

# Type 715P/717P, Orange Drop®, High Voltage, Polypropylene Film/Foil



Type 715P/717P are high AC voltage, film/foil polypropylene capacitors. Well suited for high AC voltage applications requiring corona free performance. These capacitors are ideal in high frequency, high pulse current applications and offer excellent stability, virtually linear temperature coefficient.

## Highlights

- Very low dissipation factor
- High dV/dt rating

## Specifications

|                                |                                                                                                                          |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Capacitance Range              | 470 pF to .015 $\mu$ F                                                                                                   |
| Capacitance Tolerance          | $\pm 1\%$ to $\pm 10\%$                                                                                                  |
| Rated Voltage                  | 800/900 Vac (1800/2000 Vdc)                                                                                              |
| Operating Temperature Range    | -55 °C to 85 °C<br>+105 °C with proper voltage derating                                                                  |
| Lead Wire                      | Tinned copper clad steel, .032" (0.8) diameter, #20 AWG                                                                  |
| Corona Start Voltage (typical) | 800 Vac units: 950 - 1000 V RMS<br>900 Vac units: 1050 - 1100 V RMS                                                      |
| Dielectric                     | Polypropylene film; utilizing a floating common of metallized polypropylene, which provides self-healing characteristics |
| Construction                   | Non-inductively wound with extended foil, internal series section design                                                 |
| Encapsulations                 | Conformal coating of flame retardant orange epoxy (meets UL94V-0)                                                        |
| Insulation Resistance          | 400,000 M $\Omega$ minimum at +25 °C<br>20,000 M $\Omega$ minimum at +85 °C<br>2,000 M $\Omega$ minimum at +105 °C       |
| RoHS Compliant                 |                                                                                                                          |

## Part Numbering System

Dimensions in inches, metric (mm) in parenthesis.

| 715P/717P            | 222           | 5                     | 800               | L         | B                      | 3                                 | (XXXX)         |
|----------------------|---------------|-----------------------|-------------------|-----------|------------------------|-----------------------------------|----------------|
| Series               | Capacitance   | Capacitance Tolerance | AC Voltage Rating | Case Code | Terminal               | Lead Length                       | Suffix         |
| 715P Round Profile   | 222 = 2200 pF | 9 = $\pm 10\%$        |                   |           | A = Straight Lead      | 1 = 0.187 (4.7) $\pm 0.030$ (0.8) | May be added   |
| 717P Pressed Profile |               | 5 = $\pm 5\%$         |                   |           | B = Hairpin Crimp      | 2 = 0.250 (6.4) $\pm 0.030$ (0.8) | by factory to  |
|                      |               | 3 = $\pm 3\%$         |                   |           | C = Captive Crimp *    | 3 = 1.250 (32) Minimum            | denote special |
|                      |               | 2 = $\pm 2\%$         |                   |           | D = Hockey Stick Crimp | (Custom lead lengths available)   | construction   |
|                      |               | 1 = $\pm 1\%$         |                   |           |                        |                                   |                |

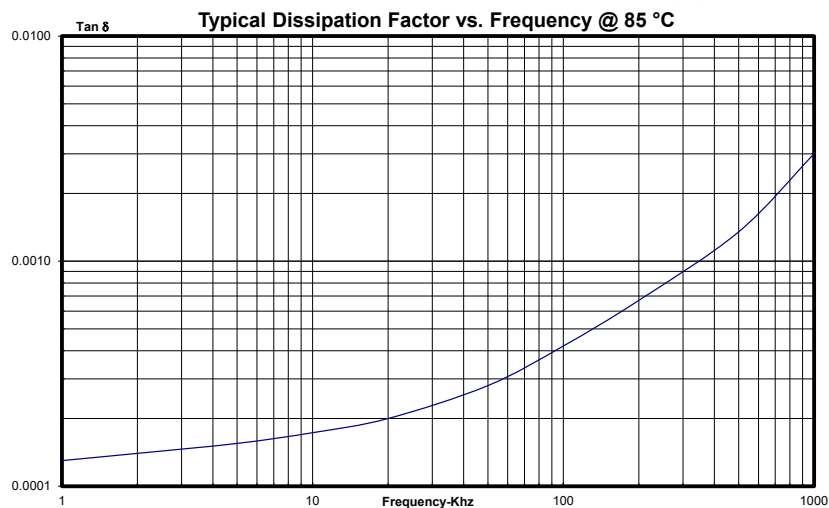
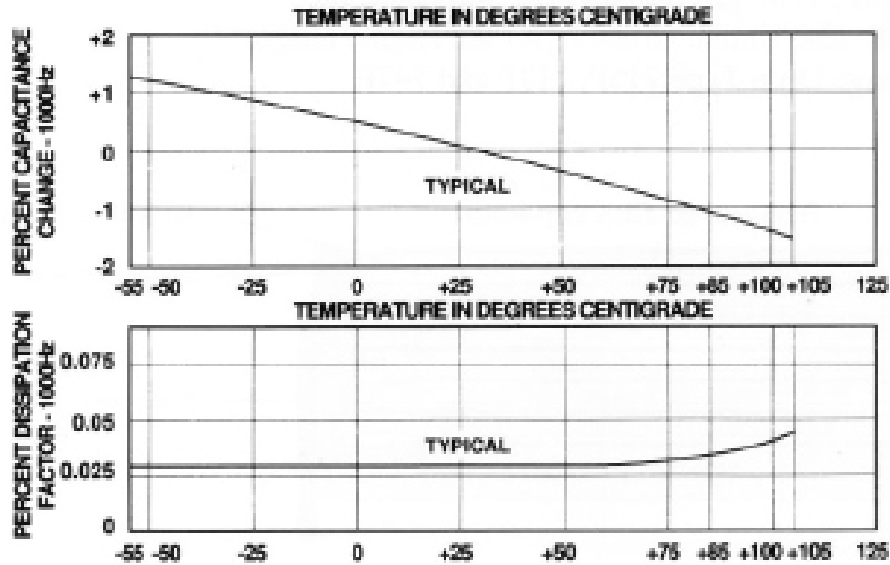
\*Terminal C has a lead length of 0.156 (4.0)  $\pm 0.020$  (0.5) therefore it is not necessary to indicate the lead length digit. The Captive Crimp is designed for circuit boards with hole sizes of .044 (1.1) to .048 (1.2) in diameter.

# Type 715P/717P, Orange Drop®, High Voltage, Polypropylene Film/Foil Ratings

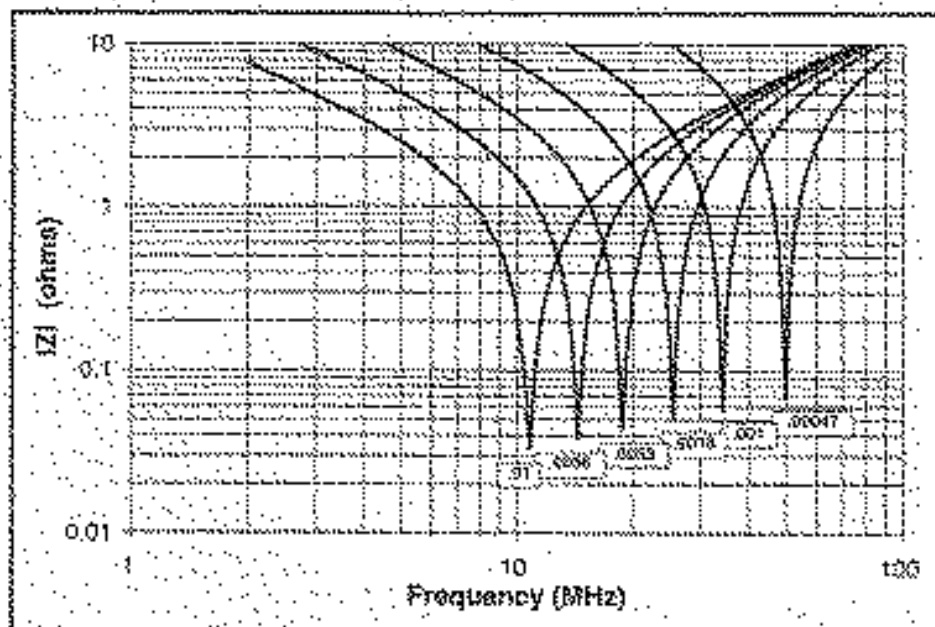
| Cap.<br>(μF)                                     | Catalog<br>Part Number | L Max        | Dia Max    | H Max      | Seated<br>Height | Max dV/dt<br>(Volts/μsec) | Max % D.F. @<br>20 KHz | 100 KHz |
|--------------------------------------------------|------------------------|--------------|------------|------------|------------------|---------------------------|------------------------|---------|
| <b>Type 715P, 800 Vac Standard Sizes/Ratings</b> |                        |              |            |            |                  |                           |                        |         |
| 0.00047                                          | 715P4715800L           | 1.125 (28.5) | .29 (7.4)  | .35 (8.9)  | .60 (15.3)       | 95000                     | 0.029                  | 0.039   |
| 0.00056                                          | 715P5615800L           | 1.125 (28.5) | .30 (7.6)  | .36 (9.2)  | .61 (15.5)       | 87000                     | 0.029                  | 0.040   |
| 0.00068                                          | 715P6815800L           | 1.125 (28.5) | .32 (8.1)  | .37 (9.4)  | .62 (15.8)       | 79000                     | 0.029                  | 0.040   |
| 0.00082                                          | 715P8215800L           | 1.125 (28.5) | .28 (7.1)  | .33 (8.4)  | .58 (14.7)       | 72000                     | 0.030                  | 0.043   |
| 0.001                                            | 715P1025800L           | 1.125 (28.5) | .28 (7.1)  | .33 (8.4)  | .58 (14.7)       | 65000                     | 0.030                  | 0.043   |
| 0.0012                                           | 715P1225800L           | 1.125 (28.5) | .29 (7.4)  | .35 (8.9)  | .60 (15.3)       | 60000                     | 0.030                  | 0.044   |
| 0.0015                                           | 715P1525800L           | 1.125 (28.5) | .31 (7.9)  | .36 (9.2)  | .61 (15.5)       | 53000                     | 0.030                  | 0.044   |
| 0.0018                                           | 715P1825800L           | 1.125 (28.5) | .32 (8.1)  | .38 (9.7)  | .63 (16.0)       | 49000                     | 0.030                  | 0.044   |
| 0.0022                                           | 715P2225800L           | 1.125 (28.5) | .34 (8.6)  | .40 (10.2) | .65 (16.5)       | 44000                     | 0.030                  | 0.045   |
| 0.0027                                           | 715P2725800L           | 1.125 (28.5) | .36 (9.2)  | .42 (10.7) | .67 (17.0)       | 40000                     | 0.030                  | 0.045   |
| 0.0033                                           | 715P3325800L           | 1.125 (28.5) | .38 (9.7)  | .44 (11.2) | .69 (17.5)       | 36000                     | 0.031                  | 0.046   |
| 0.0039                                           | 715P3925800L           | 1.125 (28.5) | .41 (10.4) | .46 (11.7) | .71 (18.0)       | 33000                     | 0.031                  | 0.046   |
| 0.0047                                           | 715P4725800L           | 1.125 (28.5) | .43 (10.9) | .49 (12.5) | .74 (18.8)       | 30000                     | 0.031                  | 0.047   |
| 0.0056                                           | 715P5625800L           | 1.125 (28.5) | .46 (11.7) | .52 (13.2) | .77 (19.6)       | 28000                     | 0.031                  | 0.048   |
| 0.0068                                           | 715P6825800L           | 1.125 (28.5) | .49 (12.5) | .55 (14.0) | .80 (20.3)       | 25000                     | 0.031                  | 0.049   |
| 0.0082                                           | 715P8225800L           | 1.125 (28.5) | .53 (13.5) | .58 (14.7) | .83 (21.2)       | 23000                     | 0.031                  | 0.051   |
| 0.01                                             | 715P1035800L           | 1.125 (28.5) | .57 (14.5) | .63 (16.0) | .88 (22.4)       | 21000                     | 0.032                  | 0.053   |
| 0.012                                            | 715P1235800L           | 1.125 (28.5) | .61 (15.5) | .67 (17.0) | .92 (23.4)       | 19000                     | 0.032                  | 0.055   |
| 0.015                                            | 715P1535800L           | 1.125 (28.5) | .67 (17.0) | .72 (18.3) | .97 (24.6)       | 17000                     | 0.033                  | 0.058   |
| <b>Type 717P, 800 Vac Standard Sizes/Ratings</b> |                        |              |            |            |                  |                           |                        |         |
| 0.00047                                          | 717P4715800L           | 1.125 (28.5) | .21 (5.4)  | .39 (9.9)  | .64 (16.3)       | 95000                     | 0.029                  | 0.039   |
| 0.00056                                          | 717P5615800L           | 1.125 (28.5) | .22 (5.6)  | .40 (10.2) | .65 (16.5)       | 87000                     | 0.029                  | 0.040   |
| 0.00068                                          | 717P6815800L           | 1.125 (28.5) | .24 (6.1)  | .42 (10.7) | .67 (17.0)       | 79000                     | 0.029                  | 0.040   |
| 0.00082                                          | 717P8215800L           | 1.125 (28.5) | .20 (5.1)  | .38 (9.7)  | .63 (16.0)       | 72000                     | 0.030                  | 0.043   |
| 0.001                                            | 717P1025800L           | 1.125 (28.5) | .20 (5.1)  | .38 (9.7)  | .63 (16.0)       | 65000                     | 0.030                  | 0.043   |
| 0.0012                                           | 717P1225800L           | 1.125 (28.5) | .21 (5.4)  | .39 (9.9)  | .64 (16.3)       | 60000                     | 0.030                  | 0.044   |
| 0.0015                                           | 717P1525800L           | 1.125 (28.5) | .31 (7.9)  | .41 (10.4) | .66 (16.8)       | 53000                     | 0.030                  | 0.044   |
| 0.0018                                           | 717P1825800L           | 1.125 (28.5) | .23 (5.9)  | .42 (10.7) | .67 (17.0)       | 49000                     | 0.030                  | 0.044   |
| 0.0022                                           | 717P2225800L           | 1.125 (28.5) | .24 (6.1)  | .45 (11.4) | .70 (17.8)       | 44000                     | 0.030                  | 0.045   |
| 0.0027                                           | 717P2725800L           | 1.125 (28.5) | .25 (6.4)  | .47 (11.9) | .72 (18.3)       | 40000                     | 0.030                  | 0.045   |
| 0.0033                                           | 717P3325800L           | 1.125 (28.5) | .27 (6.9)  | .50 (12.7) | .75 (19.1)       | 36000                     | 0.031                  | 0.046   |
| 0.0039                                           | 717P3925800L           | 1.125 (28.5) | .29 (7.4)  | .55 (14.0) | .80 (20.3)       | 33000                     | 0.031                  | 0.046   |
| 0.0047                                           | 717P4725800L           | 1.125 (28.5) | .29 (7.4)  | .57 (14.5) | .82 (20.8)       | 30000                     | 0.031                  | 0.047   |
| 0.0056                                           | 717P5625800L           | 1.125 (28.5) | .32 (8.1)  | .60 (15.3) | .85 (21.6)       | 28000                     | 0.031                  | 0.048   |
| 0.0068                                           | 717P6825800L           | 1.125 (28.5) | .34 (8.6)  | .63 (16.0) | .88 (22.4)       | 25000                     | 0.031                  | 0.049   |
| 0.0082                                           | 717P8225800L           | 1.125 (28.5) | .38 (9.7)  | .69 (17.5) | .94 (23.9)       | 23000                     | 0.031                  | 0.051   |
| 0.01                                             | 717P1035800L           | 1.125 (28.5) | .43 (10.9) | .73 (18.5) | .98 (24.9)       | 21000                     | 0.032                  | 0.053   |
| 0.012                                            | 717P1235800L           | 1.125 (28.5) | .44 (11.2) | .79 (20.1) | 1.04 (26.4)      | 19000                     | 0.032                  | 0.055   |
| 0.015                                            | 717P1535800L           | 1.125 (28.5) | .50 (12.7) | .85 (21.6) | 1.10 (27.9)      | 17000                     | 0.033                  | 0.058   |

# Type 715P/717P, Orange Drop®, High Voltage, Polypropylene Film/Foil

## 800 Vac Performance Characteristics



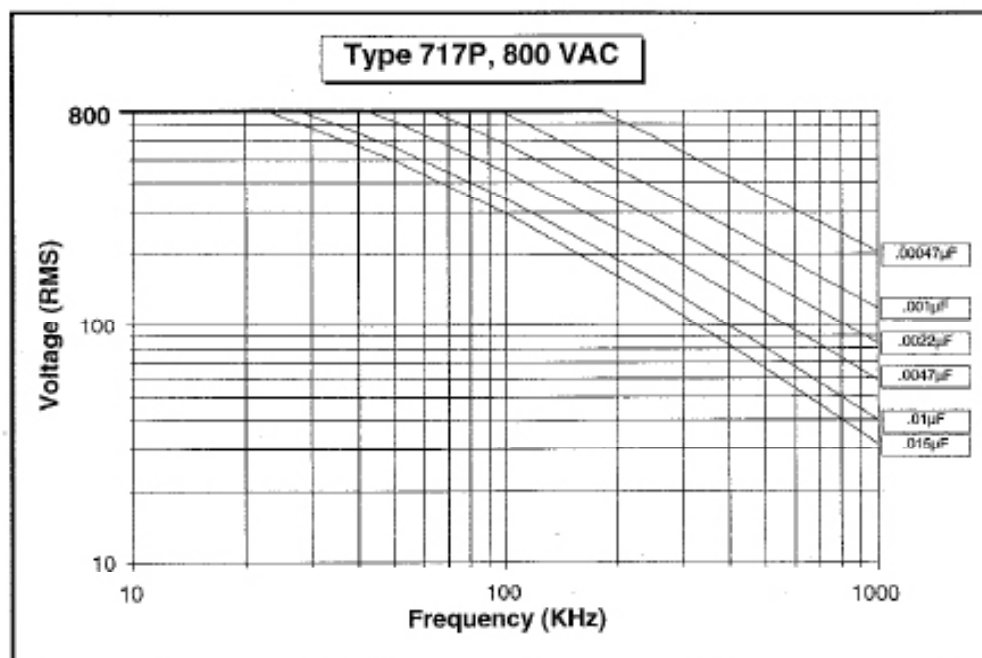
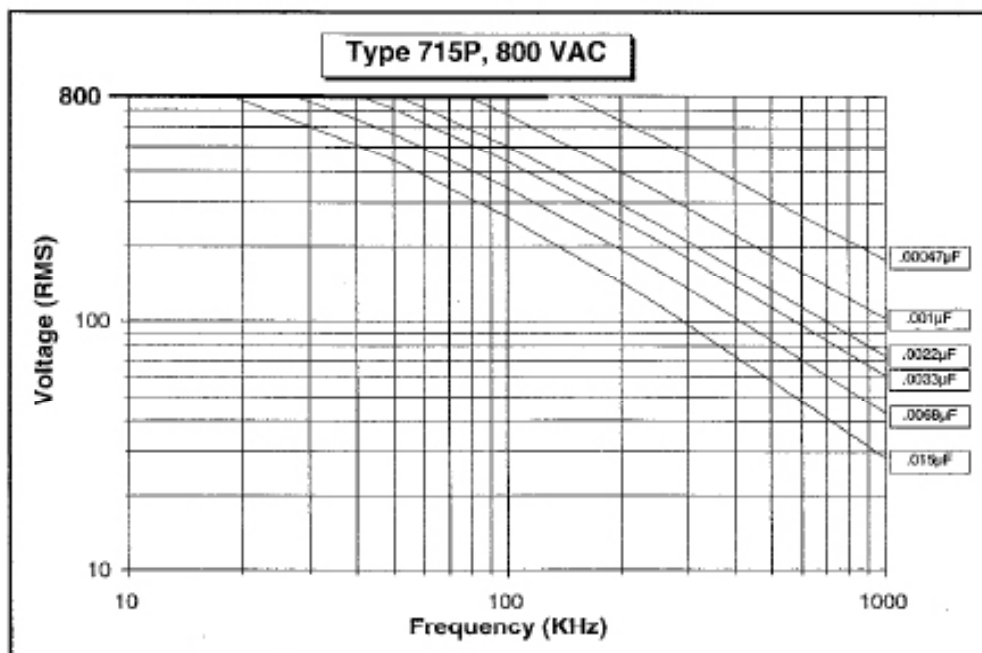
Typical Impedance vs. Frequency



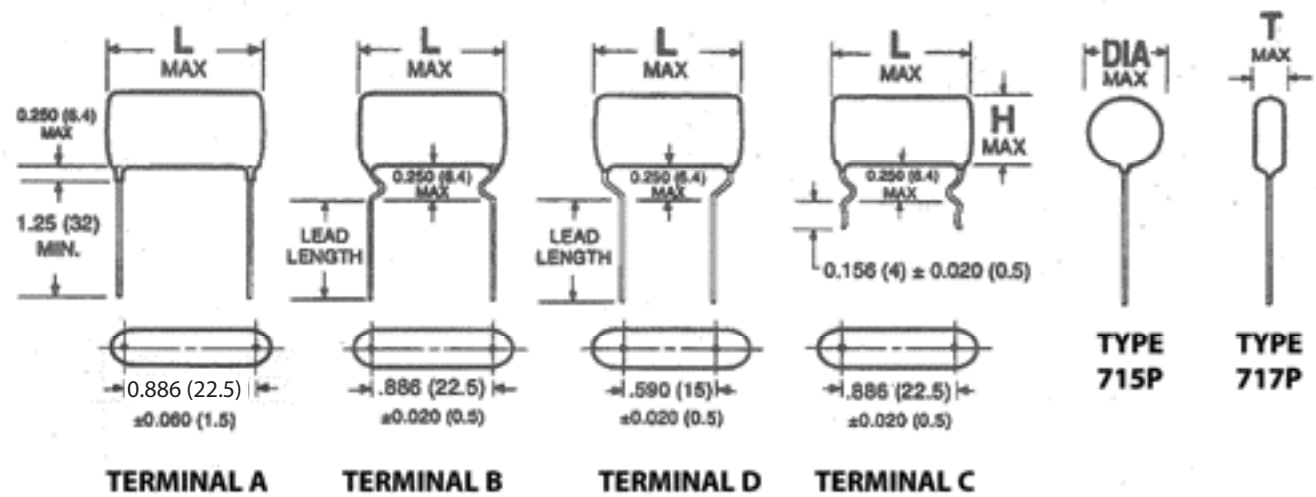
# Type 715P/717P, Orange Drop®, High Voltage, Polypropylene Film/Foil

## 800 Vac Performance Characteristics

### RMS Voltage vs. Frequency @ +85 °C



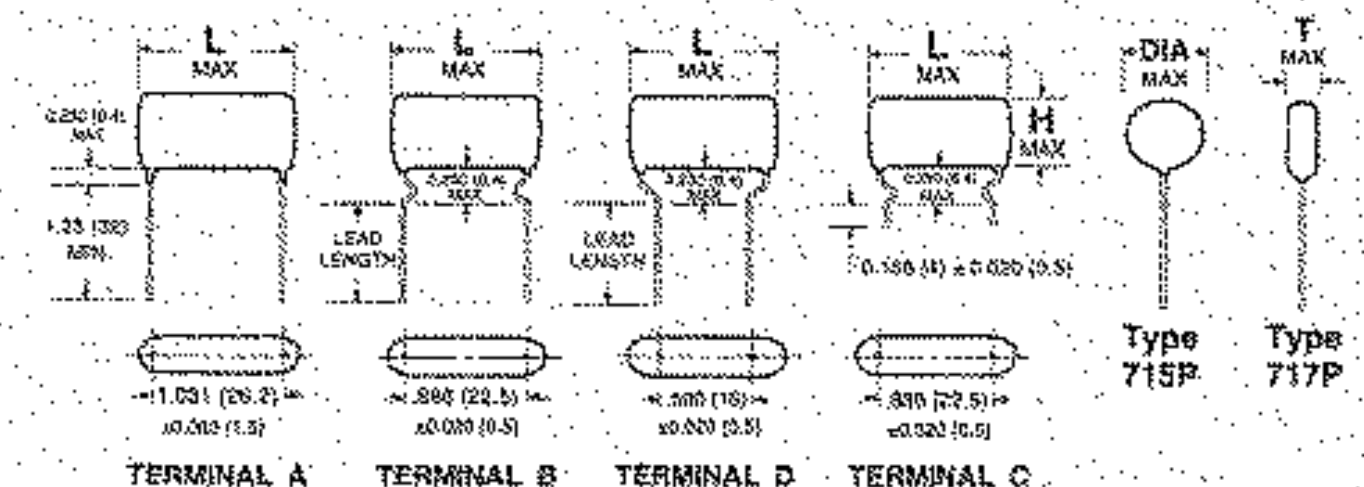
**Type 715P/717P, Orange Drop®, High Voltage, Polypropylene Film/Foil**  
**Standard Lead Styles/Lead Spacing 800 Vac**



**Standard Marking Format**

| Sample Marking on unit     | Description |                                         | Tolerance codes per EIA standards |      |
|----------------------------|-------------|-----------------------------------------|-----------------------------------|------|
| CDE715P800VAC<br>222J 9810 | CDE         | CDE Electronics identification          | F                                 | ±1%  |
|                            | 715P        | Type number                             | G                                 | ±2%  |
|                            | 800VAC      | AC Voltage rating, Volts                | H                                 | ±3%  |
|                            | 222J        | Capacitance and tolerance code          | J                                 | ±5%  |
|                            | 9810        | Weekly date code (i.e. 10th wk of 1998) | K                                 | ±10% |

**Standard Lead Styles/Lead Spacing 900 Vac**



**Standard Marking Format**

| Sample Marking on unit     | Description |                                         | Tolerance codes per EIA standards |      |
|----------------------------|-------------|-----------------------------------------|-----------------------------------|------|
| CDE715P900VAC<br>222J 9810 | CDE         | CDE Electronics identification          | F                                 | ±1%  |
|                            | 715P        | Type number                             | G                                 | ±2%  |
|                            | 900VAC      | AC Voltage rating, Volts                | H                                 | ±3%  |
|                            | 222J        | Capacitance and tolerance code          | J                                 | ±5%  |
|                            | 9810        | Weekly date code (i.e. 10th wk of 1998) | K                                 | ±10% |

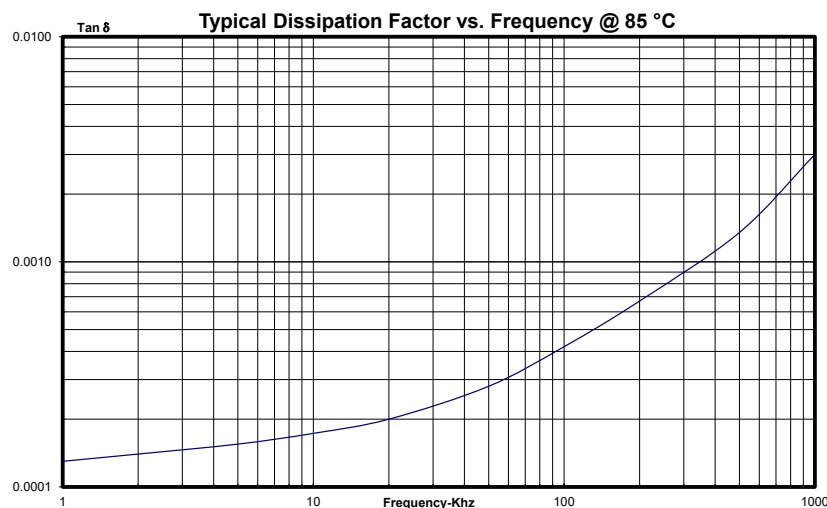
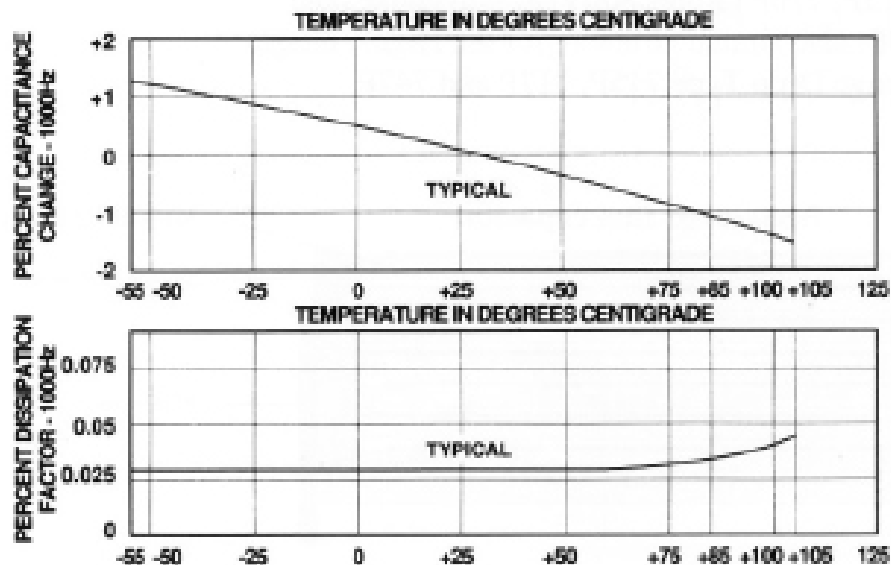
# Type 715P/717P, Orange Drop®, High Voltage, Polypropylene Film/Foil

## Ratings

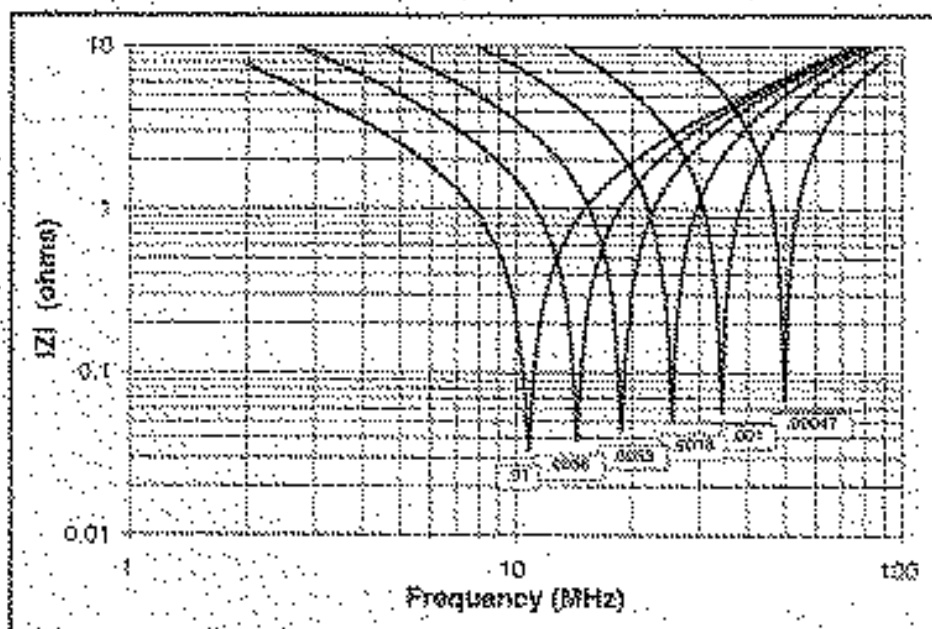
| Cap.<br>(μF)                              | Catalog<br>Part Number | L Max       | Dia Max    | H Max      | Seated<br>Height | Max dV/dt<br>(Volts/μsec) | Max % D.F. @ |         |
|-------------------------------------------|------------------------|-------------|------------|------------|------------------|---------------------------|--------------|---------|
|                                           |                        |             |            |            |                  |                           | 20 KHz       | 100 KHz |
| Type 715P, 900 Vac Standard Sizes/Ratings |                        |             |            |            |                  |                           |              |         |
| 0.00047                                   | 715P4715900L           | 1.25 (31.8) | .27 (6.9)  | .33 (8.4)  | .58 (14.8)       | 104000                    | 0.031        | 0.043   |
| 0.00056                                   | 715P5615900L           | 1.25 (31.8) | .28 (7.1)  | .34 (8.7)  | .59 (15.0)       | 95000                     | 0.031        | 0.043   |
| 0.00068                                   | 715P6815900L           | 1.25 (31.8) | .29 (7.4)  | .35 (8.9)  | .60 (15.3)       | 86000                     | 0.031        | 0.043   |
| 0.00082                                   | 715P8215900L           | 1.25 (31.8) | .31 (7.9)  | .36 (9.2)  | .61 (15.5)       | 78000                     | 0.031        | 0.043   |
| 0.001                                     | 715P1025900L           | 1.25 (31.8) | .31 (7.9)  | .37 (9.4)  | .62 (15.8)       | 71000                     | 0.031        | 0.043   |
| 0.0012                                    | 715P1225900L           | 1.25 (31.8) | .33 (8.4)  | .38 (9.7)  | .63 (16.0)       | 65000                     | 0.031        | 0.043   |
| 0.0015                                    | 715P1525900L           | 1.25 (31.8) | .35 (8.9)  | .40 (10.2) | .65 (16.5)       | 58000                     | 0.031        | 0.044   |
| 0.0018                                    | 715P1825900L           | 1.25 (31.8) | .37 (9.4)  | .42 (10.7) | .67 (17.0)       | 53000                     | 0.031        | 0.044   |
| 0.0022                                    | 715P2225900L           | 1.25 (31.8) | .39 (9.9)  | .45 (11.4) | .69 (17.5)       | 48000                     | 0.031        | 0.044   |
| 0.0027                                    | 715P2725900L           | 1.25 (31.8) | .42 (10.7) | .47 (11.9) | .70 (17.8)       | 43000                     | 0.031        | 0.044   |
| 0.0033                                    | 715P3325900L           | 1.25 (31.8) | .45 (11.4) | .50 (12.7) | .72 (18.3)       | 39000                     | 0.031        | 0.046   |
| 0.0039                                    | 715P3925900L           | 1.25 (31.8) | .47 (11.9) | .53 (13.5) | .75 (19.1)       | 36000                     | 0.031        | 0.046   |
| 0.0047                                    | 715P4725900L           | 1.25 (31.8) | .51 (13.0) | .56 (14.2) | .81 (20.6)       | 33000                     | 0.031        | 0.047   |
| 0.0056                                    | 715P5625900L           | 1.25 (31.8) | .54 (13.7) | .60 (15.3) | .85 (21.6)       | 30000                     | 0.031        | 0.048   |
| 0.0068                                    | 715P6825900L           | 1.25 (31.8) | .58 (14.7) | .64 (16.3) | .89 (22.6)       | 27000                     | 0.031        | 0.049   |
| 0.0082                                    | 715P8225900L           | 1.25 (31.8) | .63 (16.0) | .69 (17.5) | .93 (23.6)       | 25000                     | 0.032        | 0.051   |
| 0.01                                      | 715P1035900L           | 1.25 (31.8) | .68 (17.3) | .73 (18.5) | .98 (24.9)       | 23000                     | 0.032        | 0.053   |
| Type 717P, 900 Vac Standard Sizes/Ratings |                        |             |            |            |                  |                           |              |         |
| 0.00047                                   | 717P4715900L           | 1.25 (31.8) | .20 (5.1)  | .37 (9.4)  | .62 (15.8)       | 104000                    | 0.031        | 0.043   |
| 0.00056                                   | 717P5615900L           | 1.25 (31.8) | .21 (5.4)  | .38 (9.7)  | .63 (16.0)       | 95000                     | 0.031        | 0.043   |
| 0.00068                                   | 717P6815900L           | 1.25 (31.8) | .23 (5.9)  | .39 (9.9)  | .64 (16.3)       | 86000                     | 0.031        | 0.043   |
| 0.00082                                   | 717P8215900L           | 1.25 (31.8) | .23 (5.9)  | .40 (10.2) | .65 (16.5)       | 78000                     | 0.031        | 0.043   |
| 0.001                                     | 717P1025900L           | 1.25 (31.8) | .23 (5.9)  | .43 (10.9) | .68 (17.3)       | 71000                     | 0.031        | 0.043   |
| 0.0012                                    | 717P1225900L           | 1.25 (31.8) | .25 (6.4)  | .44 (11.2) | .69 (17.5)       | 65000                     | 0.031        | 0.043   |
| 0.0015                                    | 717P1525900L           | 1.25 (31.8) | .27 (6.9)  | .47 (11.9) | .72 (18.3)       | 58000                     | 0.031        | 0.044   |
| 0.0018                                    | 717P1825900L           | 1.25 (31.8) | .27 (6.9)  | .52 (13.2) | .77 (19.6)       | 53000                     | 0.031        | 0.044   |
| 0.0022                                    | 717P2225900L           | 1.25 (31.8) | .30 (7.6)  | .54 (13.7) | .79 (20.1)       | 48000                     | 0.031        | 0.044   |
| 0.0027                                    | 717P2725900L           | 1.25 (31.8) | .32 (7.6)  | .57 (14.5) | .82 (20.8)       | 43000                     | 0.031        | 0.044   |
| 0.0033                                    | 717P3325900L           | 1.25 (31.8) | .33 (8.4)  | .63 (16.0) | .88 (22.4)       | 39000                     | 0.031        | 0.046   |
| 0.0039                                    | 717P3925900L           | 1.25 (31.8) | .36 (9.2)  | .66 (16.8) | .91 (23.1)       | 36000                     | 0.031        | 0.046   |
| 0.0047                                    | 717P4725900L           | 1.25 (31.8) | .39 (9.9)  | .69 (17.5) | .94 (23.9)       | 33000                     | 0.031        | 0.047   |
| 0.0056                                    | 717P5625900L           | 1.25 (31.8) | .43 (10.9) | .73 (18.5) | .98 (24.9)       | 30000                     | 0.031        | 0.048   |
| 0.0068                                    | 717P6825900L           | 1.25 (31.8) | .47 (11.9) | .78 (19.8) | 1.03 (26.2)      | 27000                     | 0.031        | 0.049   |
| 0.0082                                    | 717P8225900L           | 1.25 (31.8) | .49 (12.5) | .85 (23.1) | 1.10 (27.9)      | 25000                     | 0.032        | 0.051   |
| 0.01                                      | 717P1035900L           | 1.25 (31.8) | .54 (13.7) | .91 (23.1) | 1.16 (29.5)      | 23000                     | 0.032        | 0.053   |

# Type 715P/717P, Orange Drop®, High Voltage, Polypropylene Film/Foil

## 900 Vac Performance Characteristics



### Typical Impedance vs. Frequency



# Type 715P/717P, Orange Drop®, High Voltage, Polypropylene Film/Foil

## 900 Vac Performance Characteristics

RMS Voltage vs. Frequency @ 85 °C

