

# Type WMC Polyester Film/Foil Capacitors

## Axial Lead, Miniature Size for Automatic Insertion



Type WMC axial-lead polyester film/foil capacitors are ideal for automatic insertion in printed circuit boards. It is an ultraminiature version of Type WMF and the sections of these non-inductive capacitors are constructed with extended foil, polyester film, with tinned copper-clad steel leads.

### Highlights

- Miniature Size
- Available on tape and reel
- Film/foil construction, non-inductive design
- High dV/dt ratings
- Good for high pulse applications

### Specifications



Complies with the EU Directive 2002/95/EC requirement restricting the use of Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent chromium (Cr(VI)), PolyBrominated Biphenyls (PBB) and PolyBrominated Diphenyl Ethers (PBDE).

|                               |  |
|-------------------------------|--|
| <b>Capacitance Range:</b>     | .001 $\mu$ F to .47 $\mu$ F  |
| <b>Voltage Range:</b>         | 80 to 400 Vdc  |
| <b>Capacitance Tolerance:</b> | $\pm$ 10% standard, $\pm$ 5% optional  |
| <b>Temperature Range:</b>     | -55 to +125 $^{\circ}$ C<br><small>(Full-rated voltage at 85 <math>^{\circ}</math>C--Derate linearly to 50%-rated voltage at 125 <math>^{\circ}</math>C)</small> |
| <b>Dielectric Strength:</b>   | 250% of rated voltage for 1 minute   |
| <b>Dissipation Factor:</b>    | .75% Max. (25 $^{\circ}$ C, 1 kHz)   |
| <b>Insulation Resistance:</b> | 30,000 M $\Omega$ x $\mu$ F, 100,000 M $\Omega$ Min.   |
| <b>Life Test:</b>             | 250 hours at 85 $^{\circ}$ C at 125% rated voltage   |

### Outline Drawing



#### Lead Diameters:

No. 24 AWG to .282" (6.35mm) diameter  
No. 22 AWG .283" (6.38mm) diameter and up

NOTE: Other capacitance values, sizes and performance specifications are available. Contact us.

### Pulse Ratings

| Pulse Capability                       |             |           |           |       |       |
|--|-------------|-----------|-----------|-------|-------|
| Rated Voltage                          | Body Length |           |           |       |       |
|  | $\leq .437$ | .531-.593 | .656-.718 | 0.906 | 1.218 |
| dV/dt — volts per microsecond, maximum |             |           |           |       |       |
| 80                                     | 5000        | 2100      | 1500      | 900   | 690   |
| 200                                    | 10800       | 5000      | 3000      | 1700  | 1260  |
| 400                                    | 30700       | 14500     | 9600      | 3600  | 2600  |

### Ratings

| Cap ( $\mu$ F) | Catalog Part Number | D Inches (mm) | L Inches (mm) | d Inches (mm) |
|----------------|---------------------|---------------|---------------|---------------|
| <b>80 Vdc</b>  |                     |               |               |               |
| 0.0010         | WMC08D1K-F          | .185 (4.7)    | .406 (10.3)   | .020 (.5)     |
| 0.0012         | WMC08D12K-F         | .185 (4.7)    | .406 (10.3)   | .020 (.5)     |
| 0.0015         | WMC08D15K-F         | .185 (4.7)    | .406 (10.3)   | .020 (.5)     |
| 0.0018         | WMC08D18K-F         | .185 (4.7)    | .406 (10.3)   | .020 (.5)     |
| 0.0022         | WMC08D22K-F         | .185 (4.7)    | .406 (10.3)   | .020 (.5)     |
| 0.0027         | WMC08D27K-F         | .185 (4.7)    | .406 (10.3)   | .020 (.5)     |

| Cap ( $\mu$ F) | Catalog Part Number | D Inches (mm) | L Inches (mm) | d Inches (mm) |
|----------------|---------------------|---------------|---------------|---------------|
| <b>80 Vdc</b>  |                     |               |               |               |
| 0.0033         | WMC08D33K-F         | .185 (4.7)    | .406 (10.3)   | .020 (.5)     |
| 0.0039         | WMC08D39K-F         | .185 (4.7)    | .406 (10.3)   | .020 (.5)     |
| 0.0047         | WMC08D47K-F         | .185 (4.7)    | .406 (10.3)   | .020 (.5)     |
| 0.0056         | WMC08D56K-F         | .185 (4.7)    | .406 (10.3)   | .020 (.5)     |
| 0.0068         | WMC08D68K-F         | .185 (4.7)    | .406 (10.3)   | .020 (.5)     |
| 0.0082         | WMC08D82K-F         | .185 (4.7)    | .406 (10.3)   | .020 (.5)     |

# Type WMC Polyester Film/Foil Capacitors

| Cap<br>( $\mu$ F)  | Catalog<br>Part Number | D<br>Inches (mm) | L<br>Inches (mm) | d<br>Inches (mm) |
|--------------------|------------------------|------------------|------------------|------------------|
| <b>80 Vdc</b>      |                        |                  |                  |                  |
| 0.010              | WMC08S1K-F             | .185 (4.7)       | .406 (10.3)      | .020 (.5)        |
| 0.012              | WMC08S12K-F            | .185 (4.7)       | .468 (11.9)      | .020 (.5)        |
| 0.015              | WMC08S15K-F            | .185 (4.7)       | .468 (11.9)      | .020 (.5)        |
| 0.018              | WMC08S18K-F            | .185 (4.7)       | .531 (13.5)      | .020 (.5)        |
| 0.022              | WMC08S22K-F            | .185 (4.7)       | .531 (13.5)      | .020 (.5)        |
| 0.027              | WMC08S27K-F            | .229 (5.8)       | .468 (11.9)      | .020 (.5)        |
| 0.033              | WMC08S33K-F            | .229 (5.8)       | .468 (11.9)      | .020 (.5)        |
| 0.039              | WMC08S39K-F            | .229 (5.8)       | .593 (15.1)      | .020 (.5)        |
| 0.047              | WMC08S47K-F            | .229 (5.8)       | .593 (15.1)      | .020 (.5)        |
| 0.056              | WMC08S56K-F            | .250 (6.3)       | .593 (15.1)      | .020 (.5)        |
| 0.068              | WMC08S68K-F            | .250 (6.3)       | .593 (15.1)      | .020 (.5)        |
| 0.082              | WMC08S82K-F            | .343 (8.7)       | .531 (13.5)      | .024 (.6)        |
| 0.10               | WMC08P1K-F             | .343 (8.7)       | .531 (13.5)      | .024 (.6)        |
| 0.12               | WMC08P12K-F            | .343 (8.7)       | .656 (16.7)      | .024 (.6)        |
| 0.15               | WMC08P15K-F            | .343 (8.7)       | .656 (16.7)      | .024 (.6)        |
| 0.18               | WMC08P18K-F            | .382 (9.7)       | .656 (16.7)      | .024 (.6)        |
| 0.22               | WMC08P22K-F            | .382 (9.7)       | .656 (16.7)      | .024 (.6)        |
| 0.27               | WMC08P27K-F            | .382 (9.7)       | .905 (23.0)      | .024 (.6)        |
| 0.33               | WMC08P33K-F            | .382 (9.7)       | .905 (23.0)      | .024 (.6)        |
| 0.39               | WMC08P39K-F            | .382 (9.7)       | 1.218 (30.9)     | .024 (.6)        |
| 0.47               | WMC08P47K-F            | .382 (9.7)       | 1.218 (30.9)     | .024 (.6)        |
| <b>200/250 Vdc</b> |                        |                  |                  |                  |
| 0.0010             | WMC2D1K-F              | .185 (4.7)       | .406 (10.3)      | .020 (.5)        |
| 0.0012             | WMC2D12K-F             | .185 (4.7)       | .406 (10.3)      | .020 (.5)        |
| 0.0015             | WMC2D15K-F             | .185 (4.7)       | .406 (10.3)      | .020 (.5)        |
| 0.0018             | WMC2D18K-F             | .185 (4.7)       | .406 (10.3)      | .020 (.5)        |
| 0.0022             | WMC2D22K-F             | .185 (4.7)       | .406 (10.3)      | .020 (.5)        |
| 0.0027             | WMC2D27K-F             | .185 (4.7)       | .406 (10.3)      | .020 (.5)        |
| 0.0033             | WMC2D33K-F             | .185 (4.7)       | .468 (11.9)      | .020 (.5)        |
| 0.0039             | WMC2D39K-F             | .185 (4.7)       | .468 (11.9)      | .020 (.5)        |
| 0.0047             | WMC2D47K-F             | .185 (4.7)       | .468 (11.9)      | .020 (.5)        |
| 0.0056             | WMC2D56K-F             | .185 (4.7)       | .468 (11.9)      | .020 (.5)        |
| 0.0068             | WMC2D68K-F             | .185 (4.7)       | .468 (11.9)      | .020 (.5)        |
| 0.0082             | WMC2D82K-F             | .185 (4.7)       | .531 (13.5)      | .020 (.5)        |
| 0.010              | WMC2S1K-F              | .185 (4.7)       | .531 (13.5)      | .020 (.5)        |
| 0.012              | WMC2S12K-F             | .229 (5.8)       | .468 (11.9)      | .020 (.5)        |
| 0.015              | WMC2S15K-F             | .229 (5.8)       | .468 (11.9)      | .020 (.5)        |
| 0.018              | WMC2S18K-F             | .229 (5.8)       | .656 (16.7)      | .020 (.5)        |

| Cap<br>( $\mu$ F)  | Catalog<br>Part Number | D<br>Inches (mm) | L<br>Inches (mm) | d<br>Inches (mm) |
|--------------------|------------------------|------------------|------------------|------------------|
| <b>200/250 Vdc</b> |                        |                  |                  |                  |
| 0.022              | WMC2S22K-F             | .229 (5.8)       | .656 (16.7)      | .020 (.5)        |
| 0.027              | WMC2S27K-F             | .250 (6.3)       | .656 (16.7)      | .020 (.5)        |
| 0.033              | WMC2S33K-F             | .250 (6.3)       | .656 (16.7)      | .020 (.5)        |
| 0.039              | WMC2S39K-F             | .343 (8.7)       | .531 (13.5)      | .024 (.6)        |
| 0.047              | WMC2S47K-F             | .343 (8.7)       | .531 (13.5)      | .024 (.6)        |
| 0.056              | WMC2S56K-F             | .343 (8.7)       | .656 (16.7)      | .024 (.6)        |
| 0.068              | WMC2S68K-F             | .343 (8.7)       | .656 (16.7)      | .024 (.6)        |
| 0.082              | WMC2S82K-F             | .382 (9.7)       | .656 (16.7)      | .024 (.6)        |
| 0.10               | WMC2P1K-F              | .382 (9.7)       | .656 (16.7)      | .024 (.6)        |
| 0.12               | WMC2P12K-F             | .382 (9.7)       | .906 (23.0)      | .024 (.6)        |
| 0.15               | WMC2P15K-F             | .382 (9.7)       | .906 (23.0)      | .024 (.6)        |
| 0.18               | WMC2P18K-F             | .382 (9.7)       | 1.218 (30.9)     | .024 (.6)        |
| 0.22               | WMC2P22K-F             | .382 (9.7)       | 1.218 (30.9)     | .024 (.6)        |
| <b>400 Vdc</b>     |                        |                  |                  |                  |
| 0.0010             | WMC4D1K-F              | .185 (4.7)       | .468 (11.9)      | .020 (.5)        |
| 0.0012             | WMC4D12K-F             | .185 (4.7)       | .468 (11.9)      | .020 (.5)        |
| 0.0015             | WMC4D15K-F             | .185 (4.7)       | .468 (11.9)      | .020 (.5)        |
| 0.0018             | WMC4D18K-F             | .185 (4.7)       | .531 (13.5)      | .020 (.5)        |
| 0.0022             | WMC4D22K-F             | .185 (4.7)       | .531 (13.5)      | .020 (.5)        |
| 0.0027             | WMC4D27K-F             | .229 (5.8)       | .531 (13.5)      | .020 (.5)        |
| 0.0033             | WMC4D33K-F             | .229 (5.8)       | .531 (13.5)      | .020 (.5)        |
| 0.0039             | WMC4D39K-F             | .229 (5.8)       | .531 (13.5)      | .020 (.5)        |
| 0.0047             | WMC4D47K-F             | .229 (5.8)       | .531 (13.5)      | .020 (.5)        |
| 0.0056             | WMC4D56K-F             | .250 (6.3)       | .656 (16.7)      | .020 (.5)        |
| 0.0068             | WMC4D68K-F             | .250 (6.3)       | .656 (16.7)      | .020 (.5)        |
| 0.0082             | WMC4D82K-F             | .250 (6.3)       | .656 (16.7)      | .020 (.5)        |
| 0.010              | WMC4S1K-F              | .250 (6.3)       | .656 (16.7)      | .020 (.5)        |
| 0.012              | WMC4S12K-F             | .343 (8.7)       | .593 (15.1)      | .024 (.6)        |
| 0.015              | WMC4S15K-F             | .343 (8.7)       | .593 (15.1)      | .024 (.6)        |
| 0.018              | WMC4S18K-F             | .343 (8.7)       | .718 (18.2)      | .024 (.6)        |
| 0.022              | WMC4S22K-F             | .343 (8.7)       | .718 (18.2)      | .024 (.6)        |
| 0.027              | WMC4S27K-F             | .382 (9.7)       | .718 (18.2)      | .024 (.6)        |
| 0.033              | WMC4S33K-F             | .382 (9.7)       | .718 (18.2)      | .024 (.6)        |
| 0.039              | WMC4S39K-F             | .382 (9.7)       | .906 (23.0)      | .024 (.6)        |
| 0.047              | WMC4S47K-F             | .382 (9.7)       | .906 (23.0)      | .024 (.6)        |
| 0.056              | WMC4S56K-F             | .382 (9.7)       | 1.218 (30.9)     | .024 (.6)        |
| 0.068              | WMC4S68K-F             | .382 (9.7)       | 1.218 (30.9)     | .024 (.6)        |

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