

# METAL-CASE HERMETICALLY-SEALED AC RATED METALIZED POLYPHENYLENE SULFIDE FILM CAPACITORS



## FEATURES

- Full rating at 85°C and 400Hz
- High stability, polycarbonate replacement
- Small size
- Low power dissipation
- Low dielectric absorption
- Meets the requirements of MIL-PRF-39022 / 12

### MAJOR APPLICATIONS:

Motor run, speed control, filtering.

## PHYSICAL CHARACTERISTICS

### CONSTRUCTION:

Non-inductive wound metalized polyphenylene sulfide.

### CASE:

Hermetically sealed metal enclosure. Styles and dimensions are in Guide to Ordering section in the front of the catalog.

### LEAD MATERIAL:

Solder coated solid wire.

### LEAD WIRE SIZES:

Case Dia.	Lead AWG
0.312	No. 20
0.400 and over	No. 18

### LEAD PULL:

5 lbs (2.3 kg) for one minute. No physical damage.

### LEAD BEND:

After three complete consecutive bends. No damage.

### MARKING:

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

## ELECTRICAL SPECIFICATIONS

### CAPACITANCE RANGE:

0.01  $\mu$ F to 10.0  $\mu$ F

### AC VOLTAGE RANGE:

80 VRMS to 440 VRMS at 400Hz

### CAPACITANCE TOLERANCE:

$\pm$ 20%,  $\pm$ 10%,  $\pm$ 5%

### OPERATING TEMPERATURE:

-55°C to +105°C

### VOLTAGE DERATING:

At +105°C, 70% of +85°C rating

### DISSIPATION FACTOR:

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

### AC VOLTAGE TEST:

140% of rated voltage for 2 minutes

### INSULATION RESISTANCE:

Measurements made after a 2 minute charge at 200 VDC for AC ratings equal to or less than 330 VRMS and at 400 VDC for AC ratings greater than 330 VRMS.

- At +25°C, 50,000 Megaohm-Microfarads, need not exceed 100,000 Megaohms
- At +85°C, 10,000 Megaohm-Microfarads, need not exceed 50,000 Megaohms
- At +105°C, 2,000 Megaohm-Microfarads, need not exceed 10,000 Megaohms

# METAL-CASE HERMETICALLY-SEALED AC RATED METALIZED POLYPHENYLENE SULFIDE FILM CAPACITORS

TYPE 859P

## STANDARD RATINGS

Capacitance		Low Voltage Range 80 VRMS to 165 VRMS				Intermediate Voltage Range				High Voltage Range 390 VRMS to 440 VRMS			
µF	Code	400Hz VRMS 85°C	Voltage Code	Inches		400Hz VRMS 85°C	Voltage Code	Inches		400Hz VRMS 85°C	Voltage Code	Inches	
				D	L*			D	L*			D	L*
0.010	103	-	-	-	-	330	330	0.312	0.875	440	440	0.312	1.125
0.012	123	-	-	-	-	330	330	0.400	0.875	440	440	0.400	1.125
0.015	153	-	-	-	-	330	330	0.400	0.875	440	440	0.400	1.125
0.018	183	-	-	-	-	330	330	0.400	0.875	440	440	0.400	1.125
0.022	223	-	-	-	-	330	330	0.400	0.875	440	440	0.400	1.125
0.027	273	-	-	-	-	330	330	0.400	1.125	440	440	0.400	1.375
0.033	333	-	-	-	-	330	330	0.400	1.125	440	440	0.400	1.375
0.039	393	165	165	0.312	0.875	330	330	0.400	1.125	440	440	0.562	1.125
0.047	473	165	165	0.312	0.875	330	330	0.400	1.125	440	440	0.562	1.125
0.056	563	165	165	0.312	0.875	330	330	0.400	1.375	440	440	0.562	1.375
0.068	683	165	165	0.312	0.875	330	330	0.400	1.375	440	440	0.562	1.375
0.082	823	165	165	0.312	0.875	330	330	0.500	1.125	440	440	0.562	1.625
0.10	104	165	165	0.312	0.875	330	330	0.500	1.125	440	440	0.562	1.625
0.12	124	165	165	0.312	1.125	330	330	0.562	1.375	435	435	0.670	1.625
0.15	154	165	165	0.312	1.125	330	330	0.562	1.375	435	435	0.670	1.625
0.18	184	165	165	0.400	0.875	330	330	0.562	1.625	430	430	0.670	1.875
0.22	224	165	165	0.400	0.875	330	330	0.562	1.625	430	430	0.670	1.875
0.27	274	165	165	0.400	1.125	330	330	0.562	1.875	425	425	0.750	2.375
0.33	334	165	165	0.400	1.125	330	330	0.562	1.875	425	425	0.750	2.375
0.39	394	165	165	0.400	1.375	330	330	0.670	1.625	410	410	1.000	1.875
0.47	474	165	165	0.400	1.375	330	330	0.670	1.625	410	410	1.000	1.875
0.56	564	165	165	0.562	1.125	320	320	0.750	1.875	390	390	1.000	2.375
0.68	684	165	165	0.562	1.125	320	320	0.750	1.875	390	390	1.000	2.375
0.82	824	165	165	0.562	1.375	300	300	0.750	2.125	-	-	-	-
1.0	105	165	165	0.562	1.375	300	300	0.750	2.125	-	-	-	-
1.5	155	155	155	0.562	1.625	265	265	1.000	1.875	-	-	-	-
2.0	205	150	150	0.670	1.625	215	215	1.000	2.625	-	-	-	-
2.2	225	150	150	0.670	1.625	215	215	1.000	2.625	-	-	-	-
2.5	255	145	145	0.670	1.875	-	-	-	-	-	-	-	-
3.0	305	140	140	0.750	1.875	-	-	-	-	-	-	-	-
3.3	335	140	140	0.750	1.875	-	-	-	-	-	-	-	-
4.0	405	135	135	0.750	2.125	-	-	-	-	-	-	-	-
4.7	475	130	130	0.750	2.375	-	-	-	-	-	-	-	-
5.0	505	130	130	0.750	2.375	-	-	-	-	-	-	-	-
6.8	685	110	110	1.000	1.875	-	-	-	-	-	-	-	-
8.0	805	100	100	1.000	2.125	-	-	-	-	-	-	-	-
9.0	905	090	090	1.000	2.375	-	-	-	-	-	-	-	-
10.0	106	080	080	1.000	2.625	-	-	-	-	-	-	-	-

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

\* The dimensions tabulated above are for styles 02, 04, and 13. Subtract 0.062" from the length for styles 01, 03, and 12.

# METAL-CASE HERMETICALLY-SEALED METALIZED POLYPHENYLENE SULFIDE FILM CAPACITORS



## FEATURES

- High stability, polycarbonate replacement
- Small size
- Low power dissipation
- Low dielectric absorption
- Wire leads or tab terminals

### MAJOR APPLICATIONS:

Storage, filtering, timing, integrating, and applications where severe environments require hermetically sealed cases.

## PHYSICAL CHARACTERISTICS

### CONSTRUCTION:

Non-inductive wound metalized polyphenylene sulfide.

### CASE:

Hermetically sealed metal enclosure. Styles and dimensions are in Guide to Ordering section in the front of the catalog.

### LEAD MATERIAL:

Solder coated solid wire.

### LEAD WIRE SIZES:

Case Dia.	Lead AWG
0.175 and 0.195	No. 24
0.235	No. 22
0.312	No. 20
0.400 and over	No. 18

**LEAD PULL:** 5 lbs (2.3 kg) for one minute. No physical damage.

**LEAD BEND:** After three complete consecutive bends. No damage.

### MARKING:

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

## ELECTRICAL SPECIFICATIONS

### CAPACITANCE RANGE:

0.01  $\mu$ F to 10.0  $\mu$ F

### AC VOLTAGE RANGE:

126 to 250 VRMS

### CAPACITANCE TOLERANCE:

$\pm$ 20%,  $\pm$ 10%,  $\pm$ 5%

### OPERATING TEMPERATURE:

- -55°C to +125°C
- AC operation limited to +105°C

### VOLTAGE DERATING:

- At +105°C, 70% of the DC rated voltage
- At +125°C, 50% of the DC rated voltage

### DISSIPATION FACTOR:

0.15% maximum when measured @ 1 kHz @ 25°C

### VOLTAGE TEST:

200% of rated voltage for 2 minutes

### INSULATION RESISTANCE:

Measured at rated VDC after a 2 minute charge.

- At +25°C, 100,000 Megaohm-Microfarads, need not exceed 200,000 Megaohms
- At +85°C, 10,000 Megaohm-Microfarads, need not exceed 50,000 Megaohms
- At +125°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 V	300 V	400 V	600 V
0.750	40	80	-	-
0.875	24	45	70	100
1.125	16	30	41	75
1.375	13	23	28	50
1.625	10	-	21	38
1.875	7.6	13	18	27
2.125	6.4	-	15.5	-
2.375	5.5	9.6	-	19
2.625	4.8	8.5	10	-

# METAL-CASE HERMETICALLY-SEALED METALIZED POLYPHENYLENE SULFIDE FILM CAPACITORS

TYPE 860P

## STANDARD RATINGS

Capacitance		Voltage Code 200 200 VDC / 126 VAC*		Voltage Code 300 300 VDC / 180 VAC*		Voltage Code 400 400 VDC / 220 VAC*		Voltage Code 600 600 VDC / 250 VAC*	
µF	Code	D	L	D	L	D	L	D	L
0.010	103	0.174	0.750	0.235	0.750	0.312	0.875	0.312	0.875
0.015	153	0.193	0.750	0.312	0.875	0.312	0.875	0.400	1.125
0.022	223	0.235	0.750	0.312	0.875	0.312	0.875	0.400	1.125
0.033	333	0.235	0.750	0.312	0.875	0.312	1.125	0.400	1.125
0.047	473	0.312	0.875	0.312	0.875	0.312	1.125	0.400	1.375
0.068	683	0.312	0.875	0.312	1.125	0.400	1.125	0.562	1.125
0.10	104	0.312	0.875	0.400	1.125	0.400	1.375	0.562	1.375
0.15	154	0.312	1.125	0.400	1.375	0.500	1.125	0.562	1.625
0.22	224	0.400	0.875	0.500	1.125	0.562	1.375	0.670	1.625
0.33	334	0.400	1.125	0.562	1.125	0.562	1.625	0.750	1.875
0.47	474	0.400	1.375	0.562	1.375	0.670	1.625	0.750	2.375
0.68	684	0.562	1.125	0.562	1.875	0.670	1.875	1.000	1.875
1.00	105	0.562	1.375	0.670	1.875	0.750	2.125	1.000	2.375
2.00	205	0.670	1.625	0.750	2.375	1.000	2.125	-	-
2.50	255	0.670	1.875	0.750	2.625	1.000	2.625	-	-
3.00	305	0.750	1.875	1.000	1.875	-	-	-	-
4.00	405	0.750	2.125	1.000	2.375	-	-	-	-
5.00	505	0.750	2.375	-	-	-	-	-	-
6.00	605	1.000	1.875	-	-	-	-	-	-
7.00	705	1.000	1.875	-	-	-	-	-	-
10.00	106	1.000	2.625	-	-	-	-	-	-

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

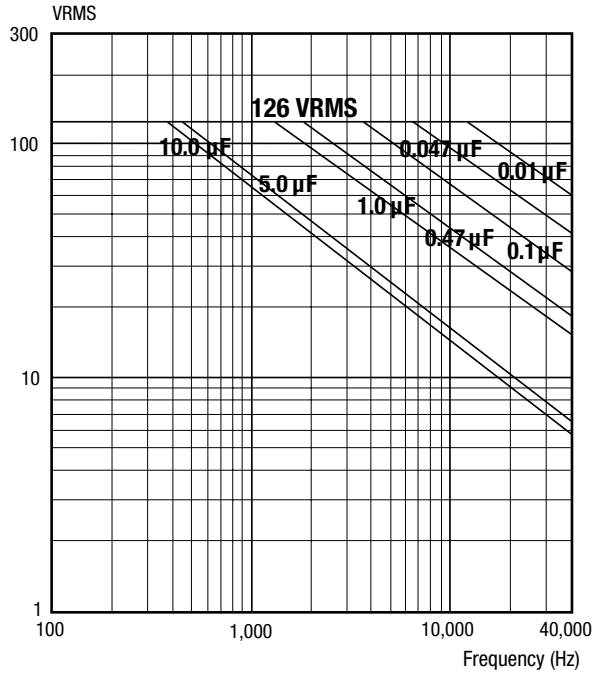
\* AC voltage rating is at 400Hz. 1.4 x VRMS + VDC should not exceed the rated VDC.

\* Graphs of AC voltage vs. frequency follow.

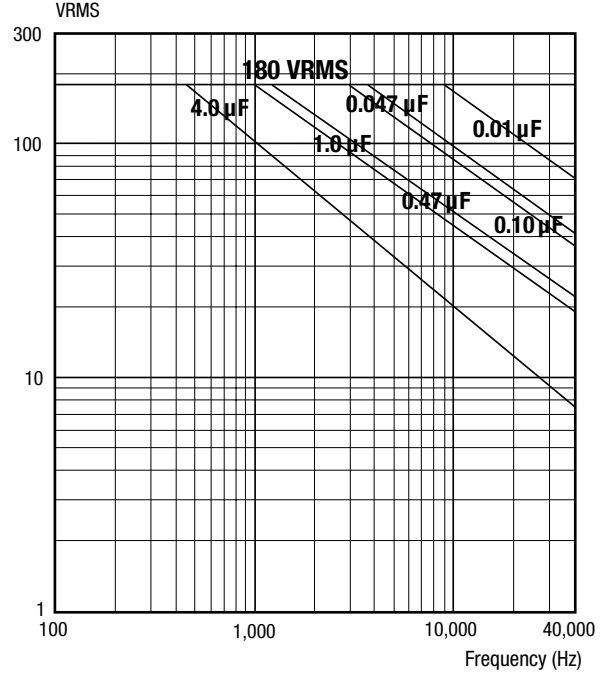
\* The dimensions tabulated above are for styles 02, 04, and 13. Subtract 0.062" from the length for styles 01, 03, and 12.

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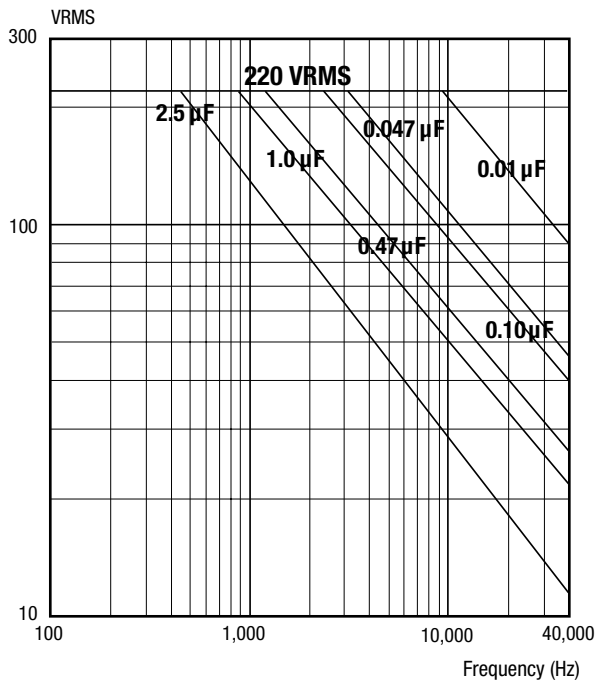
VOLTAGE VS. FREQUENCY TYPE 860P  
200 VDC / 126 VAC



VOLTAGE VS. FREQUENCY TYPE 860P  
300 VDC / 180 VAC



VOLTAGE VS. FREQUENCY TYPE 860P  
400 VDC / 220 VAC



VOLTAGE VS. FREQUENCY TYPE 860P  
600 VDC / 250 VAC

