

## Aluminum Capacitors +125 °C, Non-Polar, Miniature



### FEATURES

- Extended temperature range
- Exceptional capacitance stability
- Low DF
- Low DC leakage current
- Tantalum foil replacement
- Axial lead
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

| QUICK REFERENCE DATA                        |  |
|---|--|
| DESCRIPTION                                 | VALUE  |
| Nominal case size<br>Ø D x L in inches [mm] | 0.296 x 1.000 [7.518 x 25.40]<br>to 0.390 x 2.812 [9.906 x 71.425]   |
| Operating temperature                       | -55 °C to +125 °C  |
| Rated capacitance range, C <sub>R</sub>     | 0.68 µF to 680 µF  |
| Tolerance on C <sub>R</sub>                 | -10 %, +50 %; -10 %, +75 %   |
| Rated voltage range, U <sub>R</sub>         | 7 WV <sub>DC</sub> to 250 WV <sub>DC</sub>   |
| Termination                                 | Axial leads  |
| Life validation test<br>2000 h at +125 °C   | ΔCAP < 15 % from initial measurement<br>ΔESR < 1.3 x initial specified limit<br>ΔDCL < initial specified limit       |
| Shelf life<br>500 h at +125 °C              | ΔCAP < 10 % from initial measurement<br>ΔESR < 1.2 x initial specified limit<br>ΔDCL < 2.0 x initial specified limit |

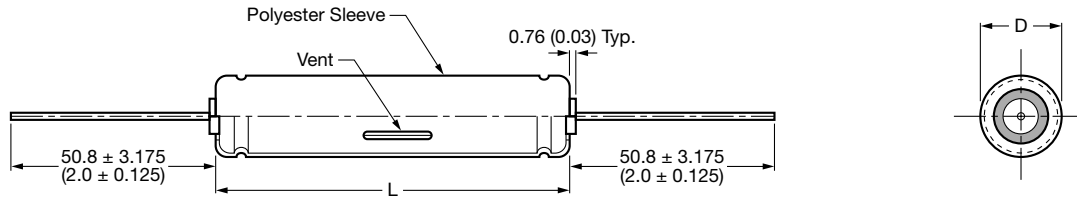
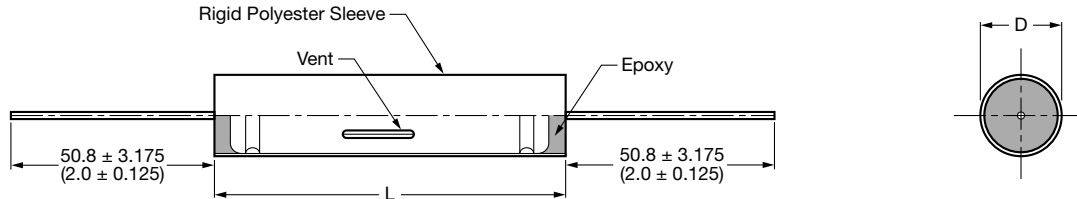
| RIPPLE CURRENT MULTIPLIERS |          |            |             |        |
|----------------------------|----------|------------|-------------|--------|
| TEMPERATURE                |          |            |             |        |
| AMBIENT TEMPERATURE        |          |            | MULTIPLIERS |        |
| +100 °C                    |          |            | 1.5         |        |
| +85 °C                     |          |            | 2.0         |        |
| +65 °C                     |          |            | 2.5         |        |
| FREQUENCY (Hz)             |          |            |             |        |
| WV <sub>DC</sub>           | 50 TO 60 | 100 TO 120 | 300 TO 400  | > 100K |
| 6 to 60                    | 0.85     | 1.0        | 1.10        | 1.15   |
| 61 to 250                  | 0.83     | 1.0        | 1.15        | 1.20   |

| LOW TEMPERATURE PERFORMANCE  |                                  |        |         |
|--|----------------------------------|--------|---------|
| <b>CAPACITANCE:</b> The maximum allowable capacitance change with temperature from +25 °C shall be in accordance with the following: |                                  |        |         |
| RATED VOLTAGE<br>AT +125 °C  | PERCENT CAPACITANCE<br>CHANGE AT |        |         |
|  | -55 °C                           | +85 °C | +125 °C |
| 5 to 15  | -30                              | +15    | +20     |
| 20 and up  | -25                              | +15    | +20     |

| DIMENSIONS in inches [millimeters] |                             |                              |                    |
|------------------------------------|-----------------------------|------------------------------|--------------------|
| CASE CODE                          | WITH OUTER INSULATION       |                              |                    |
|                                    | DIAMETER                    | LENGTH <sup>(1)</sup> (max.) | TYPICAL WEIGHT (g) |
| KD                                 | 0.297 ± 0.031 [7.54 ± 0.79] | 1.000 [25.40]                | 1.90               |
| DE                                 | 0.390 ± 0.031 [9.92 ± 0.79] | 1.187 [30.16]                | 3.90               |
| DU                                 | 0.390 ± 0.031 [9.92 ± 0.79] | 1.500 [38.10]                | 4.90               |
| DL                                 | 0.390 ± 0.031 [9.92 ± 0.79] | 2.187 [55.56]                | 7.00               |
| DR                                 | 0.390 ± 0.031 [9.92 ± 0.79] | 2.812 [71.42]                | 8.60               |

**Note**

<sup>(1)</sup> Style 2. For style 5, increase the maximum length by 0.125" [3.18 mm].

**DIMENSIONS AND AVAILABLE FORMS**
**Style 2**

**Style 5**


Lead diameter  
No. 20 AWG (0.032" [0.813 mm] Dia.)

**PART NUMBER INFORMATION**

| 610D<br>TYPE                | 476<br>CAPACITANCE   | F<br>CAPACITANCE TOLERANCE             | 007<br>DC VOLTAGE RATING   | KD<br>CASE CODE      | 2<br>CASE STYLE  |
|-----------------------------|--|--|--|----------------------|--|
| Identifies the series name. | Expressed in pF. The first two digits are significant figures. The third is the number of zeros. | F = -10 % / +50 %<br>G = -10 % / +75 % | Expressed in volts. Zeros are used to precede the voltage rating (i.e. 007 = 7 V). | See table Dimensions | 2 = polyester sleeve (std.)<br>5 = polyester sleeve with resin end seal (required for exposure to halogenated cleaning solvents) |

**Note**

- For lead (Pb)-free / RoHS compliant products add suffix "E3" to part number.  
Example: 610D105F200KD2E3

Statements about product lifetime are based on calculations and internal testing. They should only be interpreted as estimations. Also due to external factors, the lifetime in the field application may deviate from the calculated lifetime. In general, nothing stated herein shall be construed as a guarantee of durability.



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