

## Polyester Capacitors Filmite® “E”, ORANGE DROP®, Radial Lead



### FEATURES

- Utilizes minimum area where printed wiring board space is most important
- 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
- 100 VDC through 600 VDC, may be operated up to + 125 °C with proper derating



**RoHS**  
COMPLIANT

### PERFORMANCE CHARACTERISTICS

#### Operating Temperature: - 55 °C to + 85 °C

To + 105 °C when working voltage is reduced to 70 % of + 85 °C rating; to + 125 °C when working voltage is reduced to 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  $C \leq 0.25$  Microfarads

25000 Megohm - Microfarads for  $C > 0.25$  Microfarads

At + 85 °C: 10 000 Megohm for  $C \leq 0.15$  Microfarads

1500 Megohm - Microfarads for  $C > 0.15$  Microfarads

At + 105 °C: 1500 Megohm for  $C \leq 0.17$  Microfarads

250 Megohm - Microfarads for  $C > 0.17$  Microfarads

At + 125 °C: 200 Megohm for  $C \leq 0.13$  Microfarads

25 Megohm - Microfarads for  $C > 0.13$  Microfarads

#### Capacitance Tolerance and Dissipation Factor:

Capacitors shall be measured at a frequency of 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 shall withstand a DC potential of 250 % of rated voltage applied between terminals for not more than 5 seconds. The test voltage must be applied and discharged through a resistor of 1 ohm per volt.

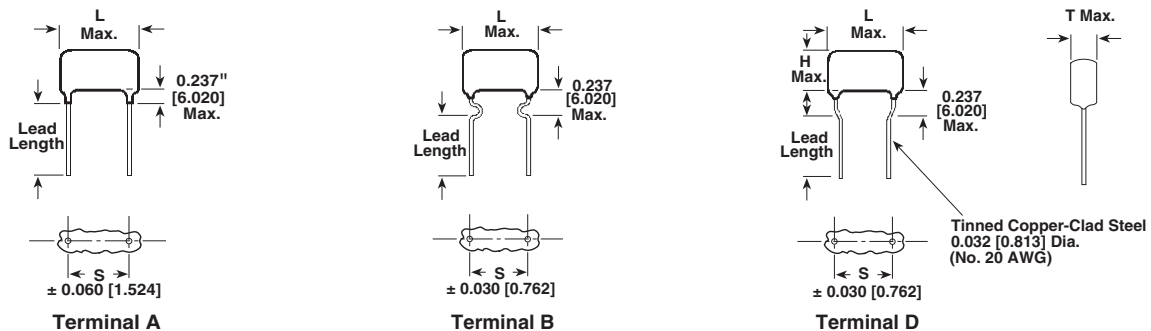
#### Humidity Test:

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:

Capacitors 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]

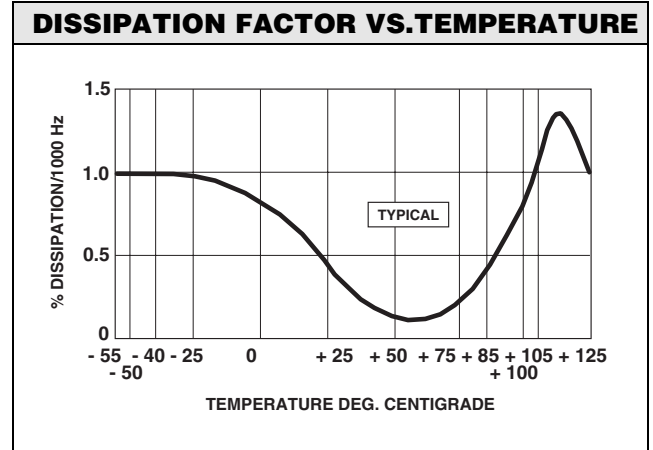
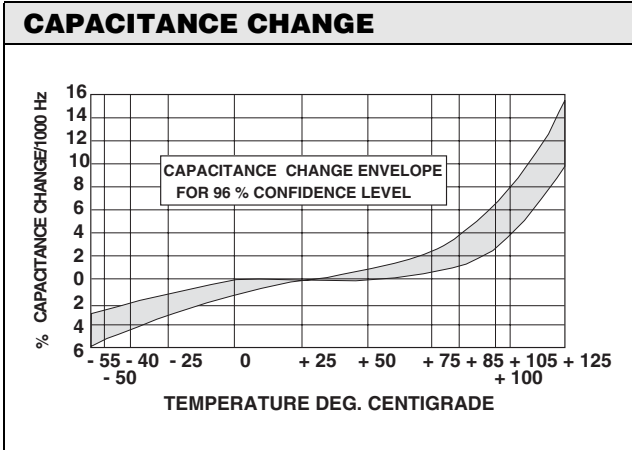


| CASE CODE | L (Max.)     | S                |                |
|-----------|--------------|------------------|----------------|
|           |              | Terminal A and B | Terminal D     |
| W         | 0.70 [17.78] | 0.562 [14.275]   | 0.375 [9.525]  |
| X         | 0.80 [20.32] | 0.613 [15.570]   | 0.375 [9.525]  |
| Y         | 1.25 [31.75] | 0.969 [24.613]   | 0.719 [18.263] |

# Type 225P

Vishay Sprague

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



**STANDARD RATINGS\***

| ± 10 % TOLERANCE | µF | PART NUMBER | SIZE             |              |
|------------------|----|-------------|------------------|--------------|
|                  |    |             | L                | T            |
|                  |    |             | 100 VDC/70 VAC** |              |
| 0.001            |    | 225P10291W  | 0.70 [17.78]     | 0.25 [6.35]  |
| 0.0012           |    | 225P12291W  | 0.70 [17.78]     | 0.25 [6.35]  |
| 0.0015           |    | 225P15291W  | 0.70 [17.78]     | 0.25 [6.35]  |
| 0.0018           |    | 225P18291W  | 0.70 [17.78]     | 0.25 [6.35]  |
| 0.0022           |    | 225P22291W  | 0.70 [17.78]     | 0.25 [6.35]  |
| 0.0027           |    | 225P27291W  | 0.70 [17.78]     | 0.25 [6.35]  |
| 0.0033           |    | 225P33291W  | 0.70 [17.78]     | 0.25 [6.35]  |
| 0.0039           |    | 225P39291W  | 0.70 [17.78]     | 0.25 [6.35]  |
| 0.0047           |    | 225P47291W  | 0.70 [17.78]     | 0.25 [6.35]  |
| 0.0056           |    | 225P56291W  | 0.70 [17.78]     | 0.25 [6.35]  |
| 0.0068           |    | 225P68291W  | 0.70 [17.78]     | 0.25 [6.35]  |
| 0.0082           |    | 225P82291W  | 0.70 [17.78]     | 0.25 [6.35]  |
| 0.01             |    | 225P10391W  | 0.70 [17.78]     | 0.25 [6.35]  |
| 0.012            |    | 225P12391W  | 0.70 [17.78]     | 0.25 [6.35]  |
| 0.015            |    | 225P15391W  | 0.70 [17.78]     | 0.25 [6.35]  |
| 0.018            |    | 225P18391W  | 0.70 [17.78]     | 0.25 [6.35]  |
| 0.022            |    | 225P22391W  | 0.70 [17.78]     | 0.25 [6.35]  |
| 0.027            |    | 225P27391W  | 0.70 [17.78]     | 0.27 [6.86]  |
| 0.033            |    | 225P33391W  | 0.70 [17.78]     | 0.27 [6.86]  |
| 0.039            |    | 225P39391W  | 0.70 [17.78]     | 0.30 [7.62]  |
| 0.047            |    | 225P47391W  | 0.70 [17.78]     | 0.30 [7.62]  |
| 0.056            |    | 225P56391W  | 0.70 [17.78]     | 0.34 [8.64]  |
| 0.068            |    | 225P68391W  | 0.70 [17.78]     | 0.34 [8.64]  |
| 0.082            |    | 225P82391W  | 0.70 [17.78]     | 0.40 [10.16] |
| 0.1              |    | 225P10491W  | 0.70 [17.78]     | 0.40 [10.16] |
| 0.12             |    | 225P12491X  | 0.80 [20.32]     | 0.37 [9.40]  |
| 0.15             |    | 225P15491X  | 0.80 [20.32]     | 0.40 [10.16] |
| 0.18             |    | 225P18491X  | 0.80 [20.32]     | 0.43 [10.92] |
| 0.22             |    | 225P22491X  | 0.80 [20.32]     | 0.46 [11.68] |
| 0.27             |    | 225P27491X  | 0.80 [20.32]     | 0.49 [12.45] |
| 0.33             |    | 225P33491X  | 0.80 [20.32]     | 0.52 [13.21] |
| 0.39             |    | 225P39491X  | 0.80 [20.32]     | 0.55 [13.97] |
| 0.47             |    | 225P47491X  | 0.80 [20.32]     | 0.60 [15.24] |
| 0.56             |    | 225P56491Y  | 1.25 [31.75]     | 0.55 [13.97] |
| 0.68             |    | 225P68491Y  | 1.25 [31.75]     | 0.58 [14.73] |
| 0.82             |    | 225P82491Y  | 1.25 [31.75]     | 0.65 [16.51] |
| 1.0              |    | 225P10591Y  | 1.25 [31.75]     | 0.72 [18.29] |

\* Parts ordered with D3 leads are standard capacitors in stock and available through the Sprague® Distribution Network. For complete Part Number, add letter and number for terminal and lead length. See Ordering Information (Ex: 225P39391WD3).

\*\* 60 Hz rms



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

**Type 225P**  
 Vishay Sprague

| <b>STANDARD RATINGS*</b> in inches [millimeters] |             |              |              |              |
|--|-------------|--------------|--------------|--------------|
| ± 10 % TOLERANCE                                 | PART NUMBER | SIZE         |              |              |
|  |             | L            | H            | T            |
| <b>200 VDC/140 VAC**</b>                         |             |              |              |              |
| 0.001  | 225P10292X  | 0.80 [20.32] | 0.55 [13.97] | 0.25 [6.35]  |
| 0.0015   | 225P15292X  | 0.80 [20.32] | 0.55 [13.97] | 0.25 [6.35]  |
| 0.0022   | 225P22292X  | 0.80 [20.32] | 0.55 [13.97] | 0.25 [6.35]  |
| 0.0033   | 225P33292X  | 0.80 [20.32] | 0.55 [13.97] | 0.25 [6.35]  |
| 0.0047   | 225P47292X  | 0.80 [20.32] | 0.55 [13.97] | 0.25 [6.35]  |
| 0.0068   | 225P68292X  | 0.80 [20.32] | 0.58 [14.73] | 0.25 [6.35]  |
| 0.01   | 225P10392X  | 0.80 [20.32] | 0.58 [14.73] | 0.25 [6.35]  |
| 0.015  | 225P15392X  | 0.80 [20.32] | 0.58 [14.73] | 0.25 [6.35]  |
| 0.022  | 225P22392X  | 0.80 [20.32] | 0.58 [14.73] | 0.25 [6.35]  |
| 0.033  | 225P33392X  | 0.80 [20.32] | 0.61 [15.49] | 0.28 [7.11]  |
| 0.047  | 225P47392X  | 0.80 [20.32] | 0.61 [15.49] | 0.28 [7.11]  |
| 0.068  | 225P68392X  | 0.80 [20.32] | 0.64 [16.26] | 0.31 [7.87]  |
| 0.1  | 225P10492X  | 0.80 [20.32] | 0.71 [18.03] | 0.37 [9.40]  |
| 0.1  | 225P10492Y  | 1.25 [31.75] | 0.64 [16.26] | 0.31 [7.87]  |
| 0.15   | 225P15492X  | 0.80 [20.32] | 0.74 [18.80] | 0.41 [10.41] |
| 0.22   | 225P22492X  | 0.80 [20.32] | 0.77 [19.56] | 0.48 [12.19] |
| 0.33   | 225P33492Y  | 1.25 [31.75] | 0.71 [18.03] | 0.41 [10.41] |
| 0.47   | 225P47492Y  | 1.25 [31.75] | 0.83 [21.08] | 0.50 [12.70] |
| 0.68   | 225P68492Y  | 1.25 [31.75] | 1.14 [28.96] | 0.84 [21.34] |
| <b>400 VDC/200 VAC**</b>                         |             |              |              |              |
| 0.001  | 225P10294X  | 0.80 [20.32] | 0.55 [13.97] | 0.25 [6.35]  |
| 0.0015   | 225P15294X  | 0.80 [20.32] | 0.55 [13.97] | 0.25 [6.35]  |
| 0.0022   | 225P22294X  | 0.80 [20.32] | 0.55 [13.97] | 0.25 [6.35]  |
| 0.0033   | 225P33294X  | 0.80 [20.32] | 0.55 [13.97] | 0.25 [6.35]  |
| 0.0047   | 225P47294X  | 0.80 [20.32] | 0.55 [13.97] | 0.25 [6.35]  |
| 0.0068   | 225P68294X  | 0.80 [20.32] | 0.58 [14.73] | 0.25 [6.35]  |
| 0.01   | 225P10394X  | 0.80 [20.32] | 0.58 [14.73] | 0.28 [7.11]  |
| 0.015  | 225P15394X  | 0.80 [20.32] | 0.58 [14.73] | 0.28 [7.11]  |
| 0.022  | 225P22394X  | 0.80 [20.32] | 0.58 [14.73] | 0.31 [7.87]  |
| 0.033  | 225P33394X  | 0.80 [20.32] | 0.65 [16.51] | 0.34 [8.64]  |
| 0.047  | 225P47394X  | 0.80 [20.32] | 0.65 [16.51] | 0.41 [10.41] |
| 0.047  | 225P47394Y  | 1.25 [31.75] | 0.64 [16.26] | 0.31 [7.87]  |
| 0.068  | 225P68394X  | 0.80 [20.32] | 0.80 [20.32] | 0.47 [11.94] |
| 0.1  | 225P10494X  | 0.80 [20.32] | 0.84 [21.34] | 0.52 [13.21] |
| 0.1  | 225P10494Y  | 1.25 [31.75] | 0.74 [18.80] | 0.41 [10.41] |
| 0.15   | 225P15494Y  | 1.25 [31.75] | 0.80 [20.32] | 0.47 [11.94] |
| 0.22   | 225P22494Y  | 1.25 [31.75] | 0.89 [22.61] | 0.56 [14.22] |
| 0.33   | 225P33494Y  | 1.25 [31.75] | 0.99 [25.15] | 0.72 [18.29] |
| 0.47   | 225P47494Y  | 1.25 [31.75] | 1.14 [28.96] | 0.84 [21.34] |

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\*\* 60 Hz rms

# Type 225P

Vishay Sprague

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



| STANDARD RATINGS* in inches [millimeters] |             |              |              |              |
|---|-------------|--------------|--------------|--------------|
| ± 10 % TOLERANCE                          | PART NUMBER | SIZE         |              |              |
|   |             | L            | H            | T            |
| <b>600 VDC/200 VAC**</b>                  |             |              |              |              |
| 0.001                                     | 225P10296X  | 0.80 [20.32] | 0.55 [13.97] | 0.25 [6.35]  |
| 0.0015                                    | 225P15296X  | 0.80 [20.32] | 0.55 [13.97] | 0.25 [6.35]  |
| 0.0022                                    | 225P22296X  | 0.80 [20.32] | 0.55 [13.97] | 0.25 [6.35]  |
| 0.0033                                    | 225P33296X  | 0.80 [20.32] | 0.55 [13.97] | 0.25 [6.35]  |
| 0.0047                                    | 225P47296X  | 0.80 [20.32] | 0.58 [14.73] | 0.25 [6.35]  |
| 0.0068                                    | 225P68296X  | 0.80 [20.32] | 0.58 [14.73] | 0.25 [6.35]  |
| 0.01                                      | 225P10396X  | 0.80 [20.32] | 0.64 [16.26] | 0.31 [7.87]  |
| 0.015                                     | 225P15396X  | 0.80 [20.32] | 0.67 [17.02] | 0.34 [8.64]  |
| 0.018                                     | 225P18396X  | 0.80 [20.32] | 0.74 [18.80] | 0.37 [9.40]  |
| 0.022                                     | 225P22396X  | 0.80 [20.32] | 0.74 [18.80] | 0.37 [9.40]  |
| 0.033                                     | 225P33396X  | 0.80 [20.32] | 0.77 [19.56] | 0.44 [11.18] |
| 0.039                                     | 225P39396X  | 0.80 [20.32] | 0.83 [21.08] | 0.50 [12.70] |
| 0.047                                     | 225P47396X  | 0.80 [20.32] | 0.83 [21.08] | 0.50 [12.70] |
| 0.068                                     | 225P68396Y  | 1.25 [31.75] | 0.82 [20.83] | 0.47 [11.94] |
| 0.1                                       | 225P10496Y  | 1.25 [31.75] | 0.91 [23.11] | 0.56 [14.22] |
| 0.22                                      | 225P22496Y  | 1.25 [31.75] | 1.10 [27.94] | 0.76 [19.30] |

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\*\* 60 Hz rms

| ORDERING INFORMATION |   |  |  |                                 |  |  |  |
|----------------------|---|--|--|---------------------------------|--|--|--|
| 225P                 | 104   | 9                                      | 1                                      | W                               | 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 %<br>9 = ± 10 %<br>5 = ± 50 % | This is expressed in hundred of volts. | See Dimensional Configurations. | A = Straight Lead<br>B = Hairpin Crimped<br>D = Hockey Crimped | 1 = 0.187" ± 0.030"<br>[4.750 ± 0.762]<br>2 = 0.250" ± 0.030"<br>[6.350 ± 0.762]<br>3 = 1.250" [31.750]<br>Minimum | A three-digit suffix may be added by the factory to denote special construction. |

**Note:** Some Part Numbers are in stock and available through the Vishay Sprague® Distribution Network. Other Part Numbers are available on special order through Vishay Sprague® Distribution. In the construction of the components described, the full intent of the specification will be met. Vishay however, reserves the right to make, from time to time, such departures from the detail specifications as may be required to permit improvements in the design of its products. The information included herein is believed to be accurate and reliable. However, Vishay Sprague® assumes no responsibility for its use nor for any infringements of patents of other rights of third parties which may result from its use.



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