

# Type 935, Polypropylene Capacitors for High Frequency Filtering

## High Current Capacitors for Switching Power Supplies



Type 935 metallized polypropylene capacitors are designed for filtering applications in switching power supplies that operate in the 20-100 kHz range. Their low ESR, high current and high capacitance gives them an advantage over general purpose types. This series is UL recognized for construction only under UL File Number E128034(N).

### Highlights

- Low ESR
- High current
- High capacitance
- Self healing
- UL recognized
- Available with lugs

### Specifications

Capacitance Range	1.0 to 30.0 $\mu$ F
Capacitance Tolerance	$\pm$ 10 % (K) Standard; $\pm$ 5% (J) Optional
Rated Voltage	100 to 400 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

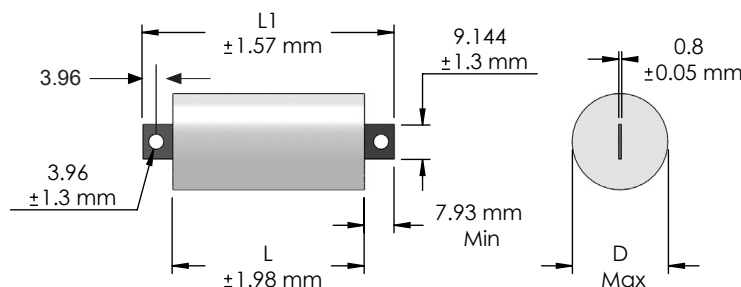
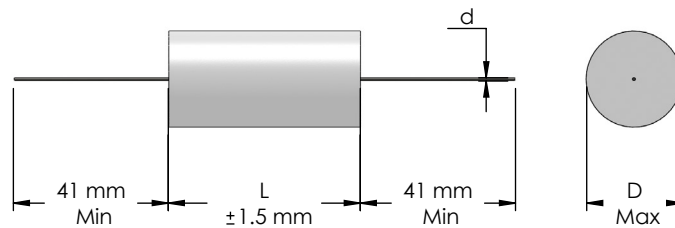
### Dimensions

#### 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>935</b>   <b>Series</b> 935	<b>C</b>   <b>Termination Code</b> C = Tinned Copper Wire F = Insulated Stranded Wire H = Tinned Lugs	<b>6</b>   <b>Voltage Code</b> 6 = 600 Vdc 8 = 800 Vdc 10 = 1000 Vdc 12 = 1200 Vdc	<b>P</b>   <b>Capacitance Decimal Point</b> 16 = 1600 Vdc 20 = 2000 Vdc 30 = 3000 Vdc S = 0.0 P = 0. W = No decimal point	<b>22</b>   <b>Capacitance Significant figures in <math>\mu\text{F}</math></b> 22	<b>K</b>   <b>Tolerance Code</b> K = $\pm 10\%$ J = $\pm 5\%$	<b>-F</b>   <b>RoHS Compliant Indicator</b> -F
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### Ratings

#### Wire Leads

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

Cap. ( $\mu\text{F}$ )	Catalog Part Number	D mm	L mm	d mm	Max. ESR		Max. Ripple Current Amps RMS 20-100 kHz												
					20-100 kHz (m $\Omega$ )	dV/dt (V/ $\mu\text{s}$ )	Case Temperature												
													25 °C	35 °C	45 °C	55 °C	65 °C	75 °C	85 °C
<b>100 Vdc (70 Vac)</b>																			
1	935C1W1K-F	11.9 $\pm$ 1.6	19.0	0.8	15	25	9.2	8.5	7.8	7.0	6.0	4.9	4.5						
2	935C1W2K-F	13.6 $\pm$ 1.6	23.8	0.8	12	16	10.8	10.0	9.1	8.2	7.0	5.8	5.3						
3	935C1W3K-F	15.8 $\pm$ 2.4	23.8	1.0	11	16	12.1	11.2	10.3	9.2	8.0	6.5	5.9						
5	935C1W5K-F	16.3 $\pm$ 2.4	31.7	1.0	10	10	13.8	12.7	11.6	10.4	9.0	7.4	6.7						
10	935C1W10K-F	20.4 $\pm$ 2.4	38.1	1.0	9	8	15.0	15.0	14.2	12.7	11.0	9.0	8.2						
20	935C1W20K-F	22.2 $\pm$ 3.2	57.1	1.0	8	5	15.0	15.0	15.0	15.0	13.6	11.1	10.0						
30	935C1W30K-F	27.3 $\pm$ 3.2	57.1	1.0	6	5	15.0	15.0	15.0	15.0	15.0	12.4	11.4						
<b>200 Vdc (140 Vac)</b>																			
1	935C2W1K-F	11.4 $\pm$ 1.6	31.7	0.8	20	15	7.3	7.3	7.3	7.3	7.2	5.9	5.4						
2	935C2W2K-F	15.4 $\pm$ 2.4	31.7	0.8	15	15	12.0	12.0	11.3	10.1	8.7	7.1	6.5						
3	935C2W3K-F	16.6 $\pm$ 2.4	38.1	1.0	13	12	15.0	13.8	12.6	11.3	9.8	8.0	7.3						
5	935C2W5K-F	19.5 $\pm$ 2.4	44.4	1.0	11	9	15.0	15.0	14.7	13.1	11.4	9.3	8.5						
10	935C2W10K-F	23.0 $\pm$ 3.2	57.1	1.0	9	7	15.0	15.0	15.0	15.0	13.8	11.3	10.3						
20	935C2W20K-F	33.4 $\pm$ 3.2	57.1	1.0	6	7	15.0	15.0	15.0	15.0	15.0	14.1	12.8						
<b>400 Vdc (250 Vac)</b>																			
1	935C4W1K-F	15.7 $\pm$ 2.4	38.1	0.8	19	19	9.5	9.5	9.5	9.5	9.5	7.8	7.1						
2	935C4W2K-F	20.4 $\pm$ 2.4	44.4	1.0	15	16	15.0	15.0	15.0	13.4	11.6	9.5	8.7						
3	935C4W3K-F	24.4 $\pm$ 3.2	44.4	1.0	12	16	15.0	15.0	15.0	15.0	13.1	10.7	9.8						
5	935C4W5K-F	27.1 $\pm$ 3.2	57.1	1.0	10	11	15.0	15.0	15.0	15.0	15.0	12.5	11.4						
10	935C4W10K-F	39.2 $\pm$ 3.2	57.1	1.0	6	11	15.0	15.0	15.0	15.0	15.0	15.0	14.1						

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### Lug Leads

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

Cap. ( $\mu$ F)	Catalog Part Number	D mm	L mm	L1 mm	Max. ESR		Max. Ripple Current Amps RMS 20-100 kHz						
					20-100 kHz (m $\Omega$ )	dV/dt (V/ $\mu$ s)	Case Temperature						
100 Vdc (70 Vac)													
1	935H1W1K-F	11.9 $\pm$ 1.6	19.0	41.6	15	25	10.3	9.5	8.7	7.8	6.7	5.5	5.0
2	935H1W2K-F	13.6 $\pm$ 1.6	23.8	46.4	12	16	12.0	11.0	10.0	8.9	7.8	6.3	5.8
3	935H1W3K-F	15.8 $\pm$ 2.4	23.8	46.4	11	16	13.3	12.3	11.2	10.0	8.7	7.1	6.5
5	935H1W5K-F	16.3 $\pm$ 2.4	31.7	53.3	10	10	14.8	13.7	12.5	11.2	9.7	7.9	7.2
10	935H1W10K-F	20.4 $\pm$ 2.4	38.1	57.2	9	8	17.8	16.5	15.0	13.5	11.7	9.5	8.7
20	935H1W20K-F	22.2 $\pm$ 3.2	57.1	77.6	8	5	21.6	20.0	18.3	16.4	14.2	11.6	10.6
30	935H1W30K-F	27.3 $\pm$ 3.2	57.1	77.6	6	5	24.3	22.5	20.5	18.4	15.9	13.0	11.9
200 Vdc (140 Vac)													
1	935H2W1K-F	11.4 $\pm$ 1.6	31.7	53.3	20	15	7.3	7.3	7.3	7.3	7.3	6.4	5.8
2	935H2W2K-F	15.4 $\pm$ 2.4	31.7	53.3	15	15	14.3	13.3	12.1	10.8	9.4	7.7	7.0
3	935H2W3K-F	16.6 $\pm$ 2.4	38.1	57.2	13	12	15.9	14.7	13.5	12.0	10.4	8.5	7.8
5	935H2W5K-F	19.5 $\pm$ 2.4	44.4	65.3	11	9	18.3	17.0	15.5	13.9	12.0	9.8	8.9
10	935H2W10K-F	23.0 $\pm$ 3.2	57.1	77.6	9	7	22.4	20.7	18.9	16.9	14.6	12.0	10.9
20	935H2W20K-F	33.4 $\pm$ 3.2	57.1	77.6	6	7	27.4	25.4	23.2	20.7	17.9	14.7	13.4
400 Vdc (250 Vac)													
1	935H4W1K-F	15.7 $\pm$ 2.4	38.1	57.2	19	19	9.5	9.5	9.5	9.5	9.5	8.3	7.5
2	935H4W2K-F	20.4 $\pm$ 2.4	44.4	65.3	15	16	15.0	15.0	15.0	14.2	12.3	10.0	9.1
3	935H4W3K-F	24.4 $\pm$ 3.2	44.4	65.3	12	16	21.1	19.5	17.8	15.9	13.8	11.3	10.3
5	935H4W5K-F	27.1 $\pm$ 3.2	57.1	77.6	10	11	24.4	22.6	20.6	18.5	16.0	13.1	11.9
10	935H4W10K-F	39.2 $\pm$ 3.2	57.1	77.6	6	11	30.0	27.8	25.4	22.7	19.7	16.1	14.7

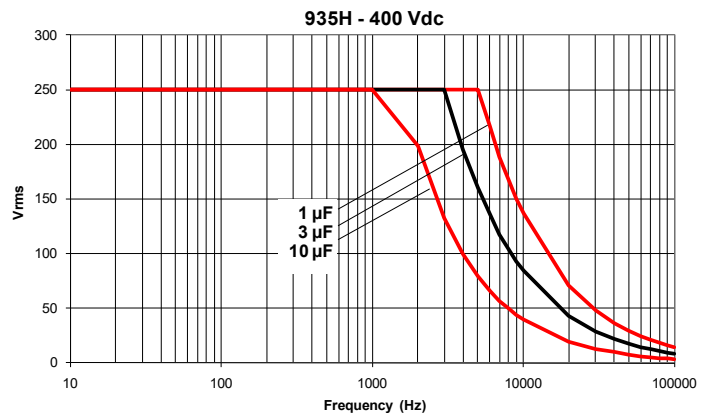
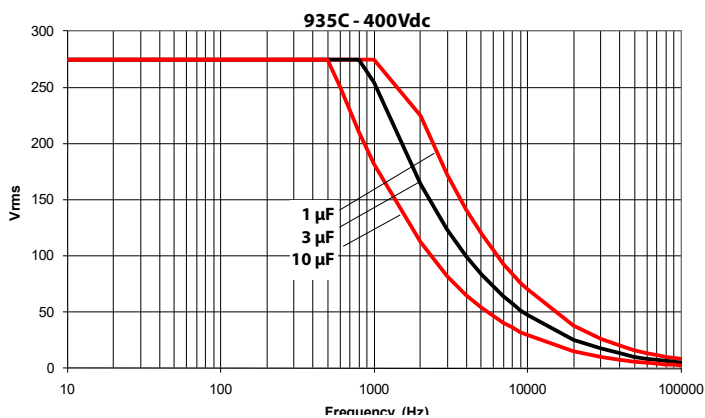
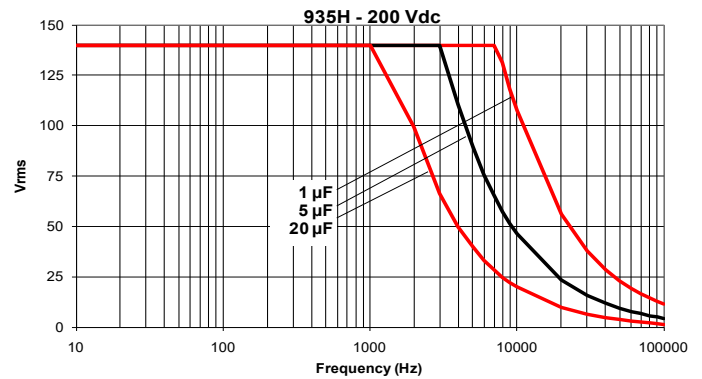
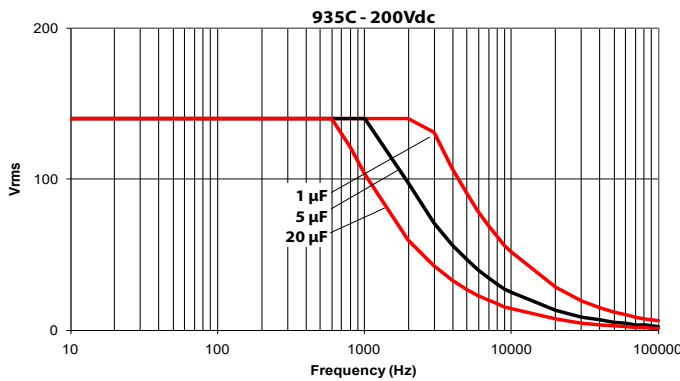
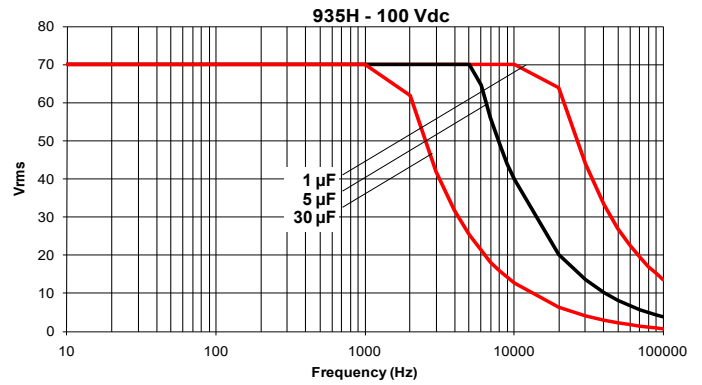
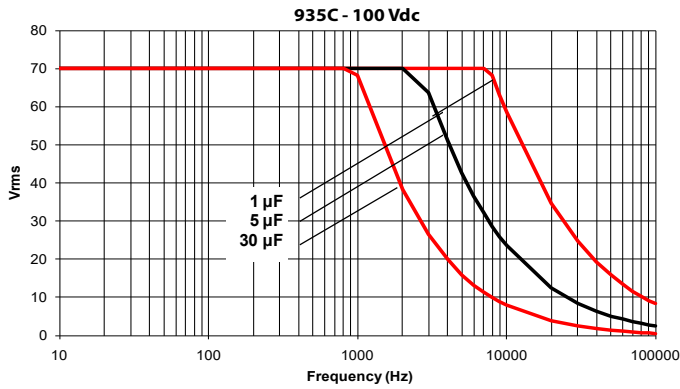
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### RMS Voltage vs Frequency @ 25 °C

#### Wire Leads

#### Lug Leads



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