

Wrapped Polypropylene Capacitors



TYPE CLASS
WPP | 204.48

WRAPPED POLYPROPYLENE, TUBULAR STYLE

The Type WPP is a wrapped style polypropylene film dielectric capacitor which is superior to polyester dielectrics in dissipation factor, insulation resistance, dielectric absorption, and capacitance stability with temperature change. The WPP is designed for continuous duty operation over the temperature range of -55° to $+105^{\circ}\text{C}$ without voltage derating. Its negative temperature coefficient provides an average capacitance change of $+3\%$ @ -55°C and -4% @ $+105^{\circ}\text{C}$.

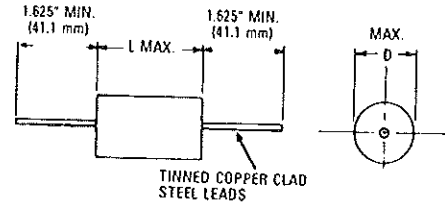
The WPP is similar in construction to the type WMF polyester film capacitor. The WPP units are non-inductive extended foil construction with epoxy end-seals bonded to a tough, heat-cured outer wrapper. Leads are tinned copper clad steel wire of #24 to #18 gauge, depending on capacitor diameter. Capacitance values from .001 to 3.0 mfd. and voltage ratings from 100 VDC to 1000 VDC are available.

Polypropylene dielectric capacitors may be used in place of polystyrene in many applications with the advantages of smaller size, lower price, and higher operating temperature capability.

AC Operation

WPP Capacitors may be operated on AC voltages as shown in this table.

AC operation must be limited such that the product of RMS AC volts and amps does not exceed 15 per square inch of case surface.



WIRE SIZES FOR CASE DIAMETERS

- #24 AWG. up to .282" (7.16 mm) diameter
- #22 AWG. .283" (7.19 mm) to .532" (13.51 mm)
- #20 AWG. .533" (13.54 mm) to .687" (17.45 mm)
- #18 AWG. .688" (17.48 mm) diameter and over

VOLTS AC RMS

DCVW'	60 Hz	400 Hz	1 KHz	15 KHz
100	70	60	50	25
200	140	140	100	40

Standard Ratings

CAP. MFD.	†Type WPP.	D x L MAX.		LEAD AWG
		Inches	(mm)	
100 VDC				
.001	1D1	.220 x .625	5.58 x 15.87	24
.0012	1D12	.220 x .625	5.58 x 15.87	24
.0015	1D15	.220 x .625	5.58 x 15.87	24
.0018	1D18	.220 x .625	5.58 x 15.87	24
.0022	1D22	.220 x .625	5.58 x 15.87	24
.0027	1D27	.220 x .625	5.58 x 15.87	24
.0033	1D33	.228 x .625	5.79 x 15.87	24
.0039	1D39	.240 x .625	6.09 x 15.87	24
.0047	1D47	.240 x .625	6.09 x 15.87	24
.0056	1D56	.240 x .625	6.09 x 15.87	24
.0068	1D68	.250 x .625	6.35 x 15.87	24
.0082	1D82	.250 x .625	6.35 x 15.87	24
.01	1S1	.250 x .625	6.35 x 15.87	24
.012	1S12	.250 x .625	6.35 x 15.87	24
.015	1S15	.250 x .625	6.35 x 15.87	24
.018	1S18	.250 x .625	6.35 x 15.87	24
.022	1S22	.270 x .625	6.86 x 15.87	24
.027	1S27	.293 x .625	7.44 x 15.87	22
.033	1S33	.319 x .625	8.10 x 15.87	22
.039	1S39	.319 x .625	8.10 x 15.87	22
.047	1S47	.298 x .875	7.57 x 22.22	22
.056	1S56	.321 x .875	8.15 x 22.22	22
.068	1S68	.350 x .875	8.89 x 22.22	22
.082	1S82	.382 x .875	9.70 x 22.22	22
.1	1P1	.403 x .875	10.24 x 22.22	22
.12	1P12	.467 x .875	11.86 x 22.22	22
.15	1P15	.515 x .875	13.08 x 22.22	22
.18	1P18	.485 x 1.000	12.32 x 25.40	22
.22	1P22	.529 x 1.000	13.44 x 25.40	22
.27	1P27	.593 x 1.000	15.06 x 25.40	20
.33	1P33	.521 x 1.250	13.23 x 31.75	22
.39	1P39	.575 x 1.250	14.61 x 31.75	20
.47	1P47	.622 x 1.250	15.80 x 31.75	20
.56	1P56	.672 x 1.250	17.07 x 31.75	20
.68	1P68	.684 x 1.375	17.37 x 34.92	20
.82	1P82	.742 x 1.375	18.85 x 34.92	18
1.0	1W1	.810 x 1.375	20.57 x 34.92	18
1.25	1W1P25	.896 x 1.375	22.76 x 34.92	18
1.5	1W1P5	.828 x 1.750	21.03 x 44.45	18
1.75	1W1P75	.879 x 1.750	22.33 x 44.45	18
2.0	1W2	.934 x 1.750	23.72 x 44.45	18
2.25	1W2P25	.986 x 1.750	25.04 x 44.45	18
2.5	1W2P5	.948 x 2.000	24.08 x 50.80	18
2.75	1W2P75	.990 x 2.000	25.15 x 50.80	18
3.0	1W3	1.030 x 2.000	26.16 x 50.80	18

CAP. MFD.	†Type WPP.	D x L MAX.		LEAD AWG
		Inches	(mm)	
200 VDC				
.001	2D1	.220 x .625	5.58 x 15.87	24
.0012	2D12	.220 x .625	5.58 x 15.87	24
.0015	2D15	.220 x .625	5.58 x 15.87	24
.0018	2D18	.220 x .625	5.58 x 15.87	24
.0022	2D22	.220 x .625	5.58 x 15.87	24
.0027	2D27	.220 x .625	5.58 x 15.87	24
.0033	2D33	.228 x .625	5.79 x 15.87	24
.0039	2D39	.240 x .625	6.09 x 15.87	24
.0047	2D47	.240 x .625	6.09 x 15.87	24
.0056	2D56	.240 x .625	6.09 x 15.87	24
.0068	2D68	.250 x .625	6.35 x 15.87	24
.0082	2D82	.250 x .625	6.35 x 15.87	24
.01	2S1	.250 x .625	6.35 x 15.87	24
.012	2S12	.250 x .625	6.35 x 15.87	24
.015	2S15	.250 x .625	6.35 x 15.87	24
.018	2S18	.250 x .625	6.35 x 15.87	24
.022	2S22	.270 x .625	6.86 x 15.87	24
.027	2S27	.293 x .625	7.44 x 15.87	22
.033	2S33	.319 x .625	8.10 x 15.87	22
.039	2S39	.319 x .625	8.10 x 15.87	22
.047	2S47	.298 x .875	7.57 x 22.22	22
.056	2S56	.321 x .875	8.15 x 22.22	22
.068	2S68	.350 x .875	8.89 x 22.22	22
.082	2S82	.382 x 1.125	9.70 x 28.58	22
.1	2P1	.360 x 1.125	9.14 x 28.58	22
.12	2P12	.420 x 1.125	10.67 x 28.58	22
.15	2P15	.420 x 1.312	10.67 x 33.32	22
.18	2P18	.487 x 1.312	12.37 x 33.32	22
.22	2P22	.495 x 1.312	12.57 x 33.32	22
.27	2P27	.510 x 1.437	12.95 x 36.50	22
.33	2P33	.484 x 1.750	12.29 x 44.45	22
.39	2P39	.521 x 1.750	13.23 x 44.45	22
.47	2P47	.581 x 1.750	14.75 x 44.45	20
.56	2P56	.627 x 1.750	15.92 x 44.45	20
.68	2P68	.684 x 1.750	17.37 x 44.45	20

†Order by complete type number, e.g. WPP1D1K.
 STANDARD CAPACITANCE TOLERANCE: $\pm 10\%$. Add "K" to part number, e.g. WPP1D1K.
 For $\pm 5\%$ add "J" to part number.
 For $\pm 2\%$ add "G" to part number.
 For $\pm 1\%$ add "F" to part number.

WRAPPED POLYPROPYLENE, TUBULAR STYLE (Continued)

CAP. MFD.	†Type WPP.	D x L MAX.		LEAD AWG
		Inches	(mm)	
200 VDC (Continued)				
.82	2P82	.751 x 1.750	19.07 x 44.45	18
1.0	2W1	.820 x 1.750	20.83 x 44.45	18
1.25	2W1P25	.907 x 1.750	23.04 x 44.45	18
1.5	2W1P5	.922 x 2.000	23.42 x 50.80	18
1.75	2W1P75	.990 x 2.000	25.15 x 50.80	18
2.0	2W2	1.052 x 2.000	26.72 x 50.80	18
2.25	2W2P25	1.142 x 2.000	29.00 x 50.80	18
2.5	2W2P5	1.193 x 2.000	30.30 x 50.80	18
2.75	2W2P75	1.263 x 2.000	31.83 x 50.80	18
3.0	2W3	1.303 x 2.000	33.10 x 50.80	18
400 VDC				
.001	4D1	.220 x .625	5.58 x 15.87	24
.0012	4D12	.220 x .625	5.58 x 15.87	24
.0015	4D15	.220 x .625	5.58 x 15.87	24
.0018	4D18	.220 x .625	5.58 x 15.87	24
.0022	4D22	.220 x .625	5.58 x 15.87	24
.0027	4D27	.220 x .625	5.58 x 15.87	24
.0033	4D33	.228 x .625	5.79 x 15.87	24
.0039	4D39	.240 x .625	6.09 x 15.87	24
.0047	4D47	.224 x .750	5.69 x 19.05	24
.0056	4D56	.240 x .750	6.09 x 19.05	24
.0068	4D68	.258 x .750	6.55 x 19.05	24
.0082	4D82	.278 x .750	7.06 x 19.05	24
.01	4S1	.290 x .750	7.37 x 19.05	22
.012	4S12	.320 x .750	8.13 x 19.05	22
.015	4S15	.352 x .750	8.94 x 19.05	22
.018	4S18	.307 x .875	7.79 x 22.23	22
.022	4S22	.334 x .875	8.48 x 22.23	22
.027	4S27	.365 x .875	9.27 x 22.23	22
.033	4S33	.330 x 1.062	8.38 x 26.97	22
.039	4S39	.355 x 1.062	9.02 x 26.97	22
.047	4S47	.348 x 1.250	8.84 x 31.75	22
.056	4S56	.375 x 1.250	9.52 x 31.75	22
.068	4S68	.415 x 1.250	10.54 x 31.75	22
.082	4S82	.458 x 1.250	11.63 x 31.75	22
.1	4P1	.485 x 1.250	12.32 x 31.75	22
.12	4P12	.544 x 1.250	13.82 x 31.75	20
.15	4P15	.615 x 1.250	15.62 x 31.75	20
.18	4P18	.560 x 1.562	14.22 x 39.67	20
.22	4P22	.595 x 1.562	15.11 x 39.67	20
.27	4P27	.667 x 1.562	16.94 x 39.67	20
.33	4P33	.673 x 1.750	17.09 x 44.45	20
.39	4P39	.724 x 1.750	18.39 x 44.45	18
.47	4P47	.787 x 1.750	19.99 x 44.45	18
.56	4P56	.852 x 1.750	21.64 x 44.45	18
.68	4P68	.852 x 2.000	21.64 x 50.80	18
.82	4P82	.928 x 2.000	23.57 x 50.80	18
1.0	4W1	1.016 x 2.000	25.80 x 50.80	18
1.25	4W1P25	1.160 x 2.000	29.46 x 50.80	18
1.5	4W1P5	1.166 x 2.250	29.61 x 57.15	18
1.75	4W1P75	1.250 x 2.250	31.75 x 57.15	18
2.0	4W2	1.329 x 2.250	33.76 x 57.15	18
2.25	4W2P25	1.403 x 2.250	35.64 x 57.15	18
2.5	4W2P5	1.388 x 2.500	35.25 x 63.50	18
2.75	4W2P75	1.450 x 2.500	36.83 x 63.50	18
3.0	4W3	1.508 x 2.500	38.30 x 63.50	18
600 VDC				
.001	6D1	.253 x .625	6.42 x 15.88	24
.0012	6D12	.272 x .625	6.91 x 15.88	24
.0015	6D15	.220 x .750	5.59 x 19.05	24
.0018	6D18	.220 x .750	5.59 x 19.05	24
.0022	6D22	.226 x .750	5.74 x 19.05	24
.0027	6D27	.244 x .750	6.20 x 19.05	24
.0033	6D33	.264 x .750	6.71 x 19.05	24
.0039	6D39	.249 x .812	6.32 x 20.64	24
.0047	6D47	.268 x .812	6.81 x 20.64	24
.0056	6D56	.288 x .812	7.32 x 20.64	22

CAP. MFD.	†Type WPP.	D x L MAX.		LEAD AWG
		Inches	(mm)	
600 VDC (Continued)				
.0068	6D68	.311 x .812	7.90 x 20.64	22
.0082	6D82	.337 x .812	8.56 x 20.64	22
.01	6S1	.338 x .937	8.59 x 23.81	22
.012	6S12	.365 x .937	9.27 x 23.81	22
.015	6S15	.390 x .937	9.91 x 23.81	22
.018	6S18	.450 x .937	11.42 x 23.81	22
.022	6S22	.424 x 1.062	10.77 x 26.97	22
.027	6S27	.382 x 1.125	9.70 x 28.53	22
.033	6S33	.431 x 1.125	10.95 x 28.53	22
.039	6S39	.463 x 1.125	11.76 x 28.53	22
.047	6S47	.490 x 1.125	12.45 x 28.53	22
.056	6S56	.542 x 1.125	13.77 x 28.53	20
.068	6S68	.605 x 1.125	15.37 x 28.53	20
.082	6S82	.660 x 1.125	16.76 x 28.53	20
.1	6P1	.690 x 1.125	17.53 x 28.53	18
.12	6P12	.653 x 1.375	16.59 x 34.93	20
.15	6P15	.605 x 1.750	15.37 x 44.45	20
.18	6P18	.655 x 1.750	16.64 x 44.45	20
.22	6P22	.715 x 1.750	18.16 x 44.45	18
.27	6P27	.783 x 1.750	19.89 x 44.45	18
.33	6P33	.857 x 1.750	21.77 x 44.45	18
.39	6P39	.848 x 2.000	21.54 x 50.80	18
.47	6P47	.922 x 2.000	23.42 x 50.80	18
.56	6P56	1.000 x 2.000	25.40 x 50.80	18
.68	6P68	1.093 x 2.500	27.76 x 63.50	18
.82	6P82	1.192 x 2.500	30.28 x 63.50	18
1.0	6W1	1.308 x 2.500	33.22 x 63.50	18
1.25	6W1P25	1.447 x 2.500	36.75 x 63.50	18
1.5	6W1P5	1.573 x 2.500	39.95 x 63.50	18
1.75	6W1P75	1.689 x 2.500	42.90 x 63.50	18
2.0	6W2	1.620 x 3.000	41.15 x 76.20	18
2.25	6W2P25	1.710 x 3.000	43.43 x 76.20	18
2.5	6W2P5	1.795 x 3.000	45.59 x 76.20	18
2.75	6W2P75	1.876 x 3.000	47.65 x 76.20	18
3.0	6W3	1.953 x 3.000	49.61 x 76.20	18
1000 VDC				
.001	10D1	.225 x .812	5.72 x 20.62	24
.0012	10D12	.240 x .812	6.09 x 20.62	24
.0015	10D15	.260 x .812	6.60 x 20.62	24
.0018	10D18	.280 x .812	7.11 x 20.62	22
.0022	10D22	.300 x .812	7.62 x 20.62	22
.0027	10D27	.330 x .812	8.38 x 20.62	22
.0033	10D33	.360 x .812	9.14 x 20.62	22
.0039	10D39	.390 x .812	9.91 x 20.62	22
.0047	10D47	.420 x .812	10.67 x 20.62	22
.0056	10D56	.380 x 1.000	9.65 x 25.40	22
.0068	10D68	.425 x 1.000	10.79 x 25.40	22
.0082	10D82	.465 x 1.000	11.81 x 25.40	22
.01	10S1	.410 x 1.125	10.41 x 28.57	22
.012	10S12	.440 x 1.125	11.18 x 28.57	22
.015	10S15	.485 x 1.125	12.32 x 28.57	22
.018	10S18	.485 x 1.125	12.32 x 28.57	22
.022	10S22	.530 x 1.125	13.46 x 28.57	22
.027	10S27	.515 x 1.250	13.08 x 31.75	22
.033	10S33	.575 x 1.250	14.60 x 31.75	20
.039	10S39	.617 x 1.250	15.67 x 31.75	20
.047	10S47	.669 x 1.250	16.99 x 31.75	20
.056	10S56	.722 x 1.250	18.34 x 31.75	18
.068	10S68	.717 x 1.375	18.21 x 34.92	18
.082	10S82	.778 x 1.375	19.76 x 34.92	18
.1	10P1	.850 x 1.375	21.59 x 34.92	18
.12	10P12	.924 x 1.375	23.47 x 34.92	18
.15	10P15	1.023 x 1.375	25.98 x 34.92	18
.18	10P18	.781 x 2.125	19.84 x 53.97	18
.22	10P22	.854 x 2.125	21.69 x 53.97	18
.27	10P27	.936 x 2.125	23.77 x 53.97	18
.33	10P33	1.025 x 2.125	26.03 x 53.97	18
.39	10P39	1.102 x 2.125	27.99 x 53.97	18
.47	10P47	1.202 x 2.125	30.53 x 53.97	18

†Order by complete type number, e.g. WPP1D1K.
 STANDARD CAPACITANCE TOLERANCE: ±10%. Add "K" to part number, e.g. WPP1D1K.
 For ±5% add "J" to part number.
 For ±2% add "G" to part number.
 For ±1% add "F" to part number.