

# Type 930, Metallized Polypropylene Capacitors for DC Filtering

## Low Dissipation, High Voltage/High Frequency Switching Power Supplies



Type 930 metallized polypropylene capacitors are designed for general purpose filtering applications. Their stability and low loss characteristics make them an excellent choice for blocking, filtering, bypassing, coupling and decoupling applications. This Series is UL recognized for construction only under UL File Number E128034(N).

### Highlights

- Low dissipation factor
- Self healing
- UL recognized

### Specifications

Capacitance Range	0.22 to 10.0 $\mu$ F
Capacitance Tolerance	$\pm$ 10 % (K) Standard; $\pm$ 5% (J) Optional
Rated Voltage	100 to 630 Vdc (70 to 250 Vac, 60 Hz)
Operating Temperature Range	-55 $^{\circ}$ C to 105 $^{\circ}$ C* *Full rated voltage at 85 $^{\circ}$ C - derated linearly to 50% rated at 105 $^{\circ}$ C
Maximum rms Current	Check tables for values
Insulation Resistance	200,000 M $\Omega$ x $\mu$ F
Test Voltage between Terminals @ 25 $^{\circ}$ C	200% rated DC voltage for 60 s
Test Voltage between Terminals & Case @ 25 $^{\circ}$ C	3 kVac @ 50/60 Hz for 60 s
Life Test	1,000 h @ 85 $^{\circ}$ C, 150% rated DC voltage
Life Expectancy	60,000 h @ rated Vdc, 70 $^{\circ}$ C 30,000 h @ rated Vac, 70 $^{\circ}$ C

### Regulatory Information

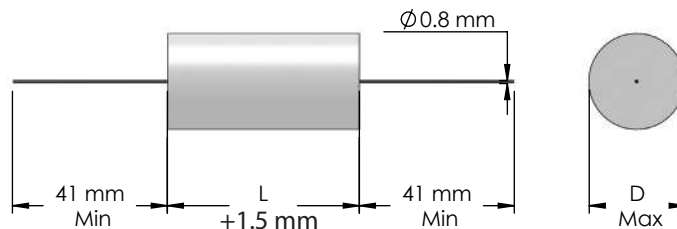
### Dimensions

#### Construction Diagram



#### Construction Details

Case Material	UL510 Polyester Tape Wrap
Resin Material	UL94V-0 Epoxy Fill
Terminal Material	Tin Plated Copper



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### Part Numbering System

<b>930</b>   <b>Series</b>	<b>C</b>   <b>Termination Code</b>	<b>6</b>   <b>Voltage Code</b>	<b>P</b>   <b>Capacitance Decimal Point</b>	<b>22</b>   <b>Capacitance Significant figures in <math>\mu\text{F}</math></b>	<b>K</b>   <b>Tolerance Code</b>	<b>-F</b>   <b>RoHS Compliant Indicator</b>
930	C = Tinned Copper Wire F = Insulated Stranded Wire H = Tinned Lugs	6 = 600 Vdc 8 = 800 Vdc 10 = 1000 Vdc 12 = 1200 Vdc	16 = 1600 Vdc 20 = 2000 Vdc 30 = 3000 Vdc S = 0.0 P = 0. W = No decimal point		K = $\pm 10\%$ J = $\pm 5\%$	

### Ratings

**NOTE:** Other ratings, sizes and performance specifications are available. Contact us.

Cap. ( $\mu\text{F}$ )	Catalog Part Number	D mm	L mm	ESR 20-100 kHz (m $\Omega$ )	dV/dt (V/ $\mu\text{s}$ )	Max. Ripple Current (A) 20 kHz						
						Case Temperature						
						25 °C	35 °C	45 °C	55 °C	65 °C	75 °C	85 °C
<b>100 Vdc (70 Vac)</b>												
.22	930C1P22K-F	7.0	19.0	---	25	2.3	2.3	2.3	2.3	2.3	1.8	1.0
.27	930C1P27K-F	7.6	19.0	---	25	2.6	2.6	2.6	2.6	2.4	1.9	1.1
.33	930C1P33K-F	8.2	19.0	---	25	2.8	2.8	2.8	2.8	2.6	2.2	1.2
.39	930C1P39K-F	8.8	19.0	---	25	3.1	3.1	3.1	3.1	2.9	2.3	1.3
.47	930C1P47K-F	9.5	19.0	37	25	3.7	3.4	3.1	2.8	2.5	2.0	1.4
.56	930C1P56K-F	8.2	25.4	35	14	3.9	3.6	3.3	2.9	2.6	2.1	1.5
.68	930C1P68K-F	8.8	25.4	33	14	4.1	3.8	3.5	3.1	2.8	2.2	1.6
.82	930C1P82K-F	9.6	25.4	31	14	4.3	4.0	3.6	3.2	2.9	2.3	1.7
1.00	930C1W1K-F	10.7	25.4	26	14	5.5	5.1	4.7	4.2	3.6	2.8	2.6
1.20	930C1W1P2K-F	11.5	25.4	24	14	5.7	5.3	4.9	4.4	3.8	3.0	2.8
1.50	930C1W1P5K-F	12.7	25.4	20	14	6.1	5.5	5.1	4.6	4.0	3.2	3.1
1.80	930C1W1P8K-F	13.7	25.4	19	14	6.3	5.7	5.3	4.8	4.1	3.4	3.0
2.00	930C1W2K-F	12.3	31.7	18	10	6.5	6.0	5.5	4.9	4.2	3.5	3.2
2.20	930C1W2P2K-F	12.9	31.7	18	10	6.8	6.3	5.7	2.1	4.4	3.6	3.3
2.70	930C1W2P7K-F	14.1	31.7	17	10	7.1	6.5	6.0	5.3	4.6	3.7	3.4
3.00	930C1W3K-F	14.8	31.7	16	10	7.3	6.7	6.2	5.5	4.8	3.9	3.5
3.30	930C1W3P3K-F	15.4	31.7	16	10	7.4	6.8	6.4	5.6	4.9	4.0	3.6
3.90	930C1W3P9K-F	16.6	31.7	15	10	7.6	6.9	6.6	5.8	5.1	4.1	3.7
4.00	930C1W4K-F	13.6	44.4	15	6	7.8	7.0	6.7	5.9	5.2	4.2	3.8
4.70	930C1W4P7K-F	14.7	44.4	15	6	8.1	7.4	6.8	6.0	5.3	4.3	3.9
5.00	930C1W5K-F	15.1	44.4	14	6	8.3	7.6	7.0	6.2	5.4	4.4	4.0
5.60	930C1W5P6K-F	15.8	44.4	14	6	8.4	7.7	7.1	6.4	5.5	4.5	4.1
6.00	930C1W6K-F	16.4	44.4	14	6	8.5	7.8	7.2	6.5	5.6	4.6	4.2
6.80	930C1W6P8K-F	17.3	44.4	13	6	8.5	8.0	7.4	6.7	5.7	4.7	4.3
8.00	930C1W8K-F	18.7	44.4	13	6	8.6	8.3	7.7	6.8	6.0	4.8	4.4
8.20	930C1W8P2K-F	18.9	44.4	13	6	8.8	8.6	8.0	7.0	6.1	4.9	4.5
10.00	930C1W10K-F	20.7	44.4	12	6	9.0	9.0	8.5	7.6	6.6	5.4	4.9
<b>250 Vdc (175 Vac)</b>												
.10	930C2P1K-F	8.0	19.0	---	37	1.5	1.5	1.5	1.5	1.5	1.5	.09
.12	930C2P12K-F	8.0	19.0	---	37	1.9	1.9	1.9	1.9	1.9	1.7	1.0
.15	930C2P15K-F	8.5	19.0	---	37	2.3	2.3	2.3	2.3	2.3	1.9	1.1
.18	930C2P18K-F	9.0	19.0	---	37	2.7	2.7	2.7	2.7	2.5	2.0	1.2

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Cap. ( $\mu$ F)	Catalog Part Number	D mm	L mm	ESR 20-100 kHz (m $\Omega$ )	dV/dt (V/ $\mu$ s)	Max. Ripple Current (A) 20 kHz						
						Case Temperature						
25 °C	35 °C	45 °C	55 °C	65 °C	75 °C	85 °C						
<b>250 Vdc (175 Vac)</b>												
.22	930C2P22K-F	8.5	25.4	---	21	1.9	1.9	1.9	1.9	1.9	1.9	1.3
.27	930C2P27K-F	8.5	25.4	---	21	2.4	2.4	2.4	2.4	2.4	2.2	1.4
.33	930C2P33K-F	9.2	25.4	---	21	2.9	2.9	2.9	2.9	2.9	2.3	1.5
.39	930C2P39K-F	9.9	25.4	---	21	3.4	3.4	3.4	3.2	2.9	2.3	1.6
.47	930C2P47K-F	10.7	25.4	35	21	3.8	3.7	3.6	3.4	2.9	2.4	1.7
.56	930C2P56K-F	11.8	25.4	33	21	3.9	3.8	3.7	3.5	3.1	2.5	1.8
.68	930C2P68K-F	12.0	31.7	32	15	4.0	3.9	3.8	3.7	3.2	2.6	1.9
.82	930C2P82K-F	12.0	31.7	31	15	4.2	4.1	4.0	3.9	3.4	2.8	2.0
1.00	930C2W1K-F	13.0	32.0	28	15	4.4	4.4	4.4	4.4	4.3	3.5	3.2
1.20	930C2W1P2K-F	14.1	32.0	27	15	4.7	4.6	4.5	5.0	4.5	3.7	3.3
1.50	930C2W1P5K-F	15.6	32.0	26	15	5.1	5.0	4.9	4.4	4.7	3.9	3.5
1.80	930C2W1P8K-F	16.9	31.7	25	15	5.9	5.8	5.7	5.7	5.0	4.1	3.7
2.00	930C2W2K-F	17.8	31.7	21	15	7.2	7.2	6.8	6.0	5.2	4.3	3.9
2.20	930C2W2P2K-F	16.5	44.4	20	9.0	8.4	7.5	7.0	6.3	5.4	4.5	4.1
2.70	930C2W2P7K-F	17.0	44.4	19	9.0	8.6	7.8	7.3	6.6	5.7	4.7	4.3
3.00	930C2W3K-F	17.8	44.4	18	9.0	9.0	8.3	7.6	6.8	5.9	4.8	4.4
3.30	930C2W3P3K-F	18.6	44.4	18	9.0	9.0	8.4	7.8	7.0	6.0	4.9	4.5
3.90	930C2W3P9K-F	20.2	44.4	17	9.0	9.0	8.5	8.0	7.2	6.2	5	4.6
4.00	930C2W4K-F	20.4	44.4	16	9.0	9.0	8.5	8.2	7.4	6.3	5.1	4.7
4.70	930C2W4P7K-F	22.0	44.4	16	9.0	9.0	8.8	8.5	7.7	6.6	5.3	4.9
5.00	930C2W5K-F	22.6	44.4	15	9.0	9.0	9.0	8.8	7.9	6.8	5.6	5.1
5.60	930C2W5P6K-F	23.9	44.4	15	9.0	9.0	9.0	8.9	8.0	7.0	5.8	5.3
6.00	930C2W6K-F	24.7	44.4	15	9.0	9.0	9.0	9.0	8.2	7.2	5.9	5.5
6.80	930C2W6P8K-F	22.4	57.1	15	9.0	9.0	9.0	9.0	8.4	7.4	6.0	5.6
8.00	930C2W8K-F	24.2	57.1	14	9.0	9.0	9.0	9.0	8.7	7.8	6.3	5.8
8.20	930C2W8P2K-F	24.5	57.1	14	9.0	9.0	9.0	9.0	8.8	7.9	6.4	5.9
10.00	930C2W10K-F	26.9	57.1	13	9.0	9.0	9.0	9.0	9.0	8.3	6.8	6.2
<b>400 Vdc (250 Vac)</b>												
.047	930C4S47K-F	8.0	19.0	---	49	1.0	1.0	1.0	1.0	1.0	1.0	0.9
.056	930C4S56K-F	8.0	19.0	---	49	1.1	1.1	1.1	1.1	1.1	1.1	0.9
.068	930C4S68K-F	8.0	19.0	---	49	1.4	1.4	1.4	1.4	1.4	1.4	1.0
.082	930C4S82K-F	8.1	19.0	---	49	1.7	1.7	1.7	1.7	1.7	1.6	1.1
.10	930C4P1K-F	8.8	19.0	---	49	2.0	2.0	2.0	2.0	2.0	1.9	1.3
.12	930C4P12K-F	7.6	25.4	---	28	1.4	1.4	1.4	1.4	1.4	1.4	1.4
.15	930C4P15K-F	8.5	25.4	---	28	1.7	1.7	1.7	1.7	1.7	1.7	1.6
.18	930C4P18K-F	9.0	25.4	---	28	2.1	2.1	2.1	2.1	2.1	2.1	1.7
.22	930C4P22K-F	9.8	25.4	---	28	2.6	2.6	2.6	2.6	2.6	2.5	1.8
.27	930C4P27K-F	10.7	25.4	---	28	3.1	3.1	3.1	3.1	3.1	2.7	1.9
.33	930C4P33K-F	11.9	25.4	---	28	3.8	3.8	3.8	3.8	3.5	2.9	2.0
.39	930C4P39K-F	12.8	25.4	---	28	4.1	4.1	4.1	4.1	3.7	3.1	2.1
.47	930C4P47K-F	12.0	32.0	32	20	5.7	5.5	5.0	4.4	3.8	3.2	2.2
.56	930C4P56K-F	12.8	32.0	31	20	5.7	5.7	5.3	4.4	4.1	3.3	2.3

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Cap. ( $\mu$ F)	Catalog Part Number	D mm	L mm	ESR 20-100 kHz (m $\Omega$ )	dV/dt (V/ $\mu$ s)	Max. Ripple Current (A) 20 kHz						
						Case Temperature						
						25 °C	35 °C	45 °C	55 °C	65 °C	75 °C	85 °C
<b>400 Vdc (250 Vac)</b>												
.68	930C4P68K-F	14.0	32.0	30	20	5.7	5.7	5.5	4.8	4.3	3.5	2.4
.82	930C4P82K-F	15.2	32.0	28	20	5.7	5.7	5.6	5.3	4.5	3.7	2.6
1.00	930C4W1K-F	16.6	32.0	27	20	5.7	5.7	5.7	5.7	5.7	4.7	4.3
1.20	930C4W1P2K-F	18.1	32.0	26	20	6.3	6.2	6.0	5.9	5.8	4.9	4.5
1.50	930C4W1P5K-F	18.0	44.4	25	13	7.0	6.9	6.7	6.6	6.5	5.2	4.7
1.80	930C4W1P8K-F	18.2	44.4	23	13	8.0	7.9	7.8	7.7	6.8	5.5	5.0
2.00	930C4W2K-F	19.1	44.4	21	13	9.0	9.0	9.0	8.0	7.0	5.7	5.2
2.20	930C4W2P2K-F	21.0	44.4	20	13	9.0	9.0	9.0	8.3	7.4	5.9	5.4
2.70	930C4W2P7K-F	22.0	44.4	19	13	9.0	9.0	9.0	8.6	7.6	6.0	5.6
3.00	930C4W3K-F	23.1	44.4	17	13	9.0	9.0	9.0	9.0	7.9	6.4	5.9
3.30	930C4W3P3K-F	24.1	44.4	16	13	9.0	9.0	9.0	9.0	8.1	6.6	6.3
3.90	930C4W3P9K-F	26.2	44.4	15	13	9.0	9.0	9.0	9.0	8.3	6.8	6.5
<b>630 Vdc (250 Vac)</b>												
.022	930C6S22K-F	8.0	19.0	---	74	0.8	0.8	0.8	0.8	0.8	0.8	0.8
.027	930C6S27K-F	8.0	19.0	---	74	1.0	1.0	1.0	1.0	1.0	1.0	0.9
.033	930C6S33K-F	8.5	19.0	---	74	1.2	1.2	1.2	1.2	1.2	1.2	1.0
.039	930C6S39K-F	9.1	19.0	---	74	1.4	1.4	1.4	1.4	1.4	1.4	1.0
.047	930C6S47K-F	9.9	19.0	---	74	1.7	1.7	1.7	1.7	1.7	1.6	1.1
.056	930C6S56K-F	10.6	19.0	---	74	2.1	2.1	2.1	2.1	2.1	1.7	1.2
.068	930C6S68K-F	9.0	25.4	---	43	1.3	1.3	1.3	1.3	1.3	1.3	1.3
.082	930C6S82K-F	9.5	25.4	---	43	1.6	1.6	1.6	1.6	1.6	1.6	1.4
.10	930C6P1K-F	11.0	25.4	---	43	1.9	1.9	1.9	1.9	1.9	1.9	1.6
.12	930C6P12K-F	11.2	25.4	---	43	2.3	2.3	2.3	2.3	2.3	2.3	1.8
.15	930C6P15K-F	13.0	32.0	---	30	2.9	2.9	2.9	2.9	2.9	2.6	1.9
.18	930C6P18K-F	13.7	32.0	---	30	3.5	3.5	3.5	3.5	3.5	2.7	1.9
.22	930C6P22K-F	12.6	32.0	---	30	2.8	2.8	2.8	2.8	2.8	2.8	2.3
.27	930C6P27K-F	13.8	32.0	---	30	3.5	3.5	3.5	3.5	3.5	3.3	2.3
.33	930C6P33K-F	15.1	32.0	---	30	4.3	4.3	4.3	4.3	4.3	3.5	2.4
.39	930C6P39K-F	16.2	32.0	---	30	5.0	5.0	5.0	5.0	4.6	3.7	2.5
.47	930C6P47K-F	17.7	37.0	28	20	6.8	6.3	5.8	5.2	4.5	3.6	2.6
.56	930C6P56K-F	15.4	44.4	26	19	7.4	6.9	6.3	5.6	4.8	4.0	2.8
.68	930C6P68K-F	18.0	44.4	25	19	7.8	7.2	6.6	5.9	5.1	4.2	2.9
.82	930C6P82K-F	18.4	44.4	22	19	8.1	7.5	6.9	6.2	5.3	4.3	3.1
1.00	930C6W1K-F	20.2	47.0	18	19	8.6	7.9	7.3	6.5	5.6	4.6	3.6

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