

WRAP-AND-FILL METALIZED POLYESTER FILM CAPACITORS



FEATURES

- 63 VDC to 16,000 VDC
- Extensive standard ratings
- Rugged construction
- Small size

MAJOR APPLICATIONS:

Blocking, filtering, bypass, timing, coupling decoupling, pulse operations, power supply, low to high voltage, copiers, etc.

PHYSICAL CHARACTERISTICS

CONSTRUCTION:

Non-inductive wound metalized polyester.

CASE:

Flame retardant tape wrap and epoxy end fill.

LEAD MATERIAL:

Solder coated solid wire.

LEAD WIRE SIZES:

Case Dia.	Lead AWG
< 0.270	0.025 (No. 22)
≥ 0.270	0.032 (No. 20)

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 μ F to 10.0 μ F

VOLTAGE RANGE:

- 63 VDC to 16,000 VDC
- 40 VAC to 220 VAC

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

OPERATING TEMPERATURE: -55°C to +125°C

VOLTAGE DERATING: At +125°C, 50% of the 85°C rating

DISSIPATION FACTOR:

- 0.8% maximum \leq 1.0 μ F
- 1.0% maximum $>$ 1.0 μ F

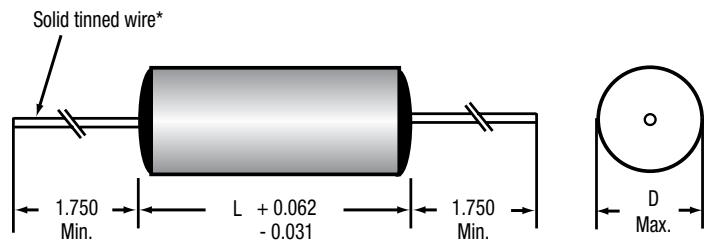
VOLTAGE TEST:

200% of rated voltage for 2 minutes. 1kv and greater voltage limited to 120% of rated voltage for 5 min. thru 50,000 ohms minimum.

INSULATION RESISTANCE:

- At +25°C, 25,000 Megaohm-Microfarads, need not exceed 50,000 Megaohms
- At +85°C, 1,000 Megaohm-Microfarads, need not exceed 2,500 Megaohms

DIMENSIONS (in inches)



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

WRAP-AND-FILL METALIZED POLYESTER FILM CAPACITORS

TYPE 430P

MAXIMUM PULSE RISE TIME

Capacitor Length (inch)	Rise Time dv / dt (V / μ s)											
	63 VDC	100 VDC	250 VDC	400 VDC	630 VDC	1,000 VDC	2,000 VDC	4,000 VDC	6,000 VDC	8,000 VDC	10,000 VDC	16,000 VDC
0.625	46	51	75	100	250	-	-	-	-	-	-	-
0.750	28	34	48	75	130	-	-	-	-	-	-	-
1.000	16	19	27	45	75	89	170	-	-	-	-	-
1.125	-	-	-	-	-	-	-	1200	-	-	-	-
1.250	12	13	19	30	45	-	-	-	-	-	-	-
1.500	9	10	15	21	35	-	-	-	2750	-	-	-
1.750	-	9	12	19	25	30	50	450	-	-	-	-
1.875	-	-	-	-	-	-	-	-	-	5000	-	-
2.000	-	-	-	-	25	-	-	-	-	-	-	-
2.250	-	-	-	-	-	-	-	-	-	-	7500	-
2.500	-	-	-	-	-	-	-	-	1000	-	-	-
3.062	-	-	-	-	-	-	-	-	-	-	-	12000
3.187	-	-	-	-	-	-	-	-	-	1900	-	-

STANDARD RATINGS

Capacitance	Voltage Code 063 63 VDC / 40 VAC*		Voltage Code 100 100 VDC / 63 VAC*		Voltage Code 250 250 VDC / 160 VAC*		Voltage Code 400 400 VDC / 200 VAC*		Voltage Code 630 630 VDC / 220 VAC*		Voltage Code 1k0 1,000 VDC		Voltage Code 2k0 2,000 VDC		Voltage Code 4k0 4,000 VDC		Voltage Code 6k0 6,000 VDC		Voltage Code 8k0 8,000 VDC		Voltage Code 10k0 10,000 VDC		Voltage Code 16k0 16,000 VDC		
	μ F	Code	D	L	D	L	D	L	D	L	D	L	D	L	D	L	D	L	D	L	D	L	D	L	D
0.0010	102	-	-	-	-	-	-	-	-	-	-	-	-	0.301	1.125	0.304	1.500	0.294	1.875	0.337	2.250	0.387	3.062	-	-
0.0015	152	-	-	-	-	-	-	-	-	-	-	-	-	0.301	1.125	0.304	1.500	0.342	1.875	0.360	2.250	0.451	3.062	-	-
0.0022	222	-	-	-	-	-	-	-	-	-	-	-	-	0.301	1.125	0.333	1.500	0.371	1.875	0.360	2.250	0.528	3.062	-	-
0.0033	332	-	-	-	-	-	-	-	-	-	-	-	-	0.326	1.125	0.381	1.500	0.371	1.875	0.417	2.250	0.628	3.062	-	-
0.0047	472	-	-	-	-	-	-	-	0.187	0.625	-	-	-	0.326	1.125	0.381	1.500	0.429	1.875	0.480	2.250	0.734	3.062	-	-
0.0068	682	-	-	-	-	-	-	-	0.209	0.625	-	-	-	0.376	1.125	0.445	1.500	0.510	1.875	0.560	2.250	0.868	3.062	-	-
0.010	103	-	-	-	-	-	-	-	0.239	0.625	-	-	-	0.440	1.125	0.531	1.500	0.600	1.875	0.662	2.250	1.040	3.062	-	-
0.015	153	-	-	-	-	-	0.186	0.625	0.224	0.750	-	-	0.309	1.000	0.531	1.125	0.632	1.500	0.717	1.875	0.793	2.250	1.353	3.062	-
0.022	223	-	-	-	-	-	0.210	0.625	0.257	0.750	-	-	0.358	1.000	0.407	1.750	0.749	1.500	0.853	1.875	0.946	2.250	-	-	-
0.033	333	-	-	-	-	-	0.241	0.625	0.300	0.750	-	-	0.421	1.000	0.490	1.750	0.581	2.500	1.030	1.875	-	-	-	-	-
0.047	473	-	-	-	-	0.200	0.625	0.275	0.625	0.269	1.000	0.302	1.000	0.497	1.000	0.568	1.750	0.678	2.500	0.771	1.875	-	-	-	-
0.068	683	-	-	-	-	0.225	0.625	0.266	0.750	0.311	1.000	0.347	1.000	0.581	1.000	0.667	1.750	0.800	2.500	0.913	3.187	-	-	-	-
0.10	104	-	-	0.204	0.625	0.221	0.750	0.310	0.750	0.365	1.000	0.405	1.000	0.413	1.750	0.793	1.750	1.009	2.500	-	-	-	-	-	-
0.15	154	0.210	0.625	0.233	0.625	0.254	0.750	0.293	1.000	0.368	1.250	0.489	1.000	0.498	1.750	0.956	1.750	-	-	-	-	-	-	-	-
0.22	224	0.240	0.625	0.228	0.750	0.295	0.750	0.342	1.000	0.385	1.500	0.574	1.000	0.585	1.750	1.143	1.750	-	-	-	-	-	-	-	-
0.33	334	0.279	0.625	0.264	0.750	0.279	1.000	0.350	1.250	0.428	1.750	0.457	1.750	0.699	1.750	-	-	-	-	-	-	-	-	-	-
0.47	474	0.269	0.750	0.246	1.000	0.321	1.000	0.364	1.500	0.497	1.750	0.528	1.750	-	-	-	-	-	-	-	-	-	-	-	-
0.68	684	0.311	0.750	0.283	1.000	0.375	1.000	0.402	1.750	0.585	1.750	0.618	1.750	-	-	-	-	-	-	-	-	-	-	-	-
1.00	105	0.291	1.000	0.286	1.250	0.380	1.250	0.472	1.750	-	-	0.733	1.750	-	-	-	-	-	-	-	-	-	-	-	-
1.50	155	0.344	1.000	0.351	1.250	0.454	1.250	0.563	1.750	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.50	205	0.400	1.000	0.393	1.250	0.469	1.500	0.640	1.750	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.50	255	0.438	1.000	0.430	1.250	0.516	1.500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.00	305	0.398	1.250	0.464	1.250	0.559	1.500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.00	405	0.434	1.500	0.494	1.500	0.580	1.750	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.00	505	0.476	1.500	0.544	1.500	0.641	1.750	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.00	605	0.515	1.500	0.591	1.500	0.697	1.750	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.00	705	0.551	1.500	0.633	1.500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.00	106	0.647	1.500	0.678	1.750	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Additional capacitance values, voltages, and tolerances are available upon request.

*AC voltage rating is at 60Hz 1.4 x VRMS + VDC should not exceed the rated VDC.

GENERAL INFORMATION ON POLYESTER CAPACITORS

GENERAL INFORMATION

One of the principle characteristics of these capacitors is their small size. This is due to the high dielectric constant and high dielectric strength of the film. They also have superior self-healing properties. They may be used in AC sine wave or non sine wave applications.

GENERAL ELECTRICAL, PHYSICAL, AND ENVIRONMENTAL CHARACTERISTICS

ELECTRICAL CHARACTERISTICS:

Capacitance, dissipation factor, insulation resistance, and dielectric strength shall be measured as specified.

PHYSICAL CHARACTERISTICS:

The lead strength shall be measured as specified.

ENVIRONMENTAL CHARACTERISTICS:

Vibration Test:

Units shall be tested as required. As a result of the test no mechanical damage, short, open or intermittent circuit.

MOISTURE RESISTANCE:

The hermetically sealed units shall be tested.

As a result of the test there shall be:

- No visible damage
- Max. ΔC of $\pm 10\%$
- Min. IR = 50% of initial limit
- Max. DF = 2.0%

HUMIDITY TEST:

The non-hermetically sealed units shall be tested.

As a result of the test there shall be:

- No visible damage
- Max. ΔC of $\pm 10\%$
- Min. IR = 20% of initial limit
- Max. DF = 2.0%

DC LIFE:

125% of rated voltage at 85°C (125°C for Type 218P) for 250 hours except for Type 430P units rated at 1,000 VDC or greater which shall be tested at 100% of rated voltage at 40°C for 1,000 hours.

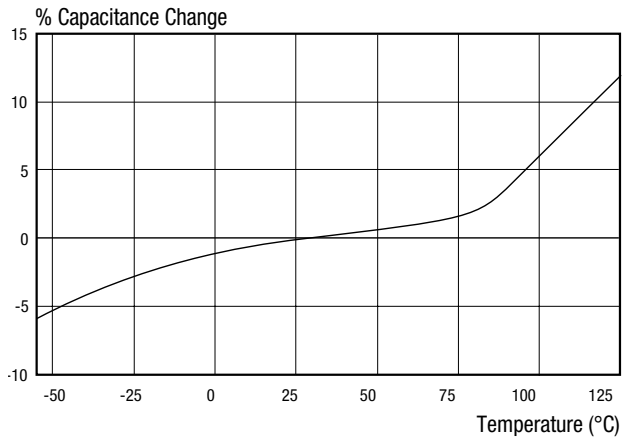
As a result of the test there shall be:

- No permanent open or short circuit
- No visible damage
- Max. ΔC of $\pm 10\%$
- Min. IR = 50% of initial limit
- Max. DF = 2.0%

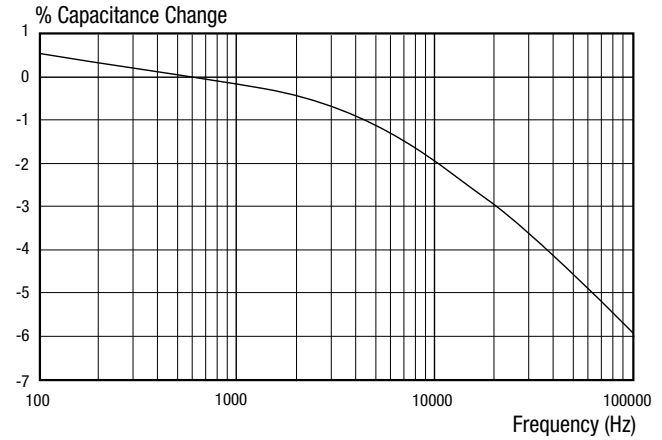
GENERAL INFORMATION ON POLYESTER CAPACITORS

CHARACTERISTICS

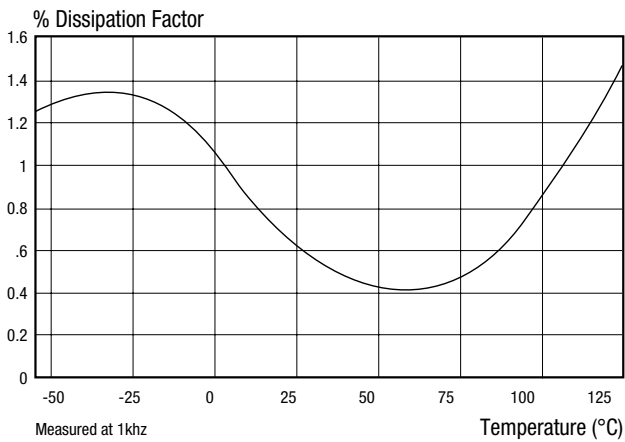
CAPACITANCE CHANGE VS. TEMPERATURE - METALIZED POLYESTER



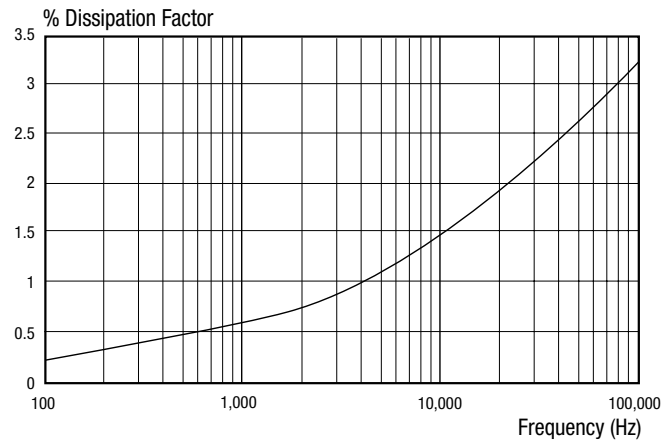
CAPACITANCE CHANGE VS. FREQUENCY - METALIZED POLYESTER



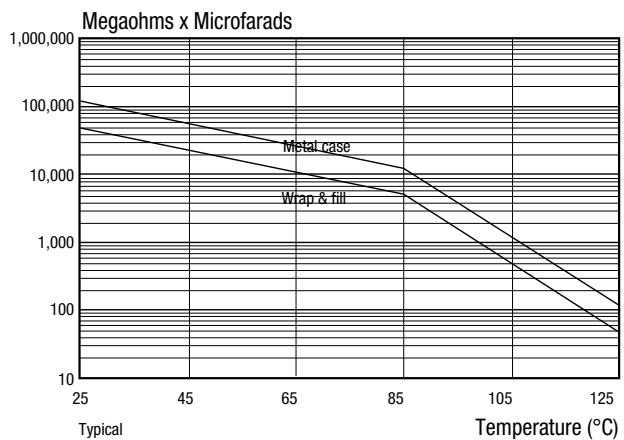
DISSIPATION FACTOR VS. TEMPERATURE - METALIZED POLYESTER



DISSIPATION FACTOR VS. FREQUENCY - METALIZED POLYESTER

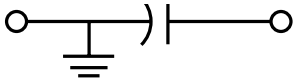


INSULATION RESISTANCE VS. TEMPERATURE - METALIZED POLYESTER



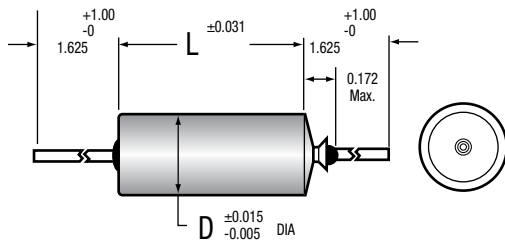
GUIDE TO ORDERING

SECTION GROUNDED TO CASE

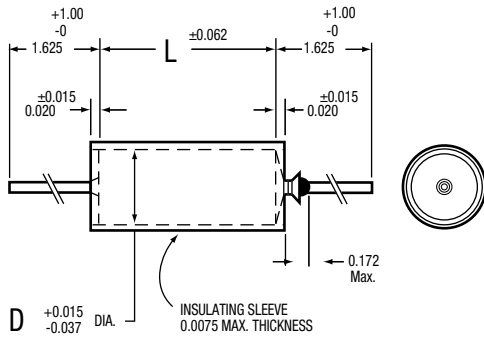


DIMENSIONS (in inches)

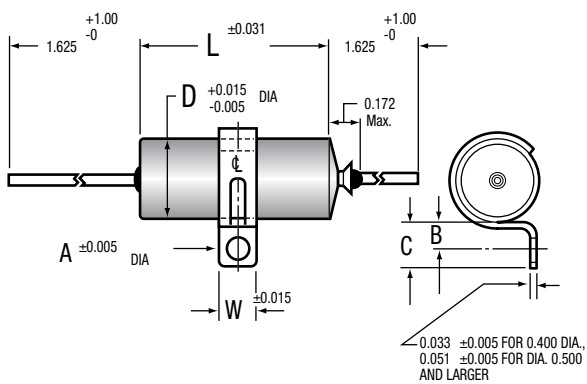
CASE STYLE 01



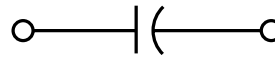
CASE STYLE 03



CASE STYLE 12

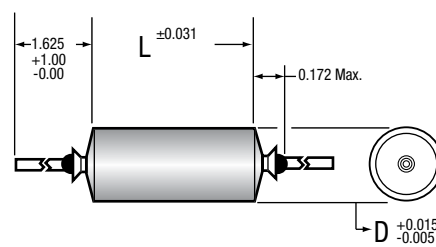


SECTION INSULATED FROM CASE

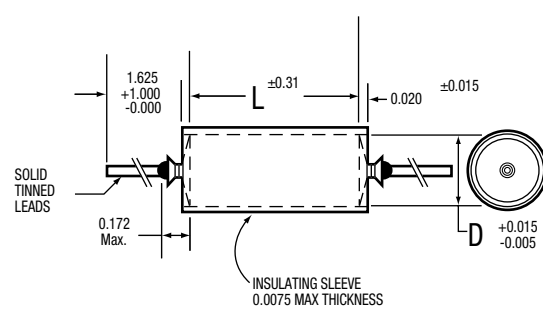


DIMENSIONS (in inches)

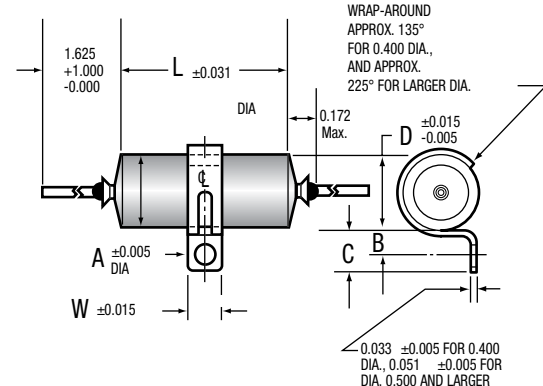
CASE STYLE 02



CASE STYLE 04



CASE STYLE 13



The length of grounded styles is 0.062" shorter than the length shown in tabulations in the catalog.

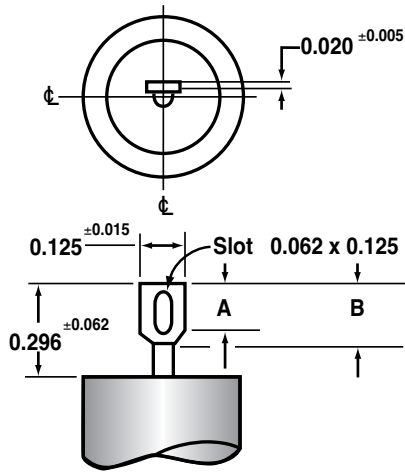
GUIDE TO ORDERING

BRACKET DIMENSIONS (Style 12 & 13 / in inches)

D	W	A	B	C
0.400	0.250	0.144	0.187±0.015	0.312±0.031
0.500	0.500	0.156	0.250±0.031	0.437±0.062
0.562	0.500	0.156	0.250±0.031	0.437±0.062
0.670	0.500	0.156	0.250±0.031	0.437±0.062
0.750	0.500	0.156	0.250±0.031	0.437±0.062
1.000	0.500	0.156	0.250±0.031	0.437±0.062

*Based on 1 in. = 25.4 mm

TYPICAL TAB TERMINAL DIMENSIONS



Dwg. No A-9525

A = 0.156 ± 0.015" (3.96 ± 0.38 mm)

B = 0.187 ± 0.015" (4.75 ± 0.38 mm)

Tab Terminal available only on case diameters equal to or greater than 0.400 inches.

T1 & T3 styles are supplied with one tab terminal on the insulated end and a ground lead on the opposite end.

METAL CASE

EXAMPLE:

218P

223

X9

100

S

02

CATALOG NUMBERING SYSTEM

Case style

Terminal: S = Wire leads T = Soldering tab*.

DC Voltage rating: Expressed in volts.
See standard ratings charts for voltage code.

Capacitance Tolerance: X0 = $\pm 20\%$
X9 = $\pm 10\%$
X5 = $\pm 5\%$
X2 = $\pm 2\%$

Capacitance: Expressed in picofarads, the first two digits are significant figures; the third is the number of zeros following. See standard ratings tables for capacitance code.

Dearborn type number: Identifies the basic capacitor.

* Soldering tabs are available only on case diameters equal to or greater than 0.400 inches.

WRAP AND FILL

EXAMPLE:

430P

183

X9

100

X

F

CATALOG NUMBERING SYSTEM

"F" applies only to "ROHS" compliant parts.

Terminal: No suffix required unless specified on applicable specification sheet (Terminal style).

DC Voltage rating: Expressed in volts.
See standard ratings charts for voltage code.

Capacitance Tolerance: X0 = $\pm 20\%$
X9 = $\pm 10\%$
X5 = $\pm 5\%$
X2 = $\pm 2\%$

Capacitance: Expressed in picofarads, the first two digits are significant figures; the third is the number of zeros following. See standard ratings tables for capacitance code.

Dearborn type number: Identifies the basic capacitor.