

## Film Capacitors

### High Frequency, Wrap-and-Fill, Metallized Polypropylene



#### FEATURES

- Excellent AC performance
- Low Power dissipation
- Low dielectric absorption
- Close tolerance
- High stability

#### PERFORMANCE CHARACTERISTICS

**Operating Temperature:** - 55 °C to + 85 °C

**Voltage derating:**

At + 105 °C, 50 % of + 85 °C rating

**ESR:** 20 kHz to 100 kHz

**Capacitance Range:** 0.022 μF to 10.0 μF

**Capacitance Tolerance:** ± 20 %, ± 10 %, ± 5 %

**DC Voltage Rating:** 100 WVDC to 630 WVDC

**AC Voltage Rating:** 70 Vrms to 275 Vrms, 60 Hz to 400 Hz

**Dissipation Factor:** 0.1 % maximum  
Measure all units at 1000 Hz at + 25 °C

**DC Voltage Test:** 200 % of rated voltage for 2 minutes

**AC Voltage Test:** 130 % of rated rms voltage at 60 Hz for 15 seconds

**Insulation Resistance:** Measured at 100 WVDC after a 2 minute charge.

At + 25 °C: 200 000 Megohm - Microfarads  
or 400 000 Megohm minimum.

At + 85 °C: 10 000 Megohm - Microfarads  
or 20 000 Megohm minimum.

At + 105 °C: 1000 Megohm - Microfarads  
or 2000 Megohm minimum.

**Vibration Test (Condition B):** No mechanical damage, short, open or intermittent circuits.

**DC Life Test:** 150 % of rated voltage for 1000 hours at + 85 °C. No open or short circuits. No visible damage.

Maximum Δ CAP ± 1.0 %

Minimum IR = 50 % of initial limit

Maximum DF = 0.12 %

**Humidity Test:** 95 % relative humidity at + 40 °C for 250 hours. No visible damage.

Maximum Δ CAP ± 1.0 %

Minimum IR = 20 % of initial limit

Maximum DF = 0.12 %

**AC Life Test:** 110 % of rated rms voltage at 60 Hz for 1000 hours at + 85 °C.

Maximum Δ CAP ± 5 %

Minimum IR = 50 % of initial limit

Maximum DF = 0.12 %

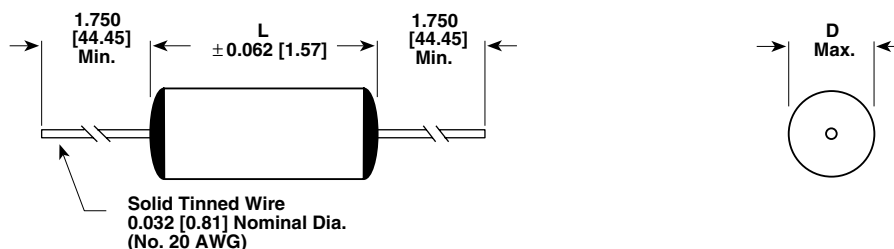
#### PHYSICAL CHARACTERISTICS

**Lead Pull:** 5 pounds (2.3 kilograms) for one minute. No physical damage.

**Lead Bend:** After three complete consecutive bends. No damage.

**Marking:** Sprague® trademark, type or part number, capacitance and voltage.

#### DIMENSIONS in inches [millimeters]



\* Leads to be within 0.062" [1.57 mm] of center line at egress but not less than 0.031" [0.79 mm] from edge.



STANDARD RATINGS in inches [millimeters]												
CAPACITANCE		CASE SIZE		ESR (Milliohms) 20 kHz - 100 KHz	MAXIMUM RIPPLE CURRENT (Amps rms) at 20 kHz Case Temperature*** at							
(μF)	PART NUMBER**	D	L		+ 25 °C	+ 35 °C	+ 45 °C	+ 55 °C	+ 65 °C	+ 75 °C	+ 85 °C	
<b>100 WVDC</b>												
0.22	730P224X9100	0.275 [7.0]	0.75 [19.0]	-	Not applicable. These capacitance values are not customarily used in switched-mode power supplies.							
0.27	730P274X9100	0.298 [7.6]	0.75 [19.0]	-								
0.33	730P334X9100	0.324 [8.2]	0.75 [19.0]	-								
0.39	730P394X9100	0.347 [8.8]	0.75 [19.0]	-	-	-	-	-	-	-	-	
0.47*	730P474X9100	0.376 [9.6]	0.75 [19.0]	37.0	3.7	3.4	3.1	2.8	2.5	2.0	1.4	
0.56	730P564X9100	0.321 [8.2]	1.00 [25.4]	35.0	3.9	3.6	3.3	2.9	2.6	2.1	1.5	
0.68	730P684X9100	0.348 [8.8]	1.00 [25.4]	33.0	4.1	3.8	3.5	3.1	2.8	2.2	1.6	
0.82	730P824X9100	0.377 [9.6]	1.00 [25.4]	31.0	4.3	4.0	3.6	3.2	2.9	2.3	1.7	
1.0*	730P105X9100	0.421 [10.7]	1.00 [25.4]	26.0	5.5	5.1	4.7	4.2	3.6	2.8	2.6	
1.2	730P125X9100	0.454 [11.5]	1.00 [25.4]	24.0	5.7	5.3	4.9	4.4	3.8	3.0	2.8	
1.5	730P155X9100	0.500 [12.7]	1.00 [25.4]	20.0	6.1	5.5	5.1	4.6	4.0	3.2	3.1	
1.8	730P185X9100	0.541 [13.7]	1.00 [25.4]	19.0	6.3	5.7	5.3	4.8	4.1	3.4	3.0	
2.0	730P205X9100	0.486 [12.3]	1.25 [31.8]	18.0	6.5	6.0	5.5	4.9	4.2	3.5	3.2	
2.2	730P225X9100	0.507 [12.9]	1.25 [31.8]	18.0	6.8	6.3	5.7	5.1	4.4	3.6	3.3	
2.7	730P275X9100	0.554 [14.1]	1.25 [31.8]	17.0	7.1	6.5	6.0	5.3	4.6	3.7	3.4	
3.0	730P305X9100	0.581 [14.8]	1.25 [31.8]	16.0	7.3	6.7	6.2	5.5	4.8	3.9	3.5	
3.3	730P335X9100	0.606 [15.4]	1.25 [31.8]	16.0	7.4	6.8	6.4	5.6	4.9	4.0	3.6	
3.9	730P395X9100	0.654 [16.6]	1.25 [31.8]	15.0	7.6	6.9	6.6	5.8	5.1	4.1	3.7	
4.0	730P405X9100	0.537 [13.6]	1.75 [44.5]	15.0	7.8	7.0	6.7	5.9	5.2	4.2	3.8	
4.7	730P475X9100	0.577 [14.7]	1.75 [44.5]	15.0	8.1	7.4	6.8	6.0	5.3	4.3	3.9	
5.0	730P505X9100	0.593 [15.1]	1.75 [44.5]	14.0	8.3	7.6	7.0	6.2	5.4	4.4	4.0	
5.6	730P565X9100	0.624 [15.8]	1.75 [44.5]	14.0	8.4	7.7	7.1	6.4	5.5	4.5	4.1	
6.0	730P605X9100	0.644 [16.4]	1.75 [44.5]	14.0	8.5	7.8	7.2	6.5	5.6	4.6	4.2	
6.8	730P685X9100	0.682 [17.3]	1.75 [44.5]	13.0	8.5	8.0	7.4	6.7	5.7	4.7	4.3	
8.0	730P805X9100	0.735 [18.7]	1.75 [44.5]	13.0	8.6	8.3	7.7	6.8	6.0	4.8	4.4	
8.2	730P825X9100	0.743 [18.9]	1.75 [44.5]	13.0	8.8	8.6	8.0	7.0	6.1	4.9	4.5	
10.0	730P106X9100	0.815 [20.7]	1.75 [44.5]	12.0	9.0	9.0	8.5	7.6	6.6	5.4	4.9	
<b>250 WVDC</b>												
0.1*	730P104X9250	0.279 [7.1]	0.75 [19.0]	-	Not applicable. These capacitance values are not customarily used in switched-mode power supplies.							
0.12	730P124X9250	0.300 [7.6]	0.75 [19.0]	-								
0.15	730P154X9250	0.327 [8.3]	0.75 [19.0]	-								
0.18	730P184X9250	0.353 [9.0]	0.75 [19.0]	-								
0.22*	730P224X9250	0.306 [7.8]	1.00 [25.4]	-								
0.27	730P274X9250	0.333 [8.5]	1.00 [25.4]	-								
0.33*	730P334X9250	0.362 [9.2]	1.00 [25.4]	-								
0.39	730P394X9250	0.389 [9.9]	1.00 [25.4]	-	-	-	-	-	-	-	-	
0.47*	730P474X9250	0.422 [10.7]	1.00 [25.4]	35.0	3.8	3.7	3.6	3.4	2.9	2.4	1.7	
0.56	730P564X9250	0.464 [11.8]	1.00 [25.4]	33.0	3.9	3.8	3.7	3.5	3.1	2.5	1.8	
0.68	730P684X9250	0.425 [10.8]	1.25 [31.8]	32.0	4.0	3.9	3.8	3.7	3.2	2.6	1.9	
0.82	730P824X9250	0.471 [12.0]	1.25 [31.8]	31.0	4.2	4.1	4.0	3.9	3.4	2.8	2.0	
1.0*	730P105X9250	0.513 [13.0]	1.25 [31.8]	28.0	4.4	4.4	4.4	4.4	4.3	3.5	3.2	
1.2	730P125X9250	0.554 [14.1]	1.25 [31.8]	27.0	4.7	4.6	4.5	5.0	4.5	3.7	3.3	
1.5	730P155X9250	0.613 [15.6]	1.25 [31.8]	26.0	5.1	5.0	4.9	5.4	4.7	3.9	3.5	
1.8	730P185X9250	0.667 [17.0]	1.25 [31.8]	25.0	5.9	5.8	5.7	5.7	5.0	4.1	3.7	
2.0*	730P205X9250	0.700 [17.8]	1.25 [31.8]	21.0	7.2	7.2	6.8	6.0	5.2	4.3	3.9	
2.2	730P225X9250	0.610 [15.5]	1.75 [44.5]	20.0	8.4	7.5	7.0	6.3	5.4	4.5	4.1	
2.7	730P275X9250	0.669 [17.0]	1.75 [44.5]	19.0	8.6	7.8	7.3	6.6	5.7	4.7	4.3	
3.0	730P305X9250	0.703 [17.9]	1.75 [44.5]	18.0	9.0	8.3	7.6	6.8	5.9	4.8	4.4	
3.3	730P335X9250	0.734 [18.6]	1.75 [44.5]	18.0	9.0	8.4	7.8	7.0	6.0	4.9	4.5	
3.9	730P395X9250	0.794 [20.2]	1.75 [44.5]	17.0	9.0	8.5	8.0	7.2	6.2	5.0	4.6	
4.0	730P405X9250	0.803 [20.4]	1.75 [44.5]	16.0	9.0	8.6	8.2	7.4	6.3	5.1	4.7	
4.7	730P475X9250	0.866 [22.0]	1.75 [44.5]	16.0	9.0	8.8	8.5	7.7	6.6	5.3	4.9	
5.0	730P505X9250	0.892 [22.7]	1.75 [44.5]	15.0	9.0	9.0	8.8	7.9	6.8	5.6	5.1	
5.6	730P565X9250	0.941 [23.9]	1.75 [44.5]	15.0	9.0	9.0	8.9	8.0	7.0	5.8	5.3	
6.0	730P605X9250	0.972 [24.7]	1.75 [44.5]	15.0	9.0	9.0	9.0	8.2	7.2	5.9	5.5	
6.8	730P685X9250	0.882 [22.4]	2.25 [57.2]	15.0	9.0	9.0	9.0	8.4	7.4	6.0	5.6	
8.0	730P805X9250	0.953 [24.2]	2.25 [57.2]	14.0	9.0	9.0	9.0	8.7	7.8	6.3	5.8	
8.2	730P825X9250	0.964 [24.5]	2.25 [57.2]	14.0	9.0	9.0	9.0	8.8	7.9	6.4	5.9	
10.0	730P106X9250	1.060 [26.9]	2.25 [57.2]	13.0	9.0	9.0	9.0	8.9	8.3	6.8	6.2	

\* These ratings are stocked.

\*\* Part Numbers listed are for a capacitance tolerance of ± 10 %. To specify ± 20 % tolerance, change the "X9" in the Part Number to "X0"; for ± 5 %, from "X9" to "X5".

\*\*\* The peak current pulse capability of these capacitors is 10 amperes/μF. The maximum rate voltage change is 10 V/μS.



Film Capacitors  
High Frequency, Wrap-and-Fill,  
Metallized Polypropylene

Vishay Sprague

STANDARD RATINGS in inches [millimeters]																		
CAPACITANCE ( $\mu$ F)	PART NUMBER**	CASE SIZE		ESR (Milliohms) 20 kHz - 100 KHz	MAXIMUM RIPPLE CURRENT (Amps rms) at 20 kHz Case Temperature*** at													
		D	L		+ 25 °C	+ 35 °C	+ 45 °C	+ 55 °C	+ 65 °C	+ 75 °C	+ 85 °C							
<b>400 WVDC</b>																		
0.047	730P473X9400	0.258 [6.6]	0.75 [19.0]	-														
0.056	730P563X9400	0.275 [7.0]	0.75 [19.0]	-														
0.068	730P683X9400	0.297 [7.5]	0.75 [19.0]	-														
0.082	730P823X9400	0.320 [8.1]	0.75 [19.0]	-														
0.1*	730P104X9400	0.348 [8.8]	0.75 [19.0]	-	Not applicable. These capacitance values are not customarily used in switched-mode power supplies.													
0.12	730P124X9400	0.299 [7.6]	1.00 [25.4]	-														
0.15*	730P154X9400	0.328 [8.3]	1.00 [25.4]	-														
0.18	730P184X9400	0.353 [9.0]	1.00 [25.4]	-														
0.22	730P224X9400	0.385 [9.8]	1.00 [25.4]	-														
0.27	730P274X9400	0.421 [10.7]	1.00 [25.4]	-														
0.33	730P334X9400	0.469 [11.9]	1.00 [25.4]	-														
0.39	730P394X9400	0.503 [12.8]	1.00 [25.4]	-														
0.47*	730P474X9400	0.545 [13.8]	1.00 [25.4]	32.0								5.7	5.5	5.0	4.4	3.8	3.2	2.2
0.56	730P564X9400	0.506 [12.9]	1.25 [31.8]	31.0								5.7	5.7	5.3	4.4	4.1	3.3	2.3
0.68	730P684X9400	0.551 [14.0]	1.25 [31.8]	30.0	5.7	5.7	5.5	4.8	4.3	3.5	2.4							
0.82	730P824X9400	0.599 [15.2]	1.25 [31.8]	28.0	5.7	5.7	5.6	5.3	4.5	3.7	2.6							
1.0*	730P105X9400	0.655 [16.6]	1.25 [31.8]	27.0	5.7	5.7	5.7	5.7	5.7	4.7	4.3							
1.2	730P125X9400	0.712 [18.1]	1.25 [31.8]	26.0	6.3	6.2	6.0	5.9	5.8	4.9	4.5							
1.5	730P155X9400	0.658 [16.7]	1.75 [44.5]	25.0	7.0	6.9	6.7	6.6	6.5	5.2	4.7							
1.8	730P185X9400	0.716 [18.2]	1.75 [44.5]	23.0	8.0	7.9	7.8	7.7	6.8	5.5	5.0							
2.0*	730P205X9400	0.752 [19.1]	1.75 [44.5]	21.0	9.0	9.0	9.0	9.0	7.0	5.7	5.2							
2.2	730P225X9400	0.786 [20.0]	1.75 [44.5]	20.0	9.0	9.0	9.0	8.3	7.4	5.9	5.4							
2.7	730P275X9400	0.865 [22.0]	1.75 [44.5]	19.0	9.0	9.0	9.0	8.6	7.6	6.0	5.6							
3.0*	730P305X9400	0.909 [23.1]	1.75 [44.5]	17.0	9.0	9.0	9.0	9.0	7.9	6.4	5.9							
3.3	730P335X9400	0.951 [24.2]	1.75 [44.5]	16.0	9.0	9.0	9.0	9.0	8.1	6.6	6.3							
3.9	730P395X9400	1.031 [26.2]	1.75 [44.5]	15.0	9.0	9.0	9.0	9.0	8.3	6.8	6.5							
<b>630 WVDC</b>																		
0.022*	730P223X9630	0.283 [7.2]	0.75 [19.0]	-														
0.027	730P273X9630	0.307 [7.8]	0.75 [19.0]	-														
0.033	730P333X9630	0.334 [8.5]	0.75 [19.0]	-														
0.039	730P393X9630	0.358 [9.1]	0.75 [19.0]	-														
0.047	730P473X9630	0.388 [9.9]	0.75 [19.0]	-														
0.056	730P563X9630	0.418 [10.6]	0.75 [19.0]	-														
0.068	730P683X9630	0.346 [8.8]	1.00 [25.4]	-	Not applicable. These capacitance values are not customarily used in switched-mode power supplies.													
0.082	730P823X9630	0.374 [9.5]	1.00 [25.4]	-														
0.1	730P104X9630	0.408 [10.4]	1.00 [25.4]	-														
0.12	730P124X9630	0.443 [11.3]	1.00 [25.4]	-														
0.15	730P154X9630	0.496 [12.6]	1.00 [25.4]	-														
0.18	730P184X9630	0.538 [13.7]	1.00 [25.4]	-														
0.22	730P224X9630	0.496 [12.6]	1.25 [31.8]	-														
0.27	730P274X9630	0.542 [13.8]	1.25 [31.8]	-														
0.33	730P334X9630	0.593 [15.1]	1.25 [31.8]	-														
0.39	730P394X9630	0.639 [16.2]	1.25 [31.8]	-								-	-	-	-	-	-	
0.47	730P474X9630	0.696 [17.7]	1.25 [31.8]	28.0	6.8	6.3	5.8	5.2	4.5	3.6	2.6							
0.56	730P564X9630	0.608 [15.4]	1.75 [44.5]	26.0	7.4	6.9	6.3	5.6	4.8	4.0	2.8							
0.68	730P684X9630	0.664 [16.9]	1.75 [44.5]	25.0	7.8	7.2	6.6	5.9	5.1	4.2	2.9							
0.82	730P824X9630	0.724 [18.4]	1.75 [44.5]	22.0	8.1	7.5	6.9	6.2	5.3	4.3	3.1							
1.0*	730P105X9630	0.794 [20.2]	1.75 [44.5]	18.0	8.6	7.9	7.3	6.5	5.6	4.6	3.6							

\* These ratings are stocked.  
 \*\* Part Numbers listed are for a capacitance tolerance of  $\pm 10\%$ . To specify  $\pm 20\%$  tolerance, change the "X9" in the Part Number to "X0"; for  $\pm 5\%$ , from "X9" to "X5".  
 \*\*\* The peak current pulse capability of these capacitors is 10 amperes/ $\mu$ F. The maximum rate voltage change is 10 V/ $\mu$ S.

ORDERING INFORMATION					
730P	224	X9	100		
TYPE	CAPACITANCE	CAPACITANCE TOLERANCE	DC VOLTAGE RATING*		
	This is expressed in picofarads. The first two digits are the significant figures. The third is the number of zeros to follow.	X0 = $\pm 20\%$ X9 = $\pm 10\%$ X5 = $\pm 5\%$	This is expressed in volts.		
* At + 85 °C, AC rms ratings for frequencies up to and including 400 Hz correspond to this table:					
	WVDC	100	250	400	630
	RATED rms VOLTS	70	175	275	275



## Notice

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