indicates the internal number.



MDR

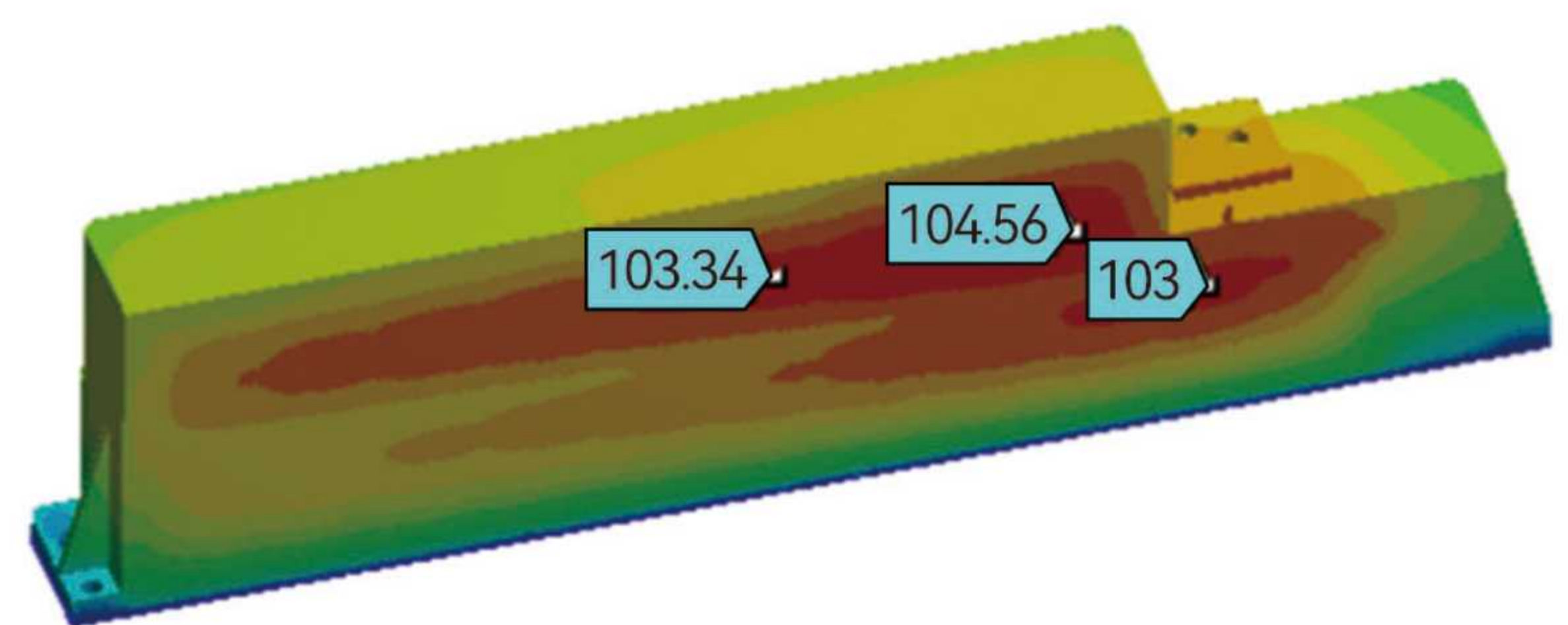
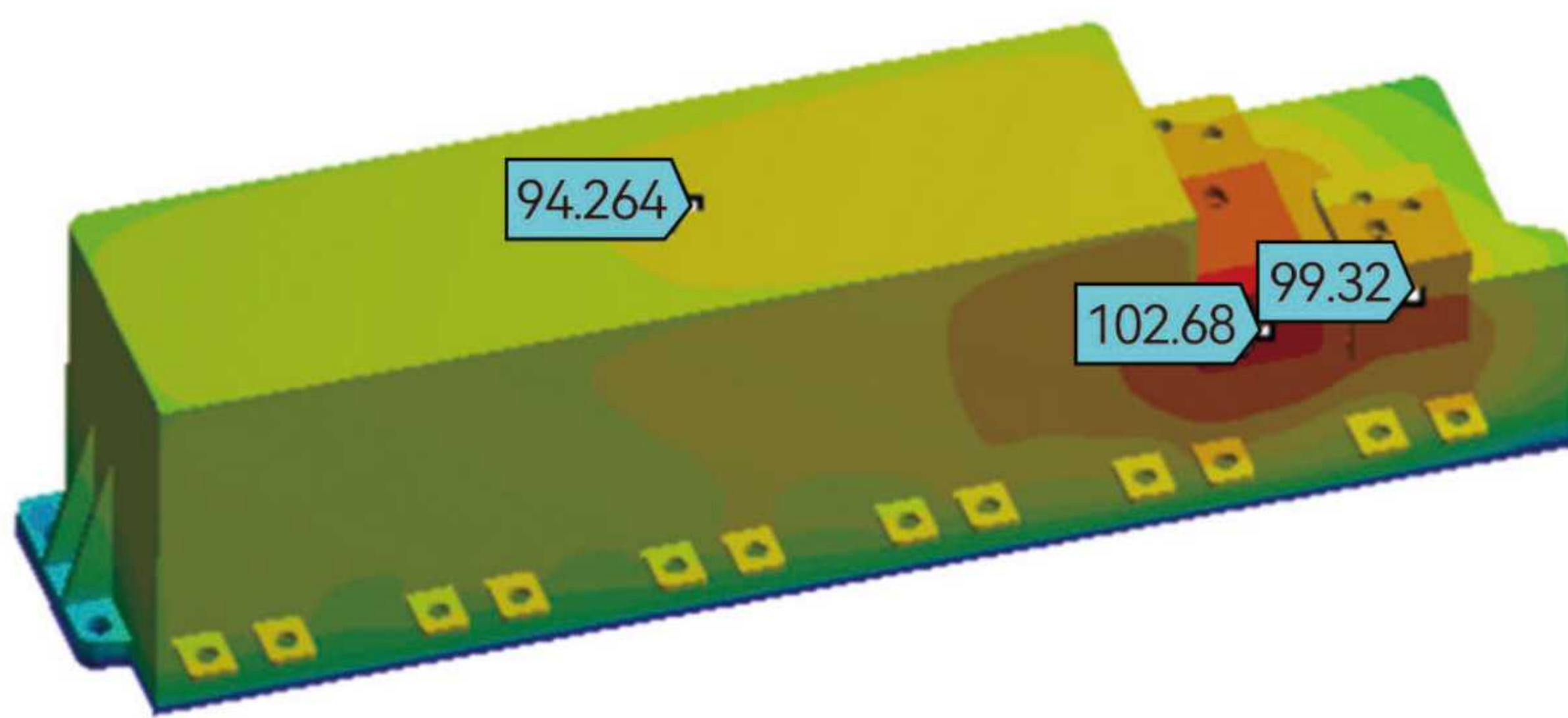
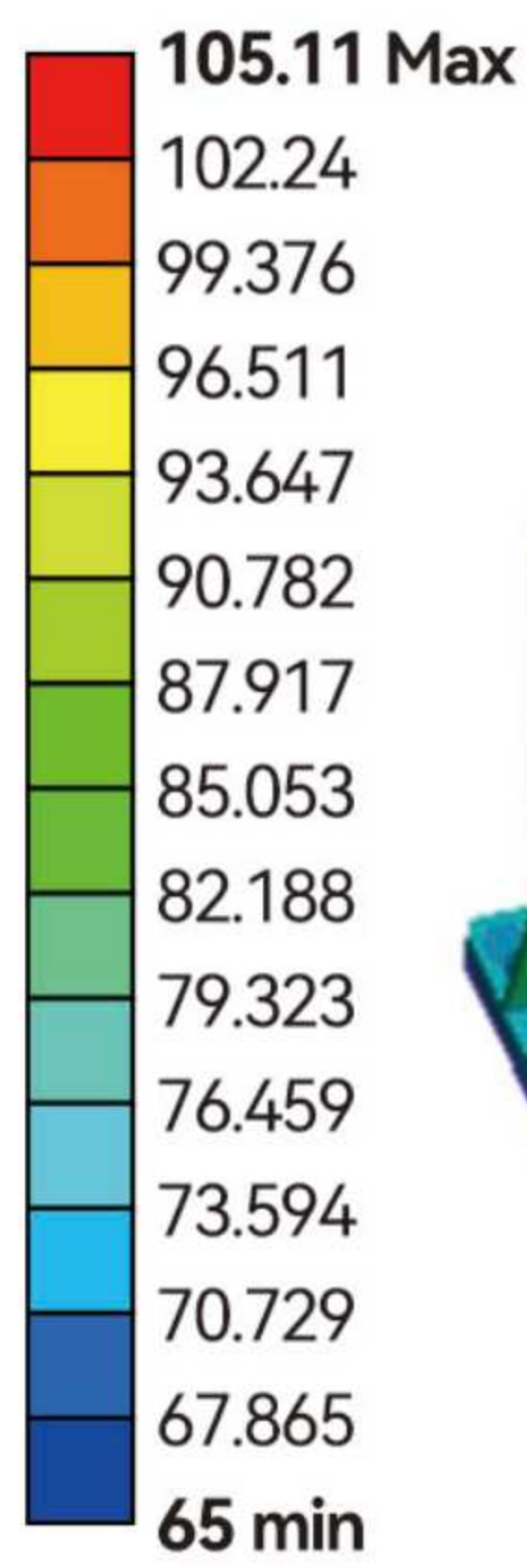
- ◆ Bus capacitors for new energy vehicles
 - ◆ Epoxy resin encapsulation
 - ◆ Dry-type design
 - ◆ Self-healing properties
 - ◆ Low ESL, low ESR
 - ◆ Strong ripple current withstand capability
 - ◆ Isolated metallized film design
 - ◆ Highly customized/integrated
- ◆ Application Areas
- ◇ DC-Link DC filter circuit
 - ◇ Hybrid electric vehicles and pure electric vehicles



■ Design of thermal management (thermal simulation)

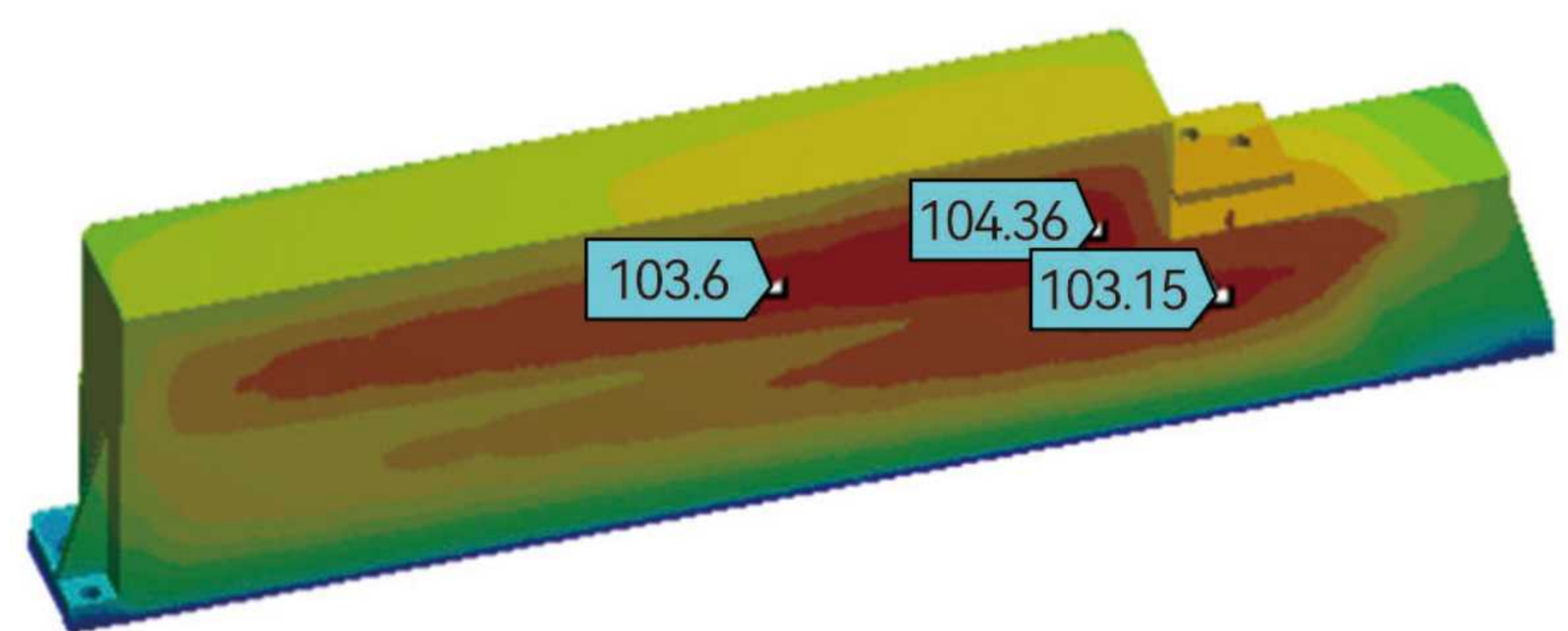
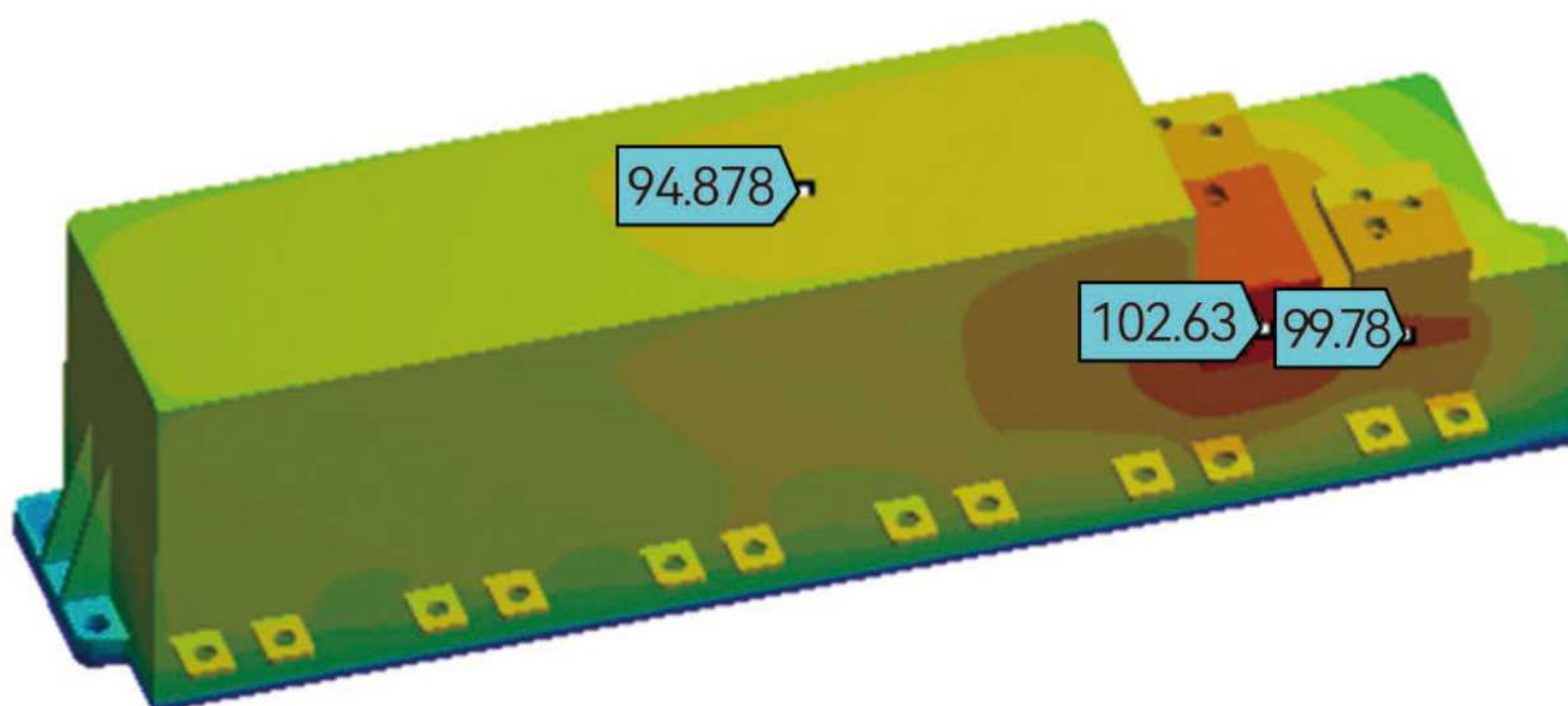
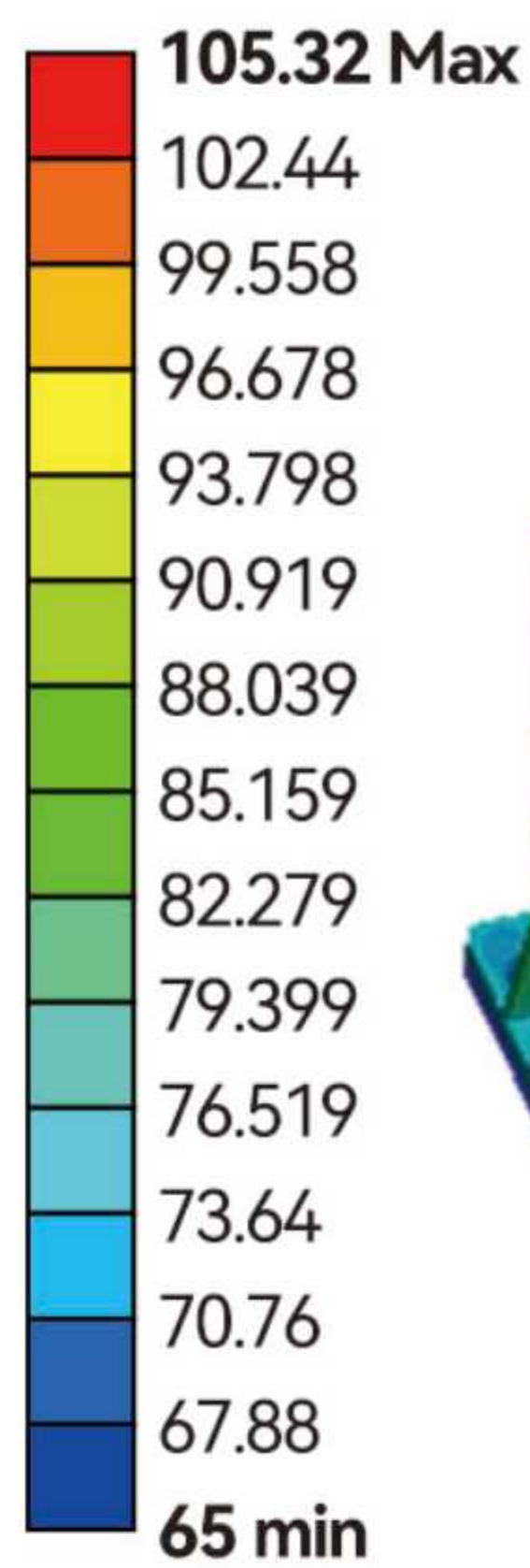
Normal operating procedure for capacitors at ambient temperatures of 85°C or 105°C

Type: Temperature
Unit: °C
Time: 60

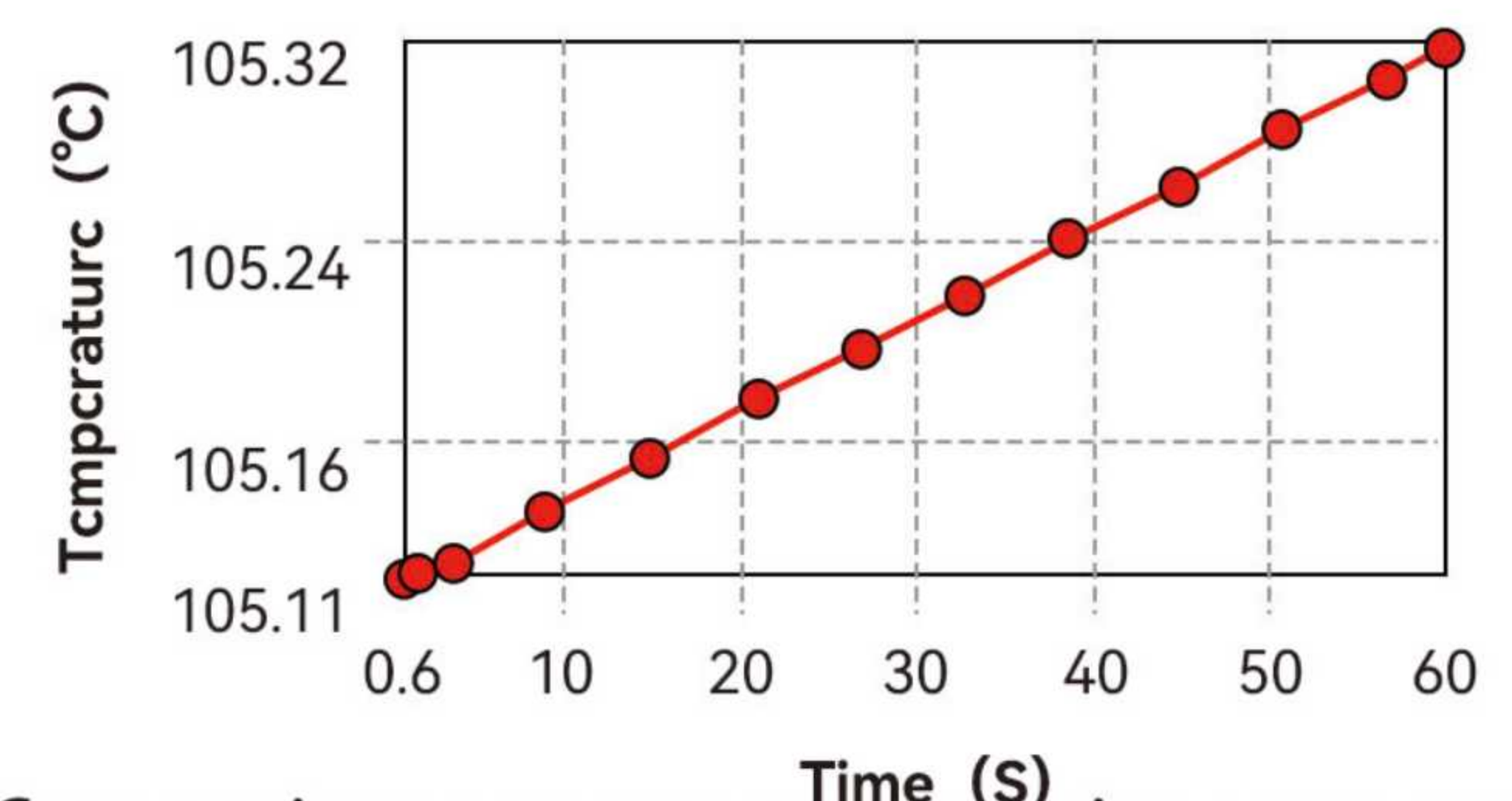


Continuous operation

Type: Temperature
Unit: °C
Time: 60

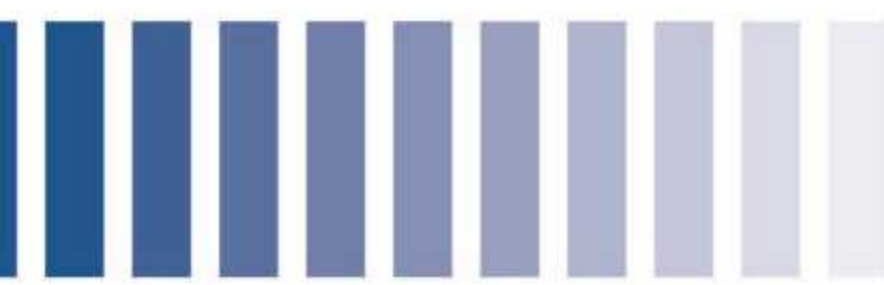


Peak operation for 60 seconds



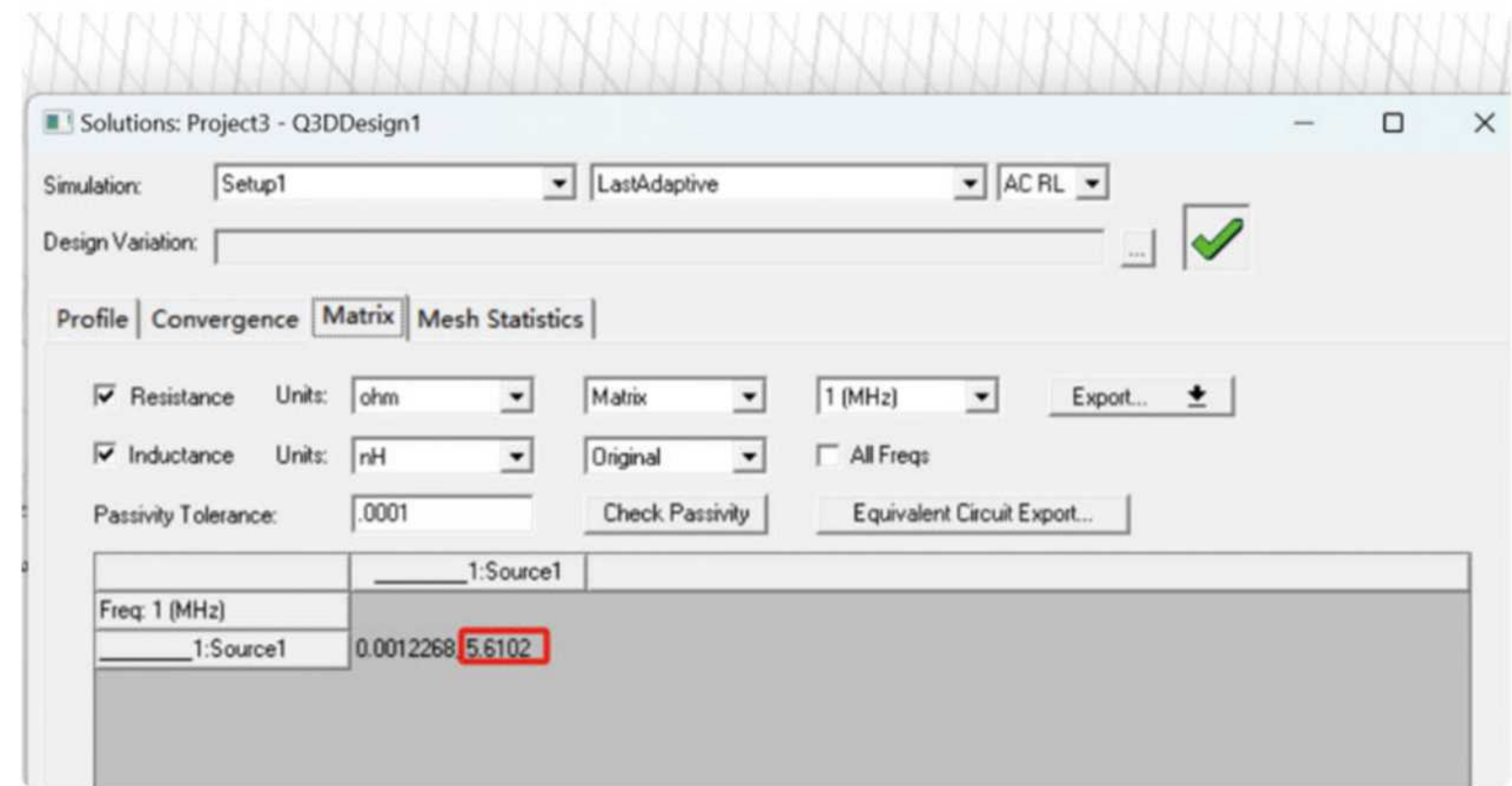
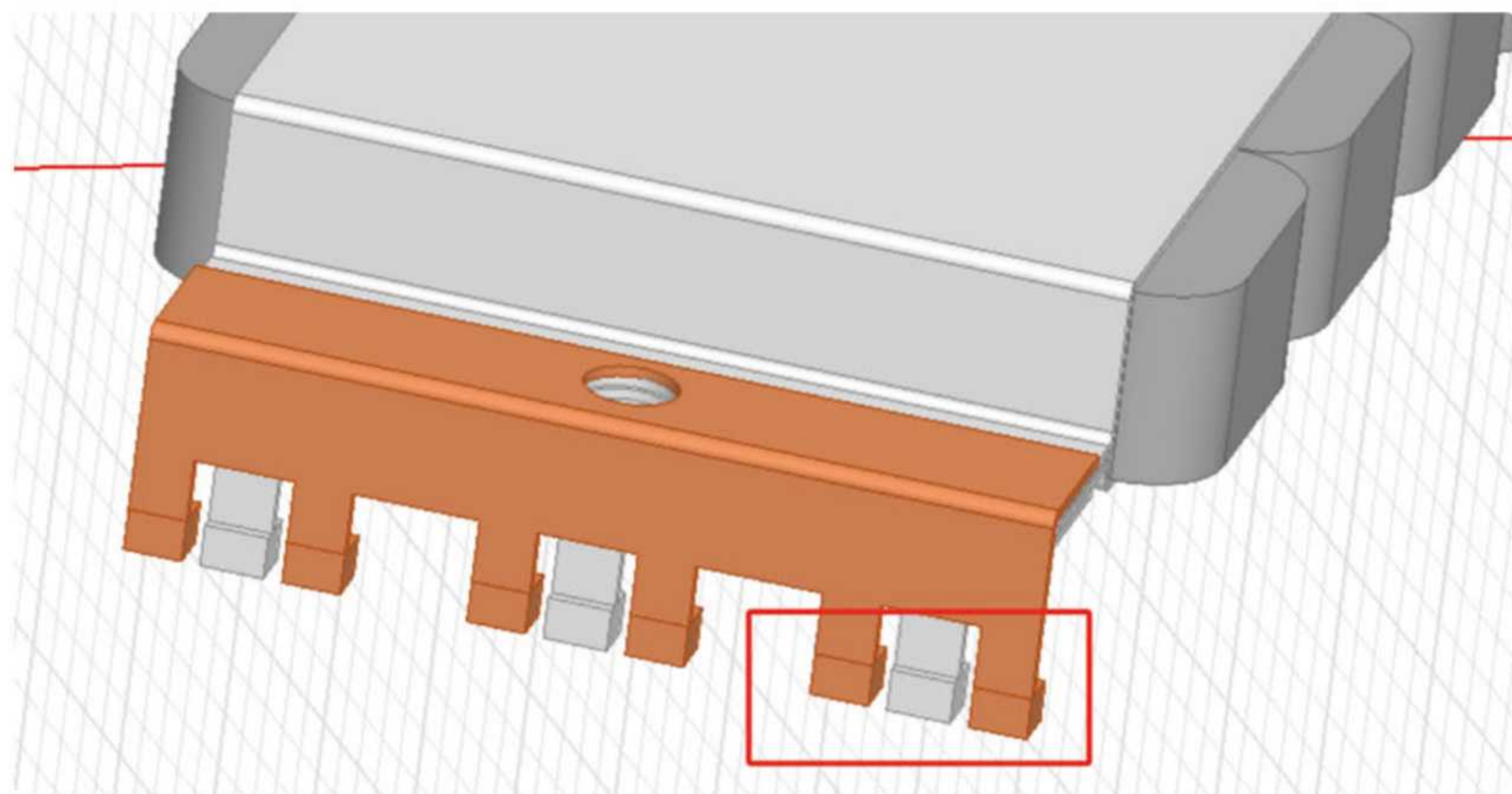
Core maximum temperature variation curve over time

Capacitor temperature distribution



Low-stray-inductance R&D capabilities (electromagnetic simulation)

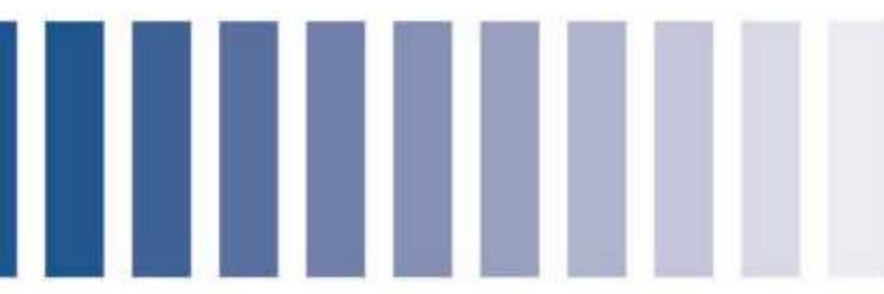
Low-influence schemes: 20nH, 15nH, 10nH, 5nH.



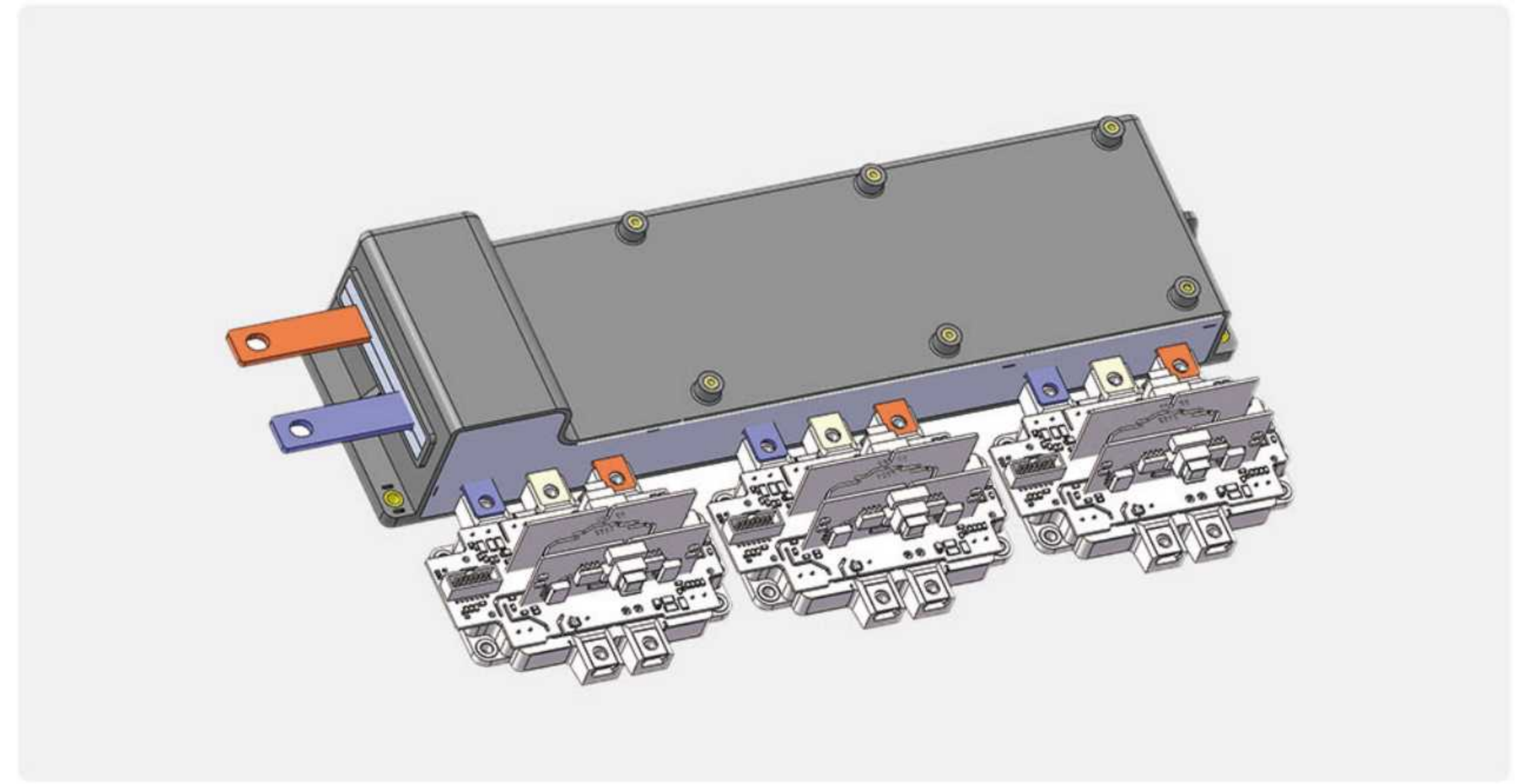
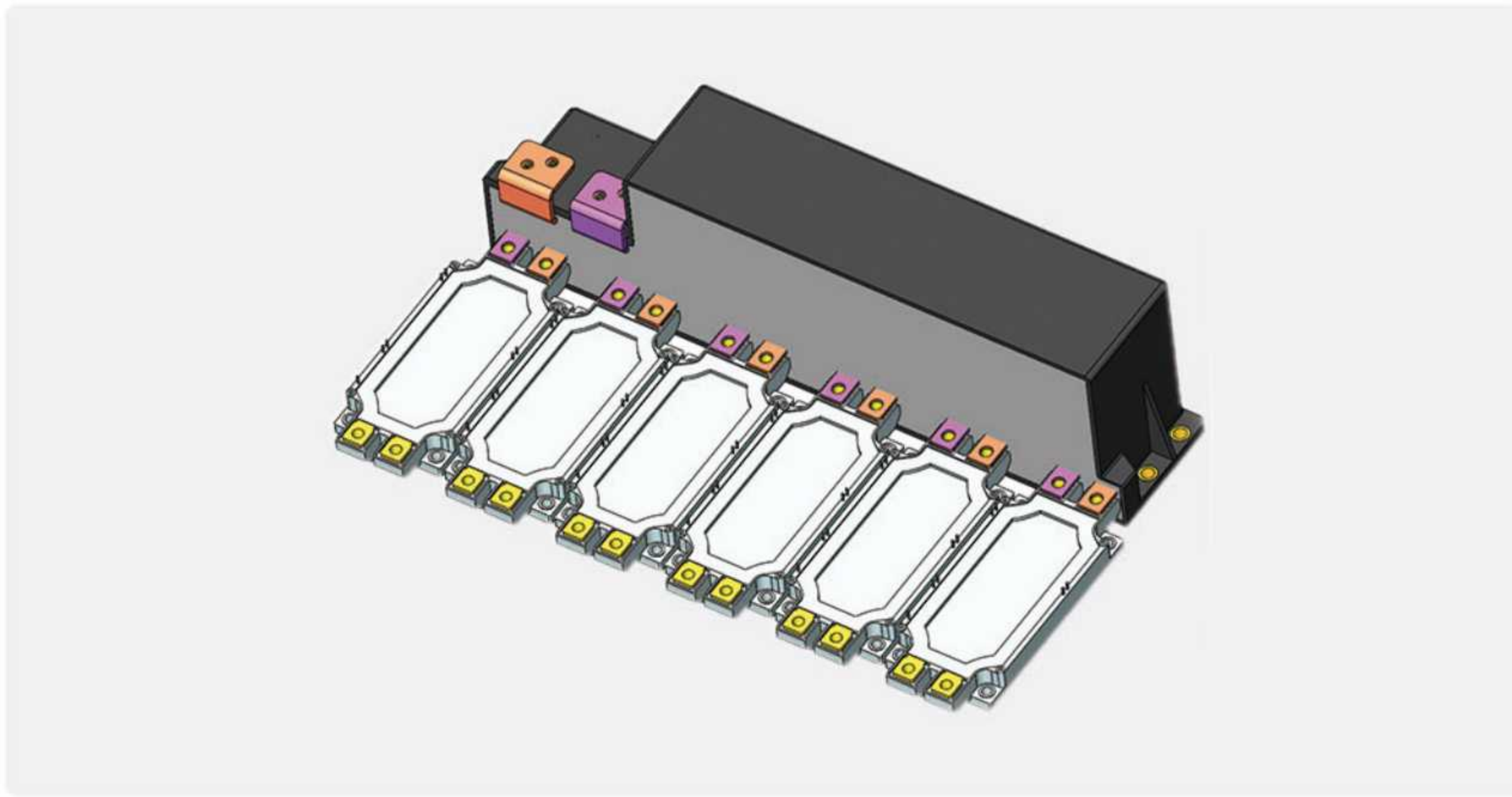
Customized modular capacitor R&D capabilities

R&D capabilities			
New energy vehicles			
	Passenger cars	Passenger vehicle - chassis integration	Commercial vehicles & special vehicles
Industrial control industry			
	Two-level	Three-level	

Module model	Power Module	Bus capacitor design case	Application areas
HPD			New energy electric passenger vehicles; low-power electric commercial vehicles
Econodual			High-power new energy electric commercial vehicles Inverter Energy storage PCS
FS400R07			Low-power new energy electric commercial vehicles Aircraft
TPAK			New energy electric passenger vehicles (laser welding)
F3L400R1			Frequency converter (three-level) Energy storage PCS (three-level) Inverter (three-level)
XM3			Frequency converter Inverter Converter
DCM			Frequency converter Inverter Converter



■ Application areas of modular capacitors



Capacity: 0.1 μF ~10000 μF	Voltage: 400~3000VDC	Operating temperature: -40~105°C
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High power frequency converter



High power converter



Electric vehicle fast charging station



Electric vehicle motor controller