

# WRAP-AND-FILL HIGH FREQUENCY POLYPROPYLENE FILM / FOIL CAPACITORS

TYPE 710P



## FEATURES

- Extended foil construction
- Low-loss
- High average AC current
- Moisture resistant
- Approved to MIL-PRF-55514 / 10

### MAJOR APPLICATIONS:

High current and high pulse operations, protection circuits in SMPS, snubber and SCR commutating circuits, oscillator, timing and filter circuits, high frequency coupling.

## PHYSICAL CHARACTERISTICS

### CONSTRUCTION:

Polypropylene film extended aluminum foil.

### CASE:

Flame retardant polyester tape wrap and epoxy endfill.

### LEAD MATERIAL:

Solder coated solid wire.

### LEAD STRENGTH:

Capable of withstanding a five pound pull force on lead axis.

### MARKING:

Dearborn trademark, type or catalog number, capacitance, tolerance and voltage.

## ELECTRICAL SPECIFICATIONS

**CAPACITANCE RANGE:** 0.001  $\mu$ F to 1.0  $\mu$ F

### VOLTAGE RATING:

- 200 VDC to 800 VDC
- 155 VRMS to 500 VRMS

**CAPACITANCE TOLERANCE:**  $\pm$ 20%,  $\pm$ 10%,  $\pm$ 5%

**OPERATING TEMPERATURE:** -55°C to +105°C

### VOLTAGE DERATING:

- At +105°C, 70% of the 85° rating for DC applications.
- For AC applications above 85°C, see Table 1.

**DISSIPATION FACTOR:** 0.1% maximum

**DC VOLTAGE TEST:** 250% of rated voltage for 5 seconds

### INSULATION RESISTANCE:

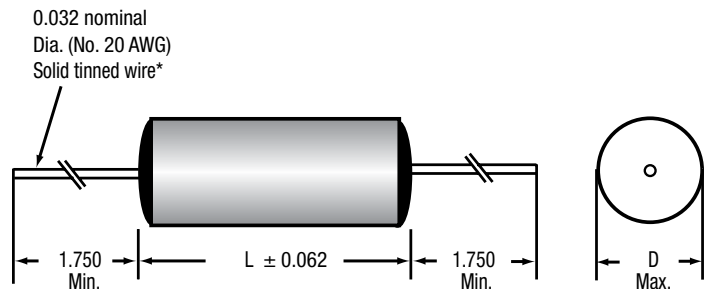
Measured at rated VDC after a 2 minute test.

- At +25°C, 200,000 Megaohm-Microfarads, need not exceed 400,000 Megaohms
- At +85°C, 10,000 Megaohm-Microfarads, need not exceed 20,000 Megaohms
- At +105°C, 1,000 Megaohm-Microfarads, need not exceed 2,000 Megaohms

## MAXIMUM PULSE RISE TIME

Capacitor Length (inch)	Rise Time $dv / dt$ (v / $\mu$ s)			
	200 VDC	400 VDC	600 VDC	800 VDC
0.750	1000	1800	3000	-
0.938	700	1000	2000	-
1.250	450	650	1000	1500
1.688	400	500	700	1000
2.063	300	-	600	800
2.438	-	400	500	600

## DIMENSIONS (in inches)



\* Leads to be within  $\pm$ 0.062" of center line at egress, but not less than 0.031" from edge.

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**TABLE 1: AC VOLTAGE RATINGS**

Capacitance Range	1,000Hz		5,000Hz		10,000Hz		15,000Hz		20,000Hz - Voltage RMS		Max. AC Life test
	85°C	105°C	85°C	105°C	85°C	105°C	85°C	105°C	85°C	105°C	
<b>200 V</b>											
0.012 - 0.068	155	75	115	75	85	60	70	50	60	45	155
0.082 - 0.47	155	75	75	60	55	40	45	35	40	30	155
0.68 - 1.0	155	75	75	50	55	30	45	20	40	15	155
<b>400 V</b>											
0.0039 - 0.033	200	100	190	100	135	105	110	85	95	75	200
0.039 - 0.47	200	100	100	80	75	55	60	45	50	40	200
0.68 - 1.0	200	100	100	50	75	30	60	20	50	15	200
<b>600 V</b>											
0.001 - 0.033	200	140	200	165	160	120	130	100	110	85	200
0.039 - 0.22	200	140	125	95	90	65	75	55	65	45	200
0.27 - 1.0	200	100	125	55	90	30	75	20	60	15	200
<b>800 V</b>											
0.0056 - 0.033	500	250	500	190	500	150	450	120	405	100	500
0.039 - 0.10	500	250	400	120	240	100	185	75	140	60	500
0.12 - 0.56	500	195	280	75	160	45	115	30	85	20	500

## STANDARD RATINGS

Capacitance		Voltage Code 200 200 VDC / 155 VAC*		Voltage Code 400 400 VDC / 200 VAC*		Voltage Code 600 600 VDC / 240 VAC*		Voltage Code 800 800 VDC / 500 VAC*	
µF	Code	D	L	D	L	D	L	D	L
0.0010	102	-	-	-	-	0.290	0.750	-	-
0.0012	122	-	-	-	-	0.305	0.750	-	-
0.0015	152	-	-	-	-	0.305	0.750	-	-
0.0018	182	-	-	-	-	0.315	0.750	-	-
0.0022	222	-	-	-	-	0.315	0.750	-	-
0.0027	272	-	-	-	-	0.320	0.750	-	-
0.0033	332	-	-	-	-	0.320	0.750	-	-
0.0039	392	-	-	0.240	0.750	0.330	0.750	-	-
0.0047	472	-	-	0.240	0.750	0.330	0.750	-	-
0.0056	562	-	-	0.270	0.750	0.360	0.750	0.275	1.250
0.0068	682	-	-	0.270	0.750	0.360	0.750	0.275	1.250
0.0082	822	-	-	0.290	0.750	0.340	0.938	0.315	1.250
0.010	103	-	-	0.290	0.750	0.340	0.938	0.315	1.250
0.012	123	0.250	0.750	0.330	0.750	0.390	0.938	0.365	1.250
0.015	153	0.250	0.750	0.330	0.750	0.390	0.938	0.365	1.250
0.018	183	0.290	0.750	0.325	0.938	0.450	0.938	0.430	1.250
0.022	223	0.290	0.750	0.325	0.938	0.450	0.938	0.430	1.250
0.027	273	0.335	0.750	0.375	0.938	0.435	1.250	0.515	1.250
0.033	333	0.335	0.750	0.375	0.938	0.435	1.250	0.515	1.250
0.039	393	0.315	0.938	0.355	1.250	0.490	1.250	0.495	1.688
0.047	473	0.315	0.938	0.355	1.250	0.490	1.250	0.495	1.688
0.056	563	0.375	0.938	0.415	1.250	0.590	1.250	0.595	1.688
0.068	683	0.375	0.938	0.415	1.250	0.590	1.250	0.595	1.688
0.082	823	0.360	1.250	0.485	1.250	0.690	1.250	0.700	1.688
0.10	104	0.360	1.250	0.485	1.250	0.690	1.250	0.700	1.688
0.12	124	0.420	1.250	0.570	1.250	0.670	1.688	0.755	2.063
0.15	154	0.420	1.250	0.570	1.250	0.670	1.688	0.755	2.063
0.18	184	0.495	1.250	0.595	1.688	0.800	1.688	0.910	2.063
0.22	224	0.495	1.250	0.595	1.688	0.800	1.688	0.910	2.063
0.33	334	0.510	1.688	0.690	1.688	0.876	2.063	0.985	2.438
0.39	394	0.510	1.688	0.690	1.688	1.032	2.063	0.985	2.438
0.47	474	0.590	1.688	0.830	1.688	1.032	2.063	1.220	2.438
0.56	564	0.590	1.688	0.830	1.688	1.096	2.438	1.220	2.438
0.68	684	0.799	1.688	0.911	2.438	1.096	2.438	1.220	2.438
0.82	824	0.821	2.063	1.091	2.438	1.316	2.438	-	-
1.00	105	0.821	2.063	1.091	2.438	1.316	2.438	-	-

Additional capacitance values, voltages, and tolerances are available upon request.  
\* AC voltage rating is at 400Hz 1.4 x VRMS + VDC should not exceed the rated VDC.