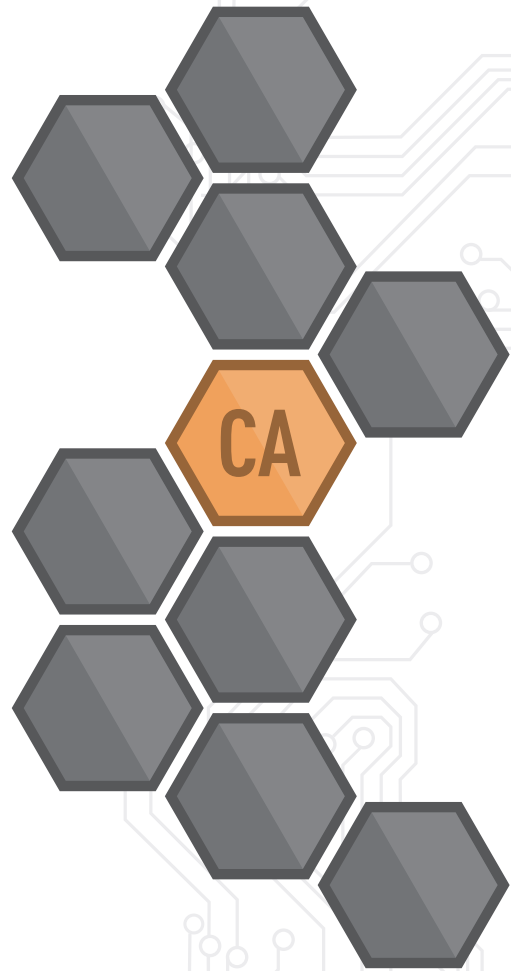


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OS-CON™: Polymer Aluminum

SP-Cap™: Polymer Aluminum

POSCAP™: Polymer Aluminum

Gold Cap: Electric Double Layer Radial Lead

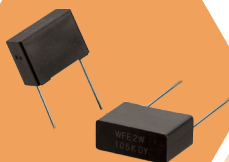
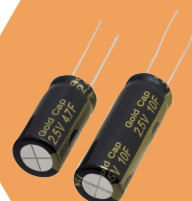
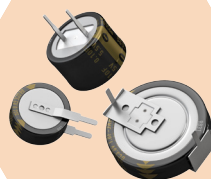
Leaded Aluminum Electrolytic

Surface Mount Aluminum Electrolytic

Ceramic

Film, Leaded

Film, Surface Mount Chip



		Series	Voltage	Capacitance	ESR
OS-CON : Polymer Aluminum - Surface Mount		SVP	2.5-25 VDC	3.3-1500 μ F	12-260 m Ω
		SVPC	2.5-16 VDC	39-2700 μ F	9-35 m Ω
		SVPF	16-50 VDC	10-1000 μ F	12-40 m Ω
		SVPE	2-16 VDC	150-1200 μ F	8-20 m Ω
		SEP	2.5-25 VDC	6.8-1500 μ F	12-80 m Ω
		SEPC	2.5-16 VDC	100-2700 μ F	5-24 m Ω
		SEPF	16-35 VDC	22-1000 μ F	12-35 m Ω
		SEOP	6.3 - 32 VDC	15-330 μ F	20-80 m Ω
		SVPA	4-20 VDC	47-680 μ F	19-28 m Ω
		SVPD	25-30VDC	10-82 μ F	28-65 m Ω
		SVPG	16VDC	47 μ F	8 m Ω
		SVPS	6.3-25VDC	10-330 μ F	20-60 m Ω
		SVQP	6.3-10 VDC	56-220 μ F	10-45 m Ω

		Series	Operating Temperature	(Working Voltage) Capacitance	Features
SP-CAP: Polymer Aluminum - Surface Mount	260°C Reflow Capable	EEF-CD	-40 ~ +105°C	(2 ~ 16VDC) 2.2 ~ 220 μ F	- Low ESR, high ripple current 1.8 mm height, ESR 18 mΩ maximum
		EEF-CS		(4 ~ 35VDC) 68 ~ 120 μ F	1.2mm height - Low ESR 15mΩ
		EEF-CT		(4 ~ 35VDC) 100 ~ 180 μ F	1.5mm height - Low ESR 15mΩ
		EEF-CX		(2 ~ 35VDC) 100 ~ 560 μ F	- Low ESR, high ripple current 1.9 mm height, ESR 15 mΩ maximum
		EEF-SR		(2 ~ 6.3) 68 ~ 220 μ F	1 mm max height; Low ESR
		EEF-LR		(2 ~ 6.3) 68 ~ 220 μ F	1mm max height; Low ESR, 3 terminals
		EEF-UD		(2 ~ 8 VDC) 68 ~ 470 μ F	- Low ESR, high ripple current 2.8 mm height, ESR 15 mΩ maximum
		EEF-UE		(2 ~ 8 VDC) 100 ~ 560 μ F	- Low ESR, high ripple current 4.2 mm height, ESR 12 mΩ maximum
		EEF-GX		(2 VDC) 330 ~ 470 μ F	Super low ESR 3mΩ
		EEF-LS, -LT		(2 ~ 2.5 VDC) 180 ~ 330 μ F	- Low ESL by structure of SP-Cap 50% ESL of current products
		EEF-LX		(2 ~ 2.5 VDC) 330 ~ 560 μ F	- Low ESL by structure of SP-Cap 50% ESL of current products
		EEF-SS, -ST		(2 ~ 2.5 VDC) 180 ~ 330 μ F	1.2mm (SS), 1.5mm (ST) height - Low ESR 6mΩ
		EEF-SL, -SX		(2 ~ 6.3 VDC) 56 ~ 560 μ F	- Excellent noise absorbent characteristics - Super low ESR (4.5mΩ - 9mΩ)

POSCAP: Polymer Aluminum - Surface Mount

Series	Voltage	Capacitance	ESR
TPE	2-10 VDC	47-1500 μ F	7-35 m Ω
TQC	16-35 VDC	3.9-150 μ F	40-400 m Ω
TPF	2-10 VDC	150-1000 μ F	5-15 m Ω
TPSF	2 VDC	270 μ F	6-9 m Ω
TPB	4-10 VDC	33-470 μ F	35-70 m Ω
TPC	6.3-12.5 VDC	10-330 μ F	40-80 m Ω
TPG	2.5-12.5 VDC	33-220 μ F	30-70 m Ω
TPU	2.5-10 VDC	4.7-150 μ F	100-300 m Ω
TA	2.5-6.3 VDC	47-220 μ F	9-70 m Ω
TH	6.3 - 10 VDC	220-470 μ F	35-40 m Ω
TPH	6.3 VDC	47 μ F	150 m Ω

Gold Cap: Electric Double Layer Radial Lead

Series	Operating Temperature	(Working Voltage) Capacitance	Features
EEC-SOHD EEC-S5R5	-25 ~ +70°C	(5.5 VDC) 0.022 ~ 0.33 F (5.5 VDC) 0.47 ~ 1.5 F	- General purpose, 1,000 hours at 70°C μA range IC memory back-up
EEC-SE0H	-25 ~ +70°C	(5.5 VDC) 0.022 ~ 0.22 F	1,000 hours at 70°C - Lead taping for auto insertion
EEC-F5R5U EEC-F5R5H	-25 ~ +70C -40 ~ +70C -25 ~ +85C -40 ~ +85C	(5.5 VDC) 0.22 to 1.5F (5.5 VDC) 0.033 ~ 1.0 F	- General purpose, 1000 hours at 70c. - General purpose, 1000 hours at 85c.
EEC-RG EEC-RF	-25 ~ +85°C	(3.6 VDC) 0.022-1.0 F (5.5 VDC) 0.10 to 1.0 F	2,000 hours at 85°C, general purpose - High Reliability - Backup for mA-A range
EEC-HW0D	-25 ~ +70°C -25 ~ +60°C	(2.3 VDC) 22 ~ 50 F (2.1 VDC) 70 F	- Large capacitance - Backup for mA - A range
EEC-HZ0D	-25 ~ +60°C	(2.5 VDC) 3.3~10 F	- Large Capacitance - Lower ESR than HW

			Series	Operating Temperature	(Working Voltage) Capacitance	Features
Leaded Aluminum Electrolytic	General Purpose	85°C	ECA-__M	-40 ~ +85°C (-25°C: 160~450VDC)	(6.3 ~ 450 VDC) 0.1 ~ 22,000 µF	- General purpose, 2000 hours at 85°C - Compact size
			ECA-__HG	-55 ~ +105°C (-25°C: 160~450VDC)	(6.3 ~ 450 VDC) 0.1 ~ 22,000 µF	- Long life: 1,000~2,000 hours at 105°C - Compact size
		105°C	EEA-GA	-55 ~ +105°C	(10 ~ 50 VDC) 0.1 ~ 220µF	- Long life: 1000 hours at 105°C 7mm height
			EEU-HD	-55 ~ +105°C	(10 ~ 50 VDC) 0.1 ~ 22000µF	- Long life: 1000~2000 hours at 105° C - Case Size : 5mm x 11mm to 18mm x 35.5mm
		Miniature	ECE-A__KA	-40 ~ +85°C	(4 ~ 50 VDC) 0.1 ~ 470 µF	- General purpose, 1,000 hours at 85°C 7 mm height
			ECE-A__KK/KS	-40 ~ +85°C	(4 ~ 50 VDC) 0.1 ~ 330 µF	- General purpose, 1000 hours at 85°C 5 mm height
	Bi-Polar	ECE-A__N__U/X	-40 ~ +85°C	(6.3 ~ 50 VDC) 0.47 ~ 6,800 µF	2,000 hours at 85°C - Bi-Polar general purpose	
		High Voltage	EEU-EB	-40 ~ +105°C (-25°C: 160~450VDC)	(10 ~ 450 VDC) 0.47 ~ 3,300 µF	5,000~10,000 hours at 105°C - Very long life
			EEU-ED	-25 ~ +105°C	(160 ~ 450 VDC) 10 ~ 330 µF	- Very long life 8,000~10,000 hours at 105°C - High Ripple Current
	EEU-EE		-25 ~ +105°C	(160 ~ 450 VDC) 10 ~ 330 µF	- Very long life 8,000~10,000 hours at 105°C - High Ripple Current at high frequency	
	Low Impedance	EEA/U-FC	-55 ~ +105°C	(6.3 ~ 100 VDC) 1.0 ~ 15,000 µF	1,000~5,000 hours at 105°C - Low impedance, miniature	
		EEU-FM	-40 ~ +105°C	(6.3 ~ 50 VDC) 22 ~ 6,800 µF	- Long life, 2,000~7,000 hours at 105°C - Low ESR, approximately half of FC	
		EEU-FR	-40 ~ +105°C	(6.3 ~ 63 VDC) 18 ~ 8,200 µF	- Ultra Low ESR: 12mΩ (20°C/100kHz) 5000 hours (case sizes 5 and 6mm Ø) ~10,000 hours at 105°C	
	125°C - 135°C	EEU-TA	-40 ~ +125°C	(10 ~ 63 VDC) 1 ~ 4,700 µF	2,000 hours at 125°C - Automotive applications	
		EEU-TP	-40 ~ +135°C	(25 ~ 35 VDC) 100 ~ 5,100 µF	- Low ESR: 16mΩ (20°C/100kHz) - Long Life: 125°C 2000 to 5000 hours (135° 1000 hours to 2000 hours)	

		Series	Operating Temperature	(Working Voltage) Capacitance	Features
Surface Mount Aluminum Electrolytic	General Purpose	EEE-_A/S	-40 ~ +85°C	(4 ~ 100 VDC) 0.1 ~ 1,500 µF	- General purpose, 2,000 hours at 85°C - Very compact size - High Temperature Reflow (260°C)
	Long Life	EEE-HA	-40 ~ +105°C	(6.3 ~ 100 VDC) 0.1 ~ 1,500 µF	- Long life, 1000~2,000 hours at 105°C - Very compact size
		EEE-HB	-40 ~ +105°C	(4 ~ 50 VDC) 0.1 ~ 470 µF	- Long life, 2,000 hours at 105°C 5.8 mm height (< Ø 6)
		EEE-HC	-40 ~ +105°C	(6.3 ~ 50 VDC) 33 ~ 1,000 µF	- Long life, 3,000~5,000 hours at 105°C 5.8 mm height (< Ø 6)
		EEE-HD	-40 ~ +105°C	(6.3 ~ 50 VDC) 0.1 ~ 1000 µF	- Very long life, 5,000 hours at 105°C - Industrial grade
		EEV-EB	-25 ~ +105°C	(160 ~ 450 VDC) 2.2 ~ 100 µF	Large can size
		EEE-TG EEV-TG	-40 ~ +125°C	(10 ~ 100 VDC) 10 ~ 4,700 µF	- High temperature, 2,000 hours at 125°C - Low ESR at low temperature
		EEE-TK	-40 ~ +125°C	(10 ~ 35 VDC) 47 ~ 4700 µF	- High temperature, 3,000 hours at 125°C - Low ESR at low temperature
		EEE-TP	-40 ~ +125°C	(10 ~ 35 VDC) 47 ~ 470 µF	- Low ESR at Low Temperatures 2,000~3,000 hours at 125°C
	Low ESR, Long Life	EEE-FT	-55 ~ +105°C	(6.3 ~ 50 VDC) 10 ~ 2,200 µF	2000 hours at 105°C - Low ESR in smaller package - High Temperature Reflow (260°C)
		EEE-FP	-55 ~ +105°C	(6.3 ~ 35 VDC) 100 ~ 1,800 µF	- Very Low ESR, tantalum replacement - High Temperature Reflow (260°C)
		EEE-FK EEV-FK	-55 ~ +105°C	(6.3 ~ 100 VDC) 3.3 ~ 6,800 µF	- Long life, 2,000~5,000 hours at 105°C - Low ESR, Tantalum replacement - Compact, wide size range: 4~18 mm (Ø)
		EEE-FC	-40 ~ +105°C	(6.3 ~ 50 VDC) 1 ~ 1,500 µF	1,000 hours at 105°C - Low impedance
	Bi-Polar	EEE-__A__N	-40 ~ +85°C	(6.3 ~ 50 VDC) 0.22 ~ 47 µF	- General Purpose 5.4 mm height (< Ø 6)
		EEE-HP	-40 ~ +105°C	(6.3 ~ 50 VDC) 0.22 ~ 47 µF	- Industrial Grade 5.8 mm height
	Hybrid	EEH-ZA	-55 ~ +105°C	(25 ~ 63 VDC) 10 ~ 330 µF	- Up to 5,000 Hours at 105°C - Open Circuit Failure Mode - Low ESR, High Ripple Current
		EEH-ZC	-55 ~ +125°C	(25 ~ 63 VDC) 10 ~ 330 µF	- Up to 4,000 Hours at 125°C - Open Circuit Failure Mode

NOTE: Surface Mount Type RoHS Compliant Part Number Prefix:

- EEE (Diameter: 3~10mm)
- EEV (Diameter: 12.5~18mm)

For higher temperature reflow, use EEE (A_) suffix:

- 260°C Max. Reflow: AP & AR (4~10mm Ø)
- 245°C Max. Reflow: AQ & AM (12.5~18mm Ø)

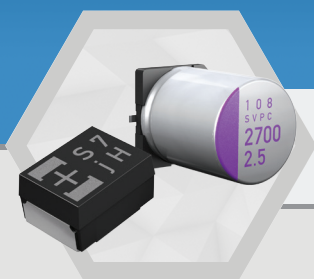
	Series	Operating Voltage	Temperature Characteristics	Capacitance Range	Features
Ceramic	ECC-T3	1kVDC - 5kVDC	SL/GP	10 pF to 68 pF	Molded SMD case for reflow soldering
	ECK-T3	1kVDC - 5kVDC	Y5P	100 pF to 470 pF	Molded SMD case for reflow soldering
	ECC-TBC	250VAC	SL/GP	10 pF to 68 pF	- UL(CSA)/SEMCO Y2 approval, 1500 VAC for 1 minute - SMD (7.1 x 6.3 x 2.5 mm)
	ECK-TBC	250VAC	Y5P, Y5U, Y5V	100 pF to 4,700 pF	- UL(CSA)/SEMCO Y2 approval, 1500 VAC for 1 minute - SMD (7.1 x 6.3 x 2.5 mm)
	ECK-THC	250VAC	Y1	100 to 470 pF	Safety Requirement Recognition: UL, SEMKO, NEMKO, FIMKO, DEMKO
	ECC-TFC	250VAC	SL/GP	5 pF to 330 pF	- UL(CSA)/SEMCO Y2 approval, 1500 VAC for 1 minute - SMD, small size (5.7 x 4.5 x 2.3 mm)
	ECK-TFC	250VAC	Y5P, Y5U, Y5V	470 pF to 4,700 pF	- UL(CSA)/SEMCO Y2 approval, 1500 VAC for 1 minute - SMD, small size (5.7 x 4.5 x 2.3 mm)

		Series	Operating Temp.	Ratings	Features	Applications
Metallized Film, Leaded	Plastic	ECWF-E	-40 ~ +105°C	1.0 ~ 2.2 μ F 450 VDC	Boxed construction	- Active Filter Circuits - High Frequency - High Current circuits
	Polyester	ECQ-E(H)	-40 ~ +105°C	0.1 ~ 2.2 μ F 450 VDC	Smaller Size	Active filtering circuit
		ECQ-E(F)	-40 ~ +85°C	0.001 ~ 10 μ F 100 ~ 1250 VDC	- Wide capacitance range - Compact size	General purpose applications
		ECQ-E(B)	-40 ~ +85°C	0.01 ~ 4.7 μ F 250 VDC	- Wide capacitance range - Miniaturized	General purpose applications
	Polypropylene	ECW-F(L)	-40 ~ +105°C	0.022 ~ 2.4 μ F, 400 VDC 0.01 ~ 1.3 μ F, 630 VDC	- Low Dissipation Factor - High Voltage	- High Frequency - High Current Circuits
		ECW-F(B)	-40 ~ +105°C	0.022 ~ 0.47 μ F 400 VDC	Low Dissipation Factor	- High Frequency - High Current Circuits
		ECW-H(V)	-40 ~ +105°C	0.001 ~ 0.1 μ F 800 ~ 2000 VDC	Low Dissipation Factor	High pulse circuits (TV, display, electronic ballast)
		ECW-F(A)	-40 ~ +105°C	0.1 ~ 6.8 μ F 250/450/630 VDC	- Miniaturized Size - High Reliability Design	Active Filter in PFC Circuits
		ECW-F(D)	-40 ~ +105°C	0.47 ~ 2.2 μ F 450 VDC	- Miniaturized Size - Flame Retardant Case - Low Hum Noise	- High Frequency - High Current Circuits
		ECW-H(A)	-40 ~ +105°C	0.001 ~ 0.047 μ F 800/1600 VDC	- Miniaturized Size - High Product Safety - Low Hum Noise	- Resonance circuits found in AC to DC Power Supplies - Active Filter in PFC Circuit
		ECW-H(C)	-40 ~ +85°C	0.18 ~ 0.33 μ F 630 VDC	- Miniaturized Size - High Product Safety - Low Hum Noise	Resonance-Microwave & Infrared Heat Cooker
		EZP-E	-40 ~ +70°C	10 μ F ~ 60 μ F 800/1100 VDC	- Rectangle type - High safety - Low hum noise	DC Linkage
	Metallized Polyester	ECQ-U(G)	-40 ~ +100°C	0.01 ~ 1.0 μ F 300 VAC (IEC384-14)	- Flame retardant case - Equipped with safety mechanism - UL, CSA, SEMKO, DEMKO, NEMKO, FIMKO, VDE, SEV approved (Class X1)	Noise suppressor for AC line
		ECQ-U(L)	-40 ~ +100°C	0.001 ~ 2.2 μ F 250 VAC (M, CSA) 275 VAC (IEC384-14)	- Smaller size than ECQ-U(V) or ECQ-U(G) - UL, CSA, VDE approved (Class X2) - Equipped with safety mechanism	High performance, fuse function in AC line
	Metallized Polypropylene	ECQ-U(A)	-40 ~ +100°C	0.1 ~ 2.2 μ F 275 VAC	- Smaller size than ECQ-U(V) or ECQ-U(G) - UL, CSA, VDE approved (Class X2) - Equipped with safety mechanism	High performance, fuse function in AC line
Film, Leaded Interference Suppressors						

		Series	Operating Temp.	Ratings	Features	Applications
Film, Surface Mount Chip	Stacked Metalized	ECH-U(X)	-55 ~ +105°C	0.0001~0.22 μ F 16/50 VDC	- Non-inductive, stacked - Miniature - Reflow soldering	High density mounting SMD (industrial grade)
		ECH-U(C)	-55 ~ +105°C	0.01~0.22 μ F 100 VDC	- Non-inductive, stacked - Miniature - Reflow and flow solderability	- High density mounting SMD - Industrial Use - Filters; oscillators
		ECW-U(C)	-55 ~ +105°C -55 ~ +125°C	0.001 ~ 1.0 μ F 100, 250, 630 VDC	- Non-inductive, stacked - Miniature - Reflow Soldering	High density mounting SMD (commercial grade)
		ECW-U(V16)	-55 ~ +85°C	0.001~0.12 μ F 250 VDC	- Non-inductive, stacked - Miniature - Similar to polyester film cap	High density mounting SMD (commercial grade)
		ECW-U(X)	-55 ~ +105°C	0.001 ~ 0.01 μ F 100 VDC	- Non-inductive, stacked - Reflow soldering	- Electronic exchange - Ringer circuit telephone & PBX
		ECP-U(A)	-40 ~ +85°C	0.1 ~ 1.0 μ F 16 VDC	- Non-inductive, stacked - Reflow soldering	Coupling, filtering & PLL

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