

WRAP-AND-FILL METALIZED POLYPHENYLENE SULFIDE FILM CAPACITORS



FEATURES

- Superior performance
- High efficiency
- High stability
- High reliability
- Rugged construction
- Small size
- Meets the requirements of MIL-PRF-55514 / 13

MAJOR APPLICATIONS:

Filtering, timing, storage, integrating, and other applications requiring the high stability and low retrace of polyphenylene sulfide.

PHYSICAL CHARACTERISTICS

CONSTRUCTION:

Non-inductive wound metalized polyphenylene sulfide.

CASE: Flame retardant tape wrap and epoxy endfill.

LEAD MATERIAL: Solder coated solid wire.

LEAD WIRE SIZES:

Case Dia.	Lead AWG
< 0.230	0.020 (No. 24)
< 0.440	0.025 (No. 22)
≥ 0.440	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: 0.01 μ F to 15.0 μ F

VOLTAGE RATING:

- 50 VDC to 200 VDC
- 32 VRMS to 126 VRMS

CAPACITANCE TOLERANCE: \pm 10%, \pm 5%, \pm 2%

OPERATING TEMPERATURE:

-55°C to +125°C without derating for DC operation

AC OPERATION: Limited to +105°C

DISSIPATION FACTOR: 0.15% maximum when measured at 1kHz @ 25°C

DC VOLTAGE TEST: 200% of rated voltage for 2 minutes

INSULATION RESISTANCE:

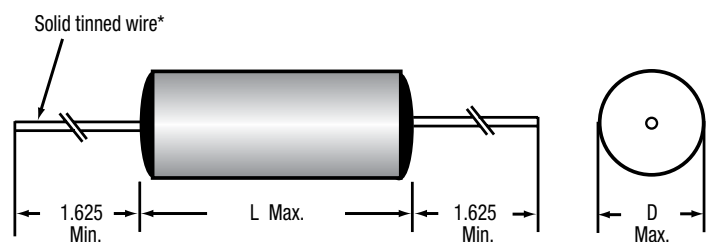
Measure at rated VDC after a 2 minute charge.

- At + 25°C, 50,000 Megaohm-Microfarads, need not exceed 100,000 Megaohms
- At + 85°C, 2,000 Megaohm-Microfarads, need not exceed 4,000 Megaohms
- At + 125°C, 250 Megaohm-Microfarads, need not exceed 500 Megaohms

MAXIMUM PULSE RISE TIME

Capacitor Length (inch)	Rise Time dv / dt (V / μ s)		
	50 V	100 V	200 V
0.400	25	35	57
0.530	13	20	38
0.750	7	14	20
1.030	6	9	14
1.250	4	7	11
1.500	-	-	9

DIMENSIONS (in inches)



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

WRAP-AND-FILL METALIZED POLYPHENYLENE SULFIDE FILM CAPACITORS

TYPE 842P

STANDARD RATINGS

Capacitance		Voltage Code 050 50 VDC / 32 VAC*		Voltage Code 100 100 VDC / 63 VAC*		Voltage Code 200 200 VDC / 126 VAC*	
µF	Code	D	L	D	L	D	L
0.010	103	0.17	0.40	0.17	0.40	0.17	0.40
0.015	153	0.17	0.40	0.17	0.40	0.19	0.40
0.022	223	0.17	0.40	0.17	0.40	0.23	0.40
0.033	333	0.17	0.40	0.19	0.40	0.26	0.40
0.047	473	0.17	0.40	0.23	0.40	0.23	0.53
0.068	683	0.17	0.40	0.26	0.40	0.26	0.53
0.10	104	0.23	0.40	0.23	0.53	0.31	0.53
0.15	154	0.23	0.40	0.26	0.53	0.31	0.75
0.22	224	0.26	0.40	0.31	0.53	0.35	0.75
0.33	334	0.26	0.53	0.35	0.53	0.40	0.75
0.47	474	0.31	0.53	0.31	0.75	0.40	1.03
0.68	684	0.35	0.53	0.35	0.75	0.44	1.03
1.00	105	0.31	0.75	0.40	0.75	0.49	1.25
1.50	155	0.35	0.75	0.40	1.03	0.56	1.25
2.00	205	0.40	0.75	0.44	1.03	0.56	1.50
2.70	275	0.35	1.03	0.51	1.03	0.67	1.50
3.00	305	0.40	1.03	0.49	1.25	0.67	1.50
3.90	395	0.44	1.03	0.56	1.25	0.76	1.50
5.00	505	0.49	1.03	0.61	1.25	0.87	2.06
5.60	565	0.49	1.03	0.56	1.50	-	-
6.80	685	0.49	1.25	0.61	1.50	-	-
10.00	106	0.61	1.25	-	-	-	-
15.00	156	0.61	1.50	-	-	-	-

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

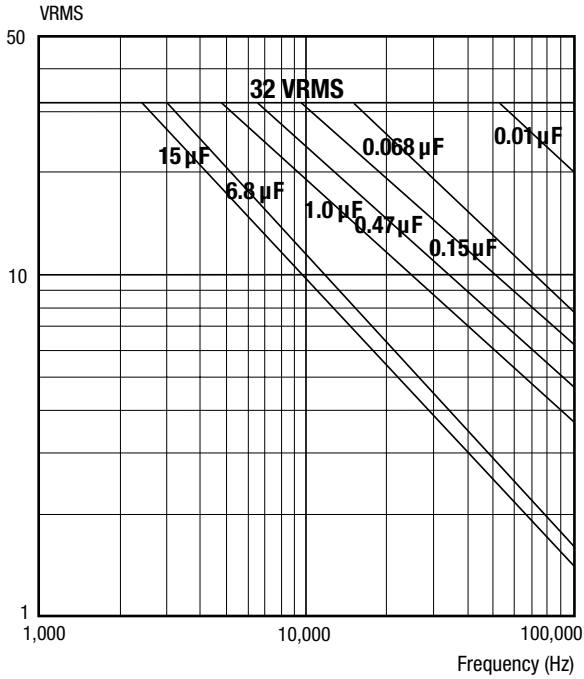
* AC voltage rating is at 400Hz 1.4 x VRMS + VDC should not exceed the rated VDC.

* Graphs of AC voltage vs. frequency follow.

WRAP-AND-FILL METALIZED POLYPHENYLENE SULFIDE FILM CAPACITORS

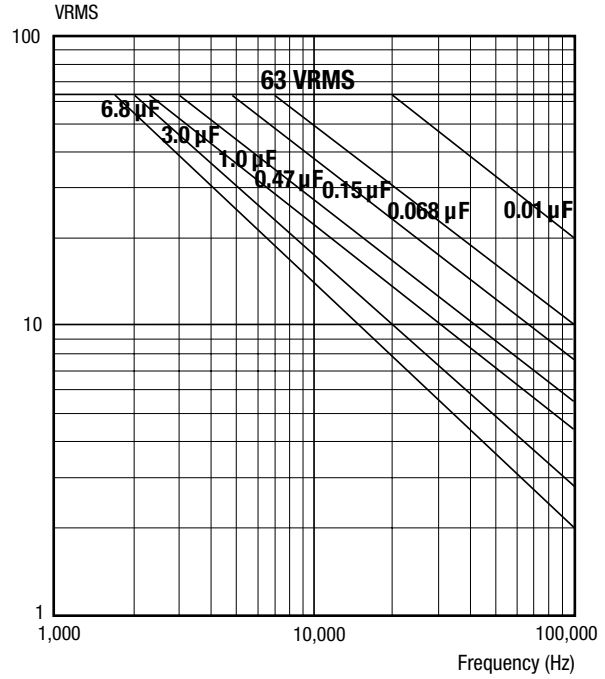
VOLTAGE VS. FREQUENCY TYPE 842P

50 VDC / 32 VAC



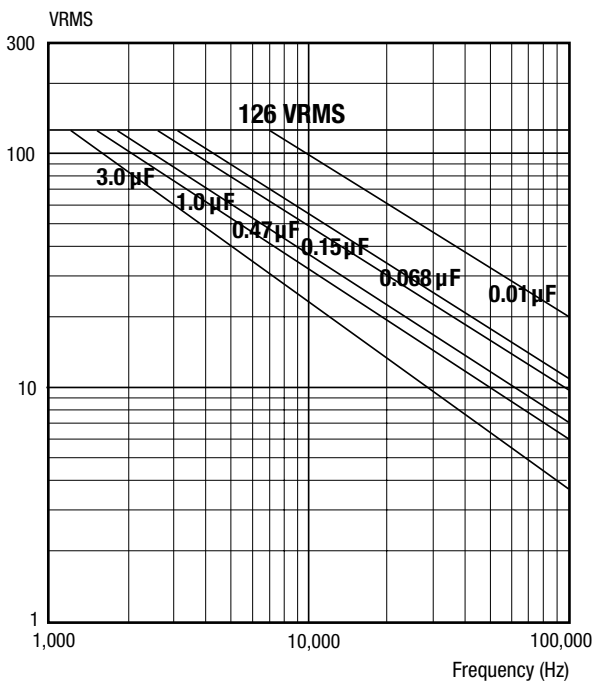
VOLTAGE VS. FREQUENCY TYPE 842P

100 VDC / 63 VAC



VOLTAGE VS. FREQUENCY TYPE 842P

200 VDC / 126 VAC



GENERAL INFORMATION ON POLYPHENYLENE SULFIDE CAPACITORS

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
- Min. IR = 50% of initial limit
- Max. ΔC of $\pm 5\%$
- Max. DF = 0.5%

HUMIDITY TEST:

The non-hermetically sealed units shall be tested.

As a result of the test there shall be:

- No visible damage
- Min. IR = 50% of initial limit
- Max. ΔC of $\pm 5\%$
- Max. DF = 0.5%

DC LIFE:

820P, 842P, 859P are tested in accordance with the applicable Mil Spec.
810P, 832P, 860P & 882P: 140% of rated voltage at 125°C for 250 hours
880P: 125% of rated voltage for 250 hours at 150°C.

As a result of the test there shall be:

- No permanent open or short circuit
- Max. ΔC of $\pm 5\%$
- Max. DF = 0.3%
- No visible damage
- Min. IR = 50% of initial limit






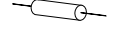
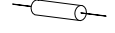
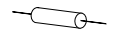

AC LIFE:

The Type 859P shall be tested at 110% of the rated rms voltage at 400Hz for 250 hours at 85°C.

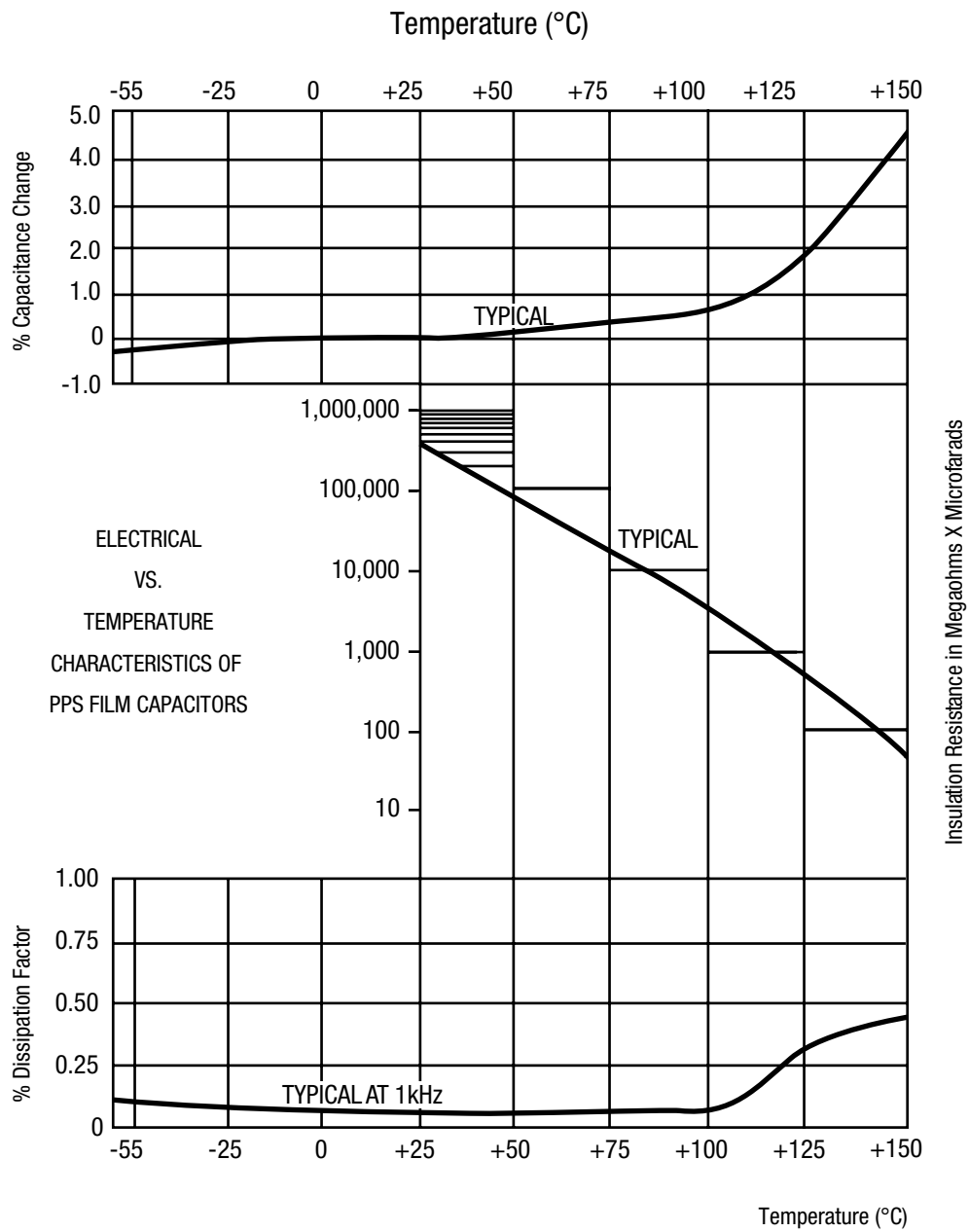
As a result of the test there shall be:

- No permanent open or short circuit
- Max. ΔC of $\pm 5\%$
- Max. DF = 0.5%
- No visible damage
- Min. IR = 50% of initial limit

METALIZED POLYCARBONATE / POLYPHENYLENE SULFIDE

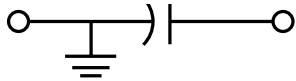
POLYPHENYLENE SULFIDE (Replacement for Polycarbonate)			POLYCARBONATE		POLYCARBONATE / POLYPHENYLENE SULFIDE			
Part Number	Mil Spec Number	Catalog Page	Part Number	Mil Spec Number	Outline Drawing	Description	Cap Range μF	DC Voltage Range
859P	39022 / 12	40	259P	39022 / 7		AC Rated -55°C to +105°C	0.01 - 10.0	80 - 440 VAC
860P	-	42	260P	-		Various Configurations 55°C to +105°C	0.01 - 10.0	200 - 600
820P	39022 / 13	37	620P	39022 / 10		Small Size -55°C to +125°C	0.01 - 15.0	50 - 400
-	95008	-	629P	83439 / 4 / 6 95008		Feed Thru -55°C to +125°C	0.01 - 15.0	50 - 400
832P	-	137	632P	-		Wrap & Fill -55°C to +125°C	0.001 - 10.0	63 - 400
842P	55514 / 13	140	642P	55514 / 7		Miniature Wrap & Fill -55°C to +125°C	0.01 - 15.0	50 - 200
880P	-	143	-	-		High Temp, PPS -55°C to +150°C	0.0047 - 10.0	50 - 400
FILM / FOIL POLYCARBONATE / POLYPHENYLENE SULFIDE								
810P	-	147	610P	-		Pulse Capacitor -55°C to +125°C	0.001 - 1.0	50 - 400
882P	-	149	-	-		Zero TCC PPS -55°C to +125°C	0.001 - 0.22	200

GENERAL INFORMATION ON POLYPHENYLENE SULFIDE CAPACITORS



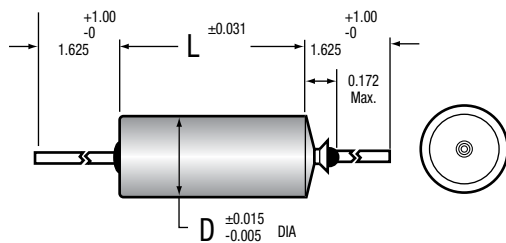
Dwg. No. A-14,582

SECTION GROUNDED TO CASE

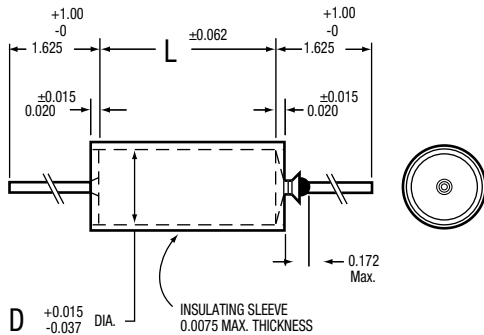


DIMENSIONS (in inches)

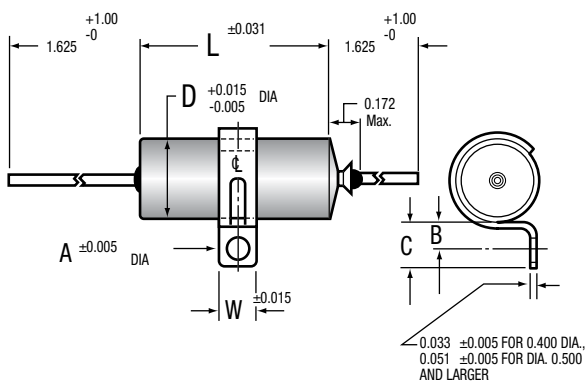
CASE STYLE 01



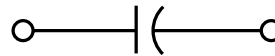
CASE STYLE 03



CASE STYLE 12

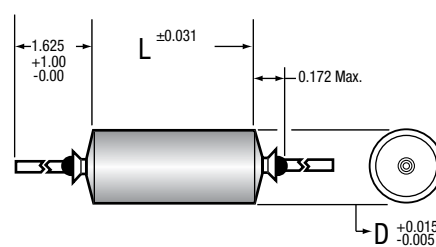


SECTION INSULATED FROM CASE

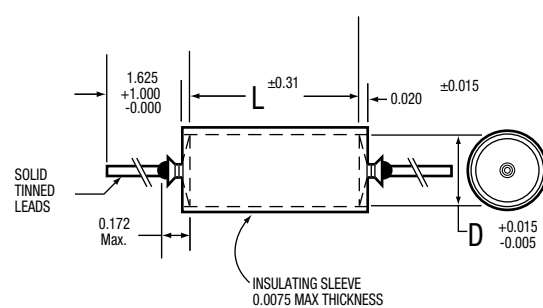


DIMENSIONS (in inches)

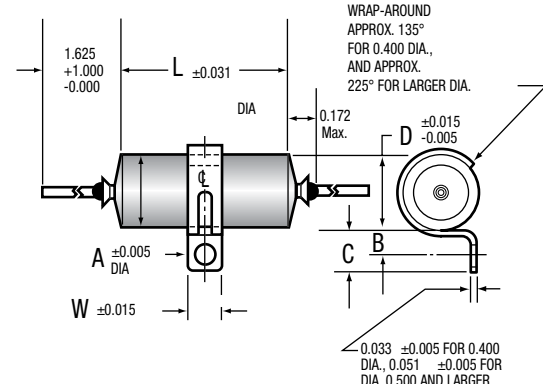
CASE STYLE 02



CASE STYLE 04



CASE STYLE 13



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

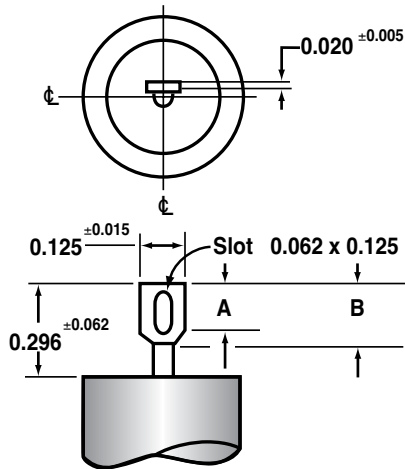
GUIDE TO ORDERING

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.

ORDERING TABLES

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.