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 dearting

Pb-free
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 ≤ 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

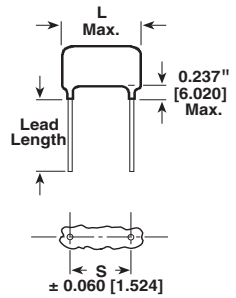
Capacitance Tolerance and Dissipation Factor:
Capacitors shall be measured at a frequency of 1000 Hz at + 25 °C or else be referred to measurements made at that frequency and temperature. The maximum dissipation factor shall be 0.75 %

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.

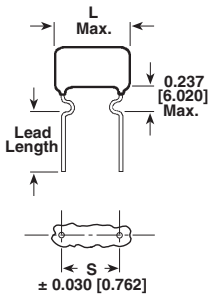
Humidity Test:
Condition capacitors with no voltage applied for 72 hours at 95 % relative humidity and + 75 °C. Remove capacitors from humidity chamber, wipe surface dry of moisture and dry in circulating air for 4 hours. Measure insulation resistance after a 2 minute charge at 25 °C and rated voltage 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:
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 %.

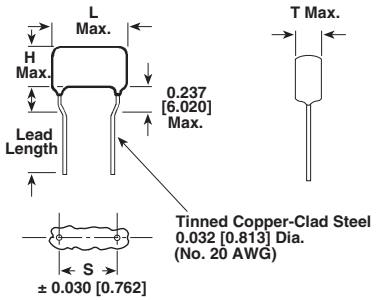
DIMENSIONS in inches [millimeters]



Terminal A



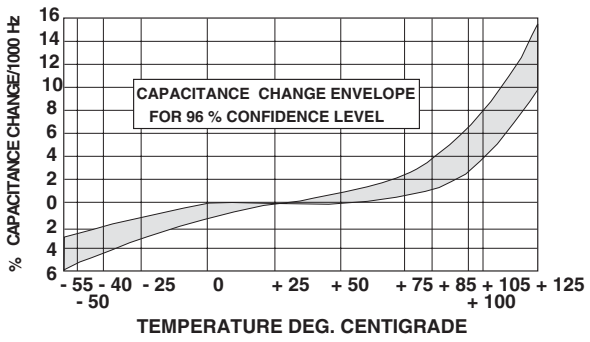
Terminal B



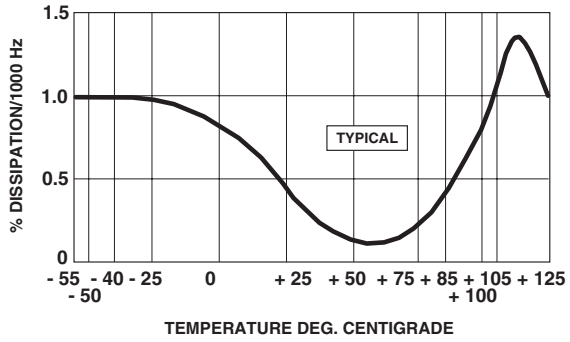
Terminal D

CASE CODE	L (Max.)	S	
		Terminal A and B	Terminal D
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]

CAPACITANCE CHANGE



DISSIPATION FACTOR VS.TEMPERATURE



STANDARD RATINGS*

µF ± 10 % TOLERANCE	PART NUMBER	SIZE L	SIZE H	SIZE T
		100 VDC/70 VAC**		
0.001	225P10291W	0.70 [17.78]	0.35 [8.89]	0.25 [6.35]
0.0012	225P12291W	0.70 [17.78]	0.35 [8.89]	0.25 [6.35]
0.0015	225P15291W	0.70 [17.78]	0.35 [8.89]	0.25 [6.35]
0.0018	225P18291W	0.70 [17.78]	0.35 [8.89]	0.25 [6.35]
0.0022	225P22291W	0.70 [17.78]	0.35 [8.89]	0.25 [6.35]
0.0027	225P27291W	0.70 [17.78]	0.35 [8.89]	0.25 [6.35]
0.0033	225P33291W	0.70 [17.78]	0.35 [8.89]	0.25 [6.35]
0.0039	225P39291W	0.70 [17.78]	0.35 [8.89]	0.25 [6.35]
0.0047	225P47291W	0.70 [17.78]	0.35 [8.89]	0.25 [6.35]
0.0056	225P56291W	0.70 [17.78]	0.35 [8.89]	0.25 [6.35]
0.0068	225P68291W	0.70 [17.78]	0.35 [8.89]	0.25 [6.35]
0.0082	225P82291W	0.70 [17.78]	0.35 [8.89]	0.25 [6.35]
0.01	225P10391W	0.70 [17.78]	0.35 [8.89]	0.25 [6.35]
0.012	225P12391W	0.70 [17.78]	0.35 [8.89]	0.25 [6.35]
0.015	225P15391W	0.70 [17.78]	0.35 [8.89]	0.25 [6.35]
0.018	225P18391W	0.70 [17.78]	0.35 [8.89]	0.25 [6.35]
0.022	225P22391W	0.70 [17.78]	0.35 [8.89]	0.25 [6.35]
0.027	225P27391W	0.70 [17.78]	0.37 [9.40]	0.27 [6.86]
0.033	225P33391W	0.70 [17.78]	0.37 [9.40]	0.27 [6.86]
0.039	225P39391W	0.70 [17.78]	0.42 [10.67]	0.30 [7.62]
0.047	225P47391W	0.70 [17.78]	0.42 [10.67]	0.30 [7.62]
0.056	225P56391W	0.70 [17.78]	0.49 [12.45]	0.34 [8.64]
0.068	225P68391W	0.70 [17.78]	0.49 [12.45]	0.34 [8.64]
0.082	225P82391W	0.70 [17.78]	0.55 [13.97]	0.40 [10.16]
0.1	225P10491W	0.70 [17.78]	0.55 [13.97]	0.40 [10.16]
0.12	225P12491X	0.80 [20.32]	0.57 [14.48]	0.37 [9.40]
0.15	225P15491X	0.80 [20.32]	0.62 [15.75]	0.40 [10.16]
0.18	225P18491X	0.80 [20.32]	0.66 [16.76]	0.43 [10.92]
0.22	225P22491X	0.80 [20.32]	0.70 [17.78]	0.46 [11.68]
0.27	225P27491X	0.80 [20.32]	0.74 [18.80]	0.49 [12.45]
0.33	225P33491X	0.80 [20.32]	0.77 [19.56]	0.52 [13.21]
0.39	225P39491X	0.80 [20.32]	0.81 [20.57]	0.55 [13.97]
0.47	225P47491X	0.80 [20.32]	0.86 [21.84]	0.60 [15.24]
0.56	225P56491Y	1.25 [31.75]	0.88 [22.35]	0.55 [13.97]
0.68	225P68491Y	1.25 [31.75]	0.90 [22.86]	0.58 [14.73]
0.82	225P82491Y	1.25 [31.75]	0.94 [23.88]	0.65 [16.51]
1.0	225P10591Y	1.25 [31.75]	0.98 [24.89]	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

STANDARD RATINGS* in inches [millimeters]				
µF ± 10 % TOLERANCE	**PART NUMBER**	**SIZE**		
		L	**H**	**T**
200 VDC/140 VAC**				
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]
400 VDC/200 VAC**				
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]

* 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 How to Order (Ex: 225P39391WD3).

** 60 Hz rms

STANDARD RATINGS* in inches [millimeters]

µF ± 10 % TOLERANCE	PART NUMBER	SIZE L	SIZE H	SIZE T
		600 VDC/200 VAC**		
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]

* 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 How to Order (Ex: 225P39391WD3).
* 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 % 9 = ± 10 % 5 = ± 50 %	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.

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 patens of other rights of third parties which may result from its use.

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- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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AVIC JONHON

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FORSTAR®

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