



# CAPACITOR PORTFOLIO

WÜRTH ELEKTRONIK MORE THAN YOU EXPECT

# ALUMINUM ELECTROLYTIC CAPACITORS

\*More than 1680 part numbers available ex stock. **More part numbers on request.**

## Available Series:



**WCAP-ATXX**  
Radial THT



**WCAP-ASXX**  
V-Chip SMT



**WCAP-AIXX**  
Snap-In



**WCAP-AWXX**  
Screw

## Characteristics:

Type	Series	Capacitance	Voltage (V <sub>DC</sub> )	D x L (mm)	Operating Temperature (°C)	Endurance (h)
<b>Radial THT*</b>	ATG8, ATG5, AT1H, ATET, ATLI, ATUL, ATLL	0.47 – 33,000 µF	10 – 450	5 x 11 – 25 x 51	-55 up to +125	1,000 – 10,000
<b>V-Chip SMT*</b>	ASLI, ASLL, ASLU, ASNP, AS5H	0.47 – 6,800 µF	6.3 – 450	3 x 5.5 – 16 x 17	-40 up to +105	1,000 – 5,000
<b>Snap-In*</b>	AIG8, AIE8, AIG5, AI3H	33 – 10,000 µF	63 – 450	22 x 25 – 40 x 52	-40 up to +105	2,000 – 4,000
<b>Screw</b>	AWG8, AWG5	470 µF – 1 F	16 – 630	35 x 50 – 100 x 240	-40 up to +105	2,000 – 8,000

## Features:

- Higher capacitance values possible compared to Film Capacitors and MLCCs
- Higher voltage ratings compared to Aluminum Polymer Capacitors (up to 630 V<sub>DC</sub> available upon request)
- Lower leakage current compared to Aluminum Polymer Capacitors
- Stable capacitance values in relation to the DC bias voltage

## Example Applications:



Digital camera  
(THT/SMT)



Forklift  
(Snap-In/THT)



Computer  
(THT/SMT)



Control Panel  
(THT/SMT)



Elevator  
(Screw)

Would you like to know more?  
[www.we-online.com/aluelco](http://www.we-online.com/aluelco)



# ALUMINUM HYBRID POLYMER CAPACITORS

More than 80 part numbers available ex stock. **More part numbers on request.**

## Available Series:



**WCAP-HTG5**  
Radial THT

General Purpose 105°C



**WCAP-HTAH**  
Radial THT

High Temperature 125°C



**WCAP-HSG5**  
V-Chip SMT

General Purpose 105°C



**WCAP-HSAH**  
V-Chip SMT

High Temperature 125°C

## Characteristics:

Type	Series	Capacitance (µF)	Voltage (V <sub>DC</sub> )	D x L (mm)	Operating Temperature (°C)	Endurance (h)
Radial THT, General Purpose	WCAP-HTG5	10 – 470	16 – 100	6.3 x 8 – 10 x 12.5	-55 up to +105	5,000 – 10,000
Radial THT, High Temperature	WCAP-HTAH	10 – 560	16 – 100	6.3 x 8 – 10 x 12.5	-55 up to +125	2,000 – 4,000
V-Chip SMT, General Purpose	WCAP-HSG5	10 – 560	16 – 100	5 x 5.8 – 10 x 12.4	-55 up to +105	10,000
V-Chip SMT, High Temperature	WCAP-HSAH	10 – 820	16 – 100	5 x 5.8 – 10 x 12.4	-55 up to +125	4,000

## Features:

- Low ESR
- High ripple current characteristics
- High stability over the temperature range
- Low leakage current
- High lifetime performance

## Example Applications:



Servo Inverter



Air Conditioner



Industrial Power Supply



Security Camera



Base station

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[www.we-online.com/aluhybrid](http://www.we-online.com/aluhybrid)



# ALUMINUM POLYMER CAPACITORS

More than 300 part numbers available  
ex stock. **More part numbers on request.**

**Capacitance:** max. 3,900  $\mu\text{F}$   
**Voltage:** max. 100  $V_{\text{DC}}$

## Available Series:



**WCAP-PTXX**  
Radial THT



**WCAP-PSXX**  
V-Chip SMT



**WCAP-PHXX**  
H-Chip SMT

## Characteristics:

Type	Series	Capacitance ( $\mu\text{F}$ )	Voltage ( $V_{\text{DC}}$ )	Dimensions (mm)	Operating Temperature ( $^{\circ}\text{C}$ )	Endurance (h)
Radial THT	PTG5, PTHR, PTHT, PT5H	10 – 2,000	6.3 – 100	D x L: 6.3 x 5.2 – 10 x 12.5	-55 up to +125	2,000 – 5,000
V-Chip SMT	PSLC, PSLP, PSHP	4.7 – 2,000	6.3 – 100	D x L: 4 x 5.5 – 10 x 12.4	-55 up to +105	2,000 – 5,000
H-Chip SMT	PHGP, PHLE, PHSE	100 – 560	2 – 6.3	L x W x H: 7.3 x 4.3 x 1.9	-55 up to +105	2,000

## Features:

- Low ESR over a high frequency range
- High permissible ripple current
- Higher expected lifetime compared to Aluminum Electrolytic Capacitors
- Stable capacitance values in relation to the DC bias voltage and ambient temperature

## Example Applications:



Router



Graphic card



Industrial computer



High power USB charger

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[www.we-online.com/alupoly](http://www.we-online.com/alupoly)



# SUPERCAPACITORS

More than 5 part numbers available ex stock.

## Available Series:



**WCAP-STSC  
Radial THT**  
Standard Cylindrical



**WCAP-SISC  
Snap-In**  
Standard Cylindrical

## Characteristics:

Type	Series	Capacitance (F)	Voltage (V <sub>DC</sub> )	D x L (mm)	Operating Temperature (°C)	Cycle Life (cycles)
Radial THT	WCAP-STSC	3 – 50	2.7	8 x 20 – 18 x 40	-40 up to +65 (+85)	500,000
Snap-In	WCAP-SISC	100 & 350		22 x 45 & 35 x 60		

## Features:

- Electric Double Layer Capacitors (EDLCs)
- Very large capacitance
- Higher energy density compared to other capacitor technologies
- Ultra low equivalent series resistance (ESR)
- Significantly higher charge and discharge currents compared to batteries
- Cycle life is about 500 times and power output about 10 times higher compared to usual batteries

## Example Applications:



UPS systems



Storage device for power-offline periods



Smart metering (e.g. water meters)



Solar power



Hybrid application with battery

Would you like to know more?  
[www.we-online.com/supercaps](http://www.we-online.com/supercaps)



# MULTILAYER CERAMIC CHIP CAPACITORS

More than 1220 part numbers available ex stock. **More part numbers on request.**

## Available Series:



**WCAP-CSGP**  
General Purpose



**WCAP-CSMH**  
Mid and High Voltage



**WCAP-CSRF**  
High Frequency



**WCAP-CSST**  
Soft Termination



**WCAP-CSSA**  
Safety Capacitors  
(X1/Y2, X2)

## Characteristics:

Type	Series	Capacitance	Voltage	Size	Operating Temperature (°C)
General Purpose	WCAP-CSGP	0.5 pF – 100 µF	6.3 – 100 V <sub>DC</sub>	0201 – 2220	-55 up to +125
Mid and High Voltage	WCAP-CSMH	10 pF – 2.2 µF	200 – 3000 V <sub>DC</sub>	0603 – 2220	
High Frequency	WCAP-CSRF	0.2 pF – 33 pF	25 & 50 V <sub>DC</sub>	0201 & 0402	
Soft Termination	WCAP-CSST	220 pF – 2.2 µF	16 – 2000 V <sub>DC</sub>	0603 – 1210	
Safety Capacitors	WCAP-CSSA	33 pF – 4.7 nF	250 V <sub>AC</sub>	1808 – 2220	

## Features:

- Wide voltage range and size range
- Low Impedance and ESR values
- WCAP-CSST: High absorption of mechanical stress
- WCAP-CSSA: Safety-certified with high reliability
- WCAP-CSRF: Tight capacitance tolerance

## Example Applications:



Embedded board



Drilling machine



Power Supply



EV Charger



Antenna matching

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[www.we-online.com/mlcc](http://www.we-online.com/mlcc)



# FILM CAPACITORS

More than 320 part numbers available  
ex stock. **More part numbers on request.**

## Available Series:



**WCAP-FTBE**  
General Purpose  
+85 °C



**WCAP-FTBP**  
General Purpose  
+105 °C



**WCAP-FTDB**  
DC-Link



**WCAP-FTX2**  
Interference  
Suppression  
Class X2,  
275 V<sub>AC</sub>



**WCAP-FTXX**  
Interference  
Suppression  
Class X2,  
310 V<sub>AC</sub>



**WCAP-FTXH**  
Interference  
Suppression  
THB\* Class X2,  
310 V<sub>AC</sub>

## Characteristics:

Type	Series	Capacitance	Voltage	Pitch (mm)	Operating Temperature (°C)
<b>General Purpose</b>	WCAP-FTBE, WCAP-FTBP	10 nF – 6.8 µF	100 – 1000 V <sub>DC</sub>	7.5 – 37.5	-40 up to +105
<b>DC-Link</b>	WCAP-FTDB	1 µF – 75 µF	500 – 1200 V <sub>DC</sub>	27.5 – 52.5	-40 up to +105
<b>Interference Suppression</b>					
<b>Class X2</b>	WCAP-FTX2, WCAP-FTXX	5.6 nF – 10 µF	275 & 310 V <sub>AC</sub>	7.5 – 37.5	-40 up to +105
<b>THB* Class X2</b>	WCAP-FTXH	33 nF – 10 µF	310 V <sub>AC</sub>	15 – 37.5	-40 up to +110

\*THB = Temperature Humidity Bias

## Features:

- Self-healing properties
- Stable frequency and temperature behavior
- No voltage “influence” of the capacitance
- WCAP-FTXX/FTX2/FTXH: Series for interference suppression with safety class X2
- WCAP-FTXH: Special process and materials for harsh environments (temperature, humidity)
- WCAP-FTDB: DC-Link Capacitors with high voltages and very high ripple current capabilities

## Example Applications:



Audio  
amplifier  
(WCAP-FTBP)



AC mains filter  
(WCAP-FTXX/  
FTX2/FTXH)



Solar inverter  
(WCAP-FTDB)



LCD TV  
(WCAP-FTBE/  
FTBP)



Harsh  
environments  
(WCAP-FTXH)

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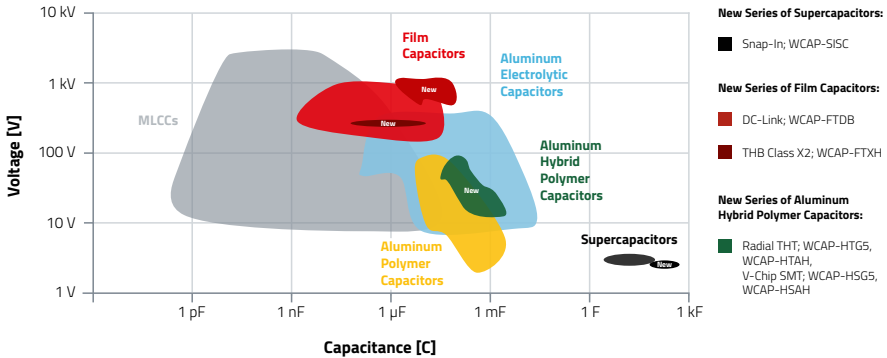
# WÜRTH ELEKTRONIK

## CAPACITORS

More than 3600 part numbers available ex stock. **More part numbers on request.**

### Big Portfolio Available Ex Stock!

Würth Elektronik has extended its capacitor range. Our current portfolio available ex stock is shown below. In this graph you will see the new series and also our new Aluminum Hybrid Polymer Capacitors product family. This new product family combines technologies from our Aluminum Electrolytic and our Aluminum Polymer Capacitors. The features of this new product family are an optimal combination of these two technologies. More details about each product family will follow on the next pages.



### Special Services Available!



Lifetime calculator and real measurements on **REDEXPERT**



Customized and modified capacitors on request (electrical or mechanical parameters)



Design-In support, webinar and seminars with product and application specialists



Calculations for applications (balancing, etc.)



ABC of Capacitors  
Trilogy of Capacitors (*Coming soon*)



Large portfolio of Design Kits



Design for manufacturing (e.g. cutting and bending)



Crossing service

