Polyester Capacitors
Filmite® "E", ORANGE DROP®, Radial Lead

FEATURES

- Identical performance characteristics to Type 225P pressed polyester capacitors through 600 WVDC ratings
- Wound from PETP polyester film and thin gauge foil under carefully controlled atmospheric conditions
- Protected against moisture by a conformal coating of epoxy
- Specifically designed for printed wiring board applications
- Widely used in computers, instrumentation and telecommunications equipment

Pb-free
RoHS COMPLIANT

PERFORMANCE CHARACTERISTICS

Operating Temperature: - 55 °C to + 85 °C, standard; up to + 105 °C when WVDC is reduced to 70 % of + 85 °C rating. To + 125 °C when WVDC is 50 % of + 85 °C rating.

Insulation Resistance: After a 2 minute charge at rated voltage or 500 V, whichever is less.

At + 25 °C: 100 000 Megohm for C ≤ 0.25 Microfarads
25000 Megohm - Microfarads for C > 0.25 Microfarads
At + 85 °C: 10 000 Megohm for C ≤ 0.15 Microfarads
1500 Megohm - Microfarads for C > 0.15 Microfarads
At + 105 °C: 1500 Megohm for C ≤ 0.17 Microfarads
250 Megohm - Microfarads for C > 0.17 Microfarads
At + 125 °C: 200 Megohm for C ≤ 0.13 Microfarads
25 Megohm - Microfarads for C > 0.13 Microfarads

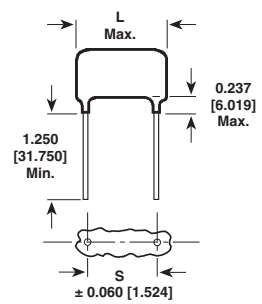
Capacitance Tolerance and Dissipation Factor:
Capacitors shall be measured at a frequency for 1000 Hz at + 25 °C or else be referred to measurements made at that frequency and temperature. The maximum dissipation factor shall be 0.75 %.

Dielectric Withstanding Voltage:
Capacitors rated below 1000 volts shall withstand a DC potential of 250 % of rated voltage applied between terminals for not more than 5 seconds. Capacitance rated 1000 volts and above shall withstand a DC potential of 200 % of rated voltage applied between the terminals for not more than 5 seconds. The test voltage must be applied and discharged through a resistor of 1 ohm per volt.

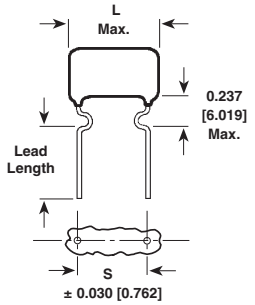
Humidity Test:
Condition capacitors with no voltage applied for 72 hours at 95 % relative humidity and + 75 °C. Remove capacitors from humidity chamber, wipe surface dry of moisture and dry in circulating air for 4 hours. Measure insulation resistance after a 2 minute charge at 25 °C and rated voltage or 500 VDC, whichever is less. Minimum product of insulation resistance and capacitance shall be 5000 Megohm - Microfarads after test but need not exceed 10 000 Megohm. Not more than one failure allowed in 12 units tested.

DC Life Test:
Capacitance are capable of withstanding a 500 hour life test at + 85 °C at 150 % of rated working voltage. After test, capacitance shall not have changed by more than 5 % of initial value, insulation resistance shall not have decreased by more than 50 % of the initial limit and dissipation factor shall not have increased to more than 1 %.

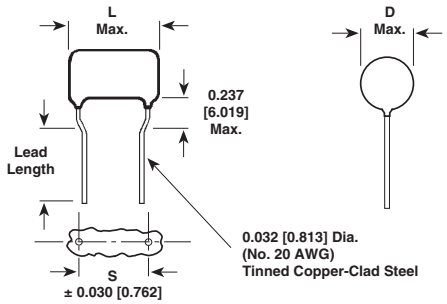
DIMENSIONS in inches [millimeters]



Terminal A



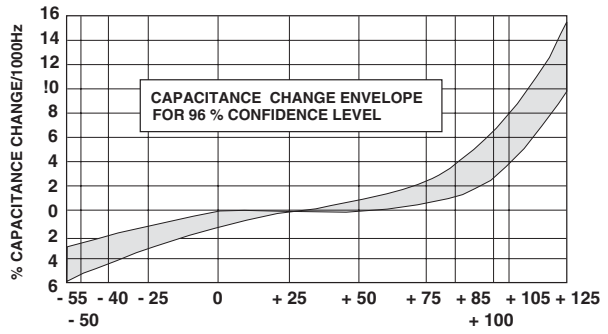
Terminal B



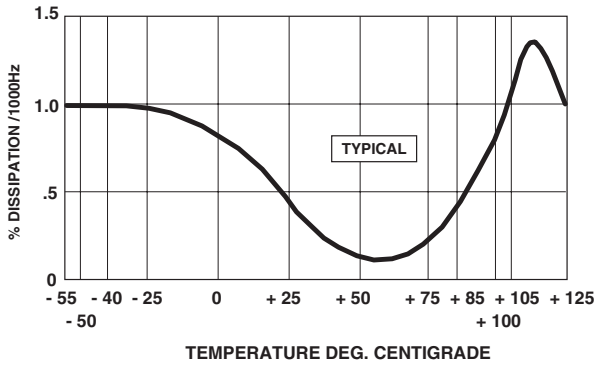
Terminal D

Case Code	L (Max.)	S	
		Terminal A and B	Terminal D
J	0.70 [17.78]	0.500 [12.700]	0.375 [9.525]
K	0.90 [22.86]	0.688 [17.475]	0.375 [9.525]
L	1.20 [30.48]	0.969 [24.613]	0.719 [18.263]
M	1.60 [40.64]	1.344 [34.138]	1.094 [27.788]

CAPACITANCE CHANGE



DISSIPATION FACTOR VS. TEMPERATURE



STANDARD RATINGS*

µF ± 10 % TOLERANCE	PART NUMBER	SIZE L	SIZE H
	100 VDC/70 VAC**		
0.027	418P27391J	0.70 [17.78]	0.35 [8.89]
0.033	418P33391J	0.70 [17.78]	0.35 [8.89]
0.047	418P47391J	0.70 [17.78]	0.35 [8.89]
0.082	418P82391K	0.90 [22.86]	0.40 [10.16]
0.1	418P10491K	0.90 [22.86]	0.40 [10.16]
0.15	418P15491K	0.90 [22.86]	0.45 [11.43]
0.22	418P22491L	1.20 [30.48]	0.45 [11.43]
0.33	418P33491L	1.20 [30.48]	0.50 [12.70]
0.47	418P47491M	1.60 [40.64]	0.50 [12.70]
0.68	418P68491M	1.60 [40.64]	0.60 [15.24]
1.0	418P10591M	1.60 [40.64]	0.70 [17.78]
	200 VDC/140 VAC**		
0.0056	418P56292J	0.70 [17.78]	0.33 [8.38]
0.0068	418P68292J	0.70 [17.78]	0.33 [8.38]
0.01	418P10392J	0.70 [17.78]	0.33 [8.38]
0.015	418P15392J	0.70 [17.78]	0.33 [8.38]
0.018	418P18392J	0.70 [17.78]	0.33 [8.38]
0.022	418P22392J	0.70 [17.78]	0.33 [8.38]
0.033	418P33392K	0.90 [22.86]	0.38 [9.65]
0.039	418P39392K	0.90 [22.86]	0.38 [9.65]
0.047	418P47392K	0.90 [22.86]	0.38 [9.65]
0.056	418P56392L	1.20 [30.48]	0.38 [9.65]
0.068	418P68392L	1.20 [30.48]	0.38 [9.65]
0.082	418P82392L	1.20 [30.48]	0.40 [10.16]
0.1	418P10492L	1.20 [30.48]	0.40 [10.16]
0.15	418P15492L	1.20 [30.48]	0.45 [11.43]
0.22	418P22492L	1.20 [30.48]	0.50 [12.70]
0.27	418P27492M	1.60 [40.64]	0.47 [11.94]
0.33	418P33492M	1.60 [40.64]	0.47 [11.94]
0.47	418P47492M	1.60 [40.64]	0.55 [13.97]

* These standard ratings are available through Sprague® distribution on special order. For complete Part Number, add letter and number for terminal and lead length in accordance with How to Order (Ex: 418P47492MD3).

** 60 Hz rms

STANDARD RATINGS* in inches [millimeters]			
µF ± 10 % TOLERANCE	**PART NUMBER**	**SIZE**	
		L	**H**
400 VDC/200 VAC**			
0.001	418P10294J	0.70 [17.78]	0.30 [7.62]
0.0015	418P15294J	0.70 [17.78]	0.30 [7.62]
0.0022	418P22294J	0.70 [17.78]	0.30 [7.62]
0.0033	418P33294J	0.70 [17.78]	0.30 [7.62]
0.0047	418P47294J	0.70 [17.78]	0.30 [7.62]
0.0068	418P68294J	0.70 [17.78]	0.33 [8.38]
0.0082	418P82294J	0.70 [17.78]	0.35 [8.89]
0.01	418P10394J	0.70 [17.78]	0.35 [8.89]
0.015	418P15394J	0.70 [17.78]	0.38 [9.65]
0.018	418P18394K	0.90 [22.86]	0.38 [9.65]
0.022	418P22394K	0.90 [22.86]	0.38 [9.65]
0.033	418P33394K	0.90 [22.86]	0.40 [10.16]
0.047	418P47394L	1.20 [30.48]	0.40 [10.16]
0.056	418P56394L	1.20 [30.48]	0.45 [11.43]
0.068	418P68394L	1.20 [30.48]	0.45 [11.43]
0.082	418P82394L	1.20 [30.48]	0.52 [13.21]
0.1	418P10494L	1.20 [30.48]	0.52 [13.21]
0.15	418P15494L	1.20 [30.48]	0.57 [14.48]
0.18	418P18494M	1.60 [40.64]	0.60 [15.24]
0.22	418P22494M	1.60 [40.64]	0.60 [15.24]
0.27	418P27494M	1.60 [40.64]	0.65 [16.51]
0.33	418P33494M	1.60 [40.64]	0.65 [16.51]
0.39	418P39494M	1.60 [40.64]	0.72 [18.29]
0.47	418P47494M	1.60 [40.64]	0.80 [20.32]
600 VDC/200 VAC**			
0.001	418P10296J	0.70 [17.78]	0.30 [7.62]
0.0012	418P12296J	0.70 [17.78]	0.33 [8.38]
0.0015	418P15296J	0.70 [17.78]	0.33 [8.38]
0.0018	418P18296J	0.70 [17.78]	0.33 [8.38]
0.0022	418P22296J	0.70 [17.78]	0.33 [8.38]
0.0027	418P27296J	0.70 [17.78]	0.35 [8.89]
0.0033	418P33296J	0.70 [17.78]	0.35 [8.89]
0.0039	418P39296J	0.70 [17.78]	0.38 [9.65]
0.0047	418P47296J	0.70 [17.78]	0.38 [9.65]
0.0056	418P56296J	0.70 [17.78]	0.40 [10.16]
0.0068	418P68296J	0.70 [17.78]	0.40 [10.16]
0.0082	418P82296K	0.90 [22.86]	0.40 [10.16]
0.01	418P10396K	0.90 [22.86]	0.40 [10.16]
0.012	418P12396K	0.90 [22.86]	0.40 [10.16]
0.015	418P15396K	0.90 [22.86]	0.40 [10.16]
0.018	418P18396K	0.90 [22.86]	0.45 [11.43]
0.022	418P22396K	0.90 [22.86]	0.45 [11.43]
0.027	418P27396L	1.20 [30.48]	0.45 [11.43]
0.033	418P33396L	1.20 [30.48]	0.45 [11.43]
0.039	418P39396L	1.20 [30.48]	0.55 [13.97]
0.047	418P47396L	1.20 [30.48]	0.55 [13.97]
0.056	418P56396L	1.20 [30.48]	0.60 [15.24]
0.068	418P68396L	1.20 [30.48]	0.60 [15.24]
0.082	418P82396L	1.20 [30.48]	0.65 [16.51]
0.1	418P10496L	1.20 [30.48]	0.65 [16.51]
0.12	418P12496M	1.60 [40.64]	0.70 [17.78]
0.15	418P15496M	1.60 [40.64]	0.70 [17.78]
0.18	418P18496M	1.60 [40.64]	0.80 [20.32]
0.22	418P22496M	1.60 [40.64]	0.80 [20.32]
0.25	418P25496M	1.60 [40.64]	0.80 [20.32]

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** 60 Hz rms

STANDARD RATINGS in inches [millimeters]

µF ± 10 % TOLERANCE	PART NUMBER	SIZE L	SIZE H
	1000 VDC/200 VAC**		
0.001	418P102910J	0.70 [17.78]	0.33 [8.38]
0.0015	418P152910J	0.70 [17.78]	0.33 [8.38]
0.0018	418P182910J	0.70 [17.78]	0.35 [8.89]
0.0022	418P222910J	0.70 [17.78]	0.35 [8.89]
0.0033	418P332910K	0.90 [22.86]	0.35 [8.89]
0.0047	418P472910K	0.90 [22.86]	0.40 [10.16]
0.0056	418P562910K	0.90 [22.86]	0.43 [10.92]
0.0068	418P682910K	0.90 [22.86]	0.43 [10.92]
0.0082	418P822910K	0.90 [22.86]	0.48 [12.19]
0.01	418P103910K	0.90 [22.86]	0.48 [12.19]
0.015	418P153910L	1.20 [30.48]	0.48 [12.19]
0.018	418P183910L	1.20 [30.48]	0.58 [14.73]
0.022	418P223910L	1.20 [30.48]	0.58 [14.73]
0.027	418P273910L	1.20 [30.48]	0.65 [16.51]
0.033	418P333910L	1.20 [30.48]	0.65 [16.51]
0.039	418P393910M	1.60 [40.64]	0.65 [16.51]
0.047	418P473910M	1.60 [40.64]	0.65 [16.51]
0.056	418P563910M	1.60 [40.64]	0.75 [19.05]
0.068	418P683910M	1.60 [40.64]	0.75 [19.05]
0.082	418P823910M	1.60 [40.64]	0.85 [21.59]
0.1	418P104910M	1.60 [40.64]	0.85 [21.59]

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** 60 Hz rms

ORDERING INFORMATION

418P	104	9	1	J, K, L or M	D	3	(-XXX)
TYPE	CAPACITANCE	TOLERANCE	DC VOLTAGE RATING	CASE CODE	TERMINAL	LEAD LENGTH	SPECIAL CONSTRUCTION
	Capacitance is expressed in picofarads. The first two digits are significant. The third is the number of zeros to follow. Values must conform to Decade Rating for the tolerance specified.	0 = ± 20 % 9 = ± 10 % 5 = ± 5 %	This is expressed in hundred of volts.	See Dimensional Configurations	A = Straight Lead B = Hairpin Crimped D = Hockey Crimped	1 = 0.187" ± 0.030" [4.750 ± 0.762] 2 = 0.250" ± 0.030" [6.350 ± 0.762] 3 = 1.250" [31.750] Minimum	A three-digit suffix may be added by the factory to denote special construction.

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