

# Type MMWA, Polyester Film Capacitors

## Metallized Axial Leads



## High Capacitance, High Voltage

Type MMWA axial-leaded, metallized polyester film capacitors incorporate compact, non-inductive extended windings with epoxy end seals to offer excellent moisture resistance and capacitance stability over the operating temperature range. Metallized polyester provides self-healing characteristics that help prevent permanent shorting due to high voltage transients.

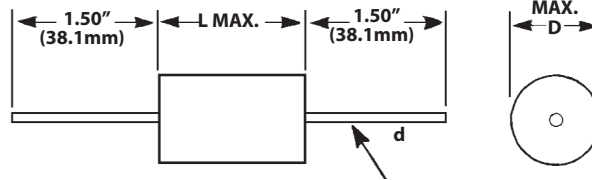
## Specifications

**Voltage Range:** 50-1,000 Vdc  
**Capacitance Range:** .01-10  $\mu$ F  
**Capacitance Tolerance:**  $\pm 10\%$  (K) standard  
 $\pm 5\%$  (J) optional

**Operating Temperature Range:** -55°C to 125°C\*  
 \*Full-rated voltage at 85°C—Derate linearly to 50%-rated voltage at 125°C

**Dielectric Strength:** 200% (1 minute)  
**Dissipation Factor:** .75% Max. (25°C, 1 kHz)  
**Insulation Resistance:** 10,000 M $\Omega$  x  $\mu$ F  
 30,000 M $\Omega$  Min.

**Life Test:** 1000 Hours at 85°C at 125% Rated Voltage



TINNED COPPER-CLAD STEEL LEADS

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



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).

## Ratings and Dimensions

## Normally Stocked

| Cap. ( $\mu$ F) | Catalog Part Number | D Inches (mm) | L Inches (mm) | d Inches (mm) | dV/dt V/ $\mu$ s |
|-----------------|---------------------|---------------|---------------|---------------|------------------|
| <b>50 Vdc</b>   |                     |               |               |               |                  |
| 0.100           | MMWA05P1K-F         | 0.220 (5.6)   | 0.562 (14.3)  | 0.020 (0.5)   | 36               |
| 0.150           | MMWA05P15K-F        | 0.210 (5.3)   | 0.687 (17.4)  | 0.020 (0.5)   | 20               |
| 0.220           | MMWA05P22K-F        | 0.240 (6.1)   | 0.687 (17.4)  | 0.020 (0.5)   | 20               |
| 0.330           | MMWA05P33K-F        | 0.280 (7.1)   | 0.687 (17.4)  | 0.024 (0.6)   | 20               |
| 0.470           | MMWA05P47K-F        | 0.320 (8.1)   | 0.687 (17.4)  | 0.024 (0.6)   | 20               |
| 0.680           | MMWA05P68K-F        | 0.290 (7.4)   | 1.000 (25.4)  | 0.024 (0.6)   | 9                |
| 1.000           | MMWA05W1K-F         | 0.335 (8.5)   | 1.000 (25.4)  | 0.024 (0.6)   | 9                |
| 1.500           | MMWA05W1P5K-F       | 0.355 (9.0)   | 1.250 (31.7)  | 0.024 (0.6)   | 9                |
| 2.000           | MMWA05W2K-F         | 0.400 (10.2)  | 1.250 (31.7)  | 0.024 (0.6)   | 9                |
| 3.000           | MMWA05W3K-F         | 0.475 (12.1)  | 1.250 (31.7)  | 0.024 (0.6)   | 9                |
| 4.000           | MMWA05W4K-F         | 0.505 (12.8)  | 1.375 (34.9)  | 0.024 (0.6)   | 5                |
| 5.000           | MMWA05W5K-F         | 0.525 (13.3)  | 1.500 (38.1)  | 0.024 (0.6)   | 4                |
| 6.000           | MMWA05W6K-F         | 0.585 (14.9)  | 1.500 (38.1)  | 0.032 (0.8)   | 4                |
| 7.000           | MMWA05W7K-F         | 0.625 (15.9)  | 1.500 (38.1)  | 0.032 (0.8)   | 4                |
| 8.000           | MMWA05W8K-F         | 0.669 (17.0)  | 1.500 (38.1)  | 0.040 (1.0)   | 4                |
| 9.000           | MMWA05W9K-F         | 0.700 (17.8)  | 1.500 (38.1)  | 0.040 (1.0)   | 4                |
| 10.000          | MMWA05W10K-F        | 0.670 (17.0)  | 1.750 (44.4)  | 0.040 (1.0)   | 4                |

| Cap. ( $\mu$ F) | Catalog Part Number | D Inches (mm) | L Inches (mm) | d Inches (mm) | dV/dt V/ $\mu$ s |
|-----------------|---------------------|---------------|---------------|---------------|------------------|
| <b>100 Vdc</b>  |                     |               |               |               |                  |
| 0.010           | MMWA1S1K-F          | 0.197 (5.0)   | 0.562 (14.3)  | 0.020 (0.5)   | 36               |
| 0.015           | MMWA1S15K-F         | 0.197 (5.0)   | 0.562 (14.3)  | 0.020 (0.5)   | 36               |
| 0.022           | MMWA1S22K-F         | 0.197 (5.0)   | 0.562 (14.3)  | 0.020 (0.5)   | 36               |
| 0.033           | MMWA1S33K-F         | 0.197 (5.0)   | 0.562 (14.3)  | 0.020 (0.5)   | 36               |
| 0.047           | MMWA1S47K-F         | 0.217 (5.5)   | 0.562 (14.3)  | 0.020 (0.5)   | 36               |
| 0.068           | MMWA1S68K-F         | 0.217 (5.5)   | 0.562 (14.3)  | 0.020 (0.5)   | 36               |
| 0.100           | MMWA1P1K-F          | 0.236 (6.0)   | 0.562 (14.3)  | 0.020 (0.5)   | 36               |
| 0.150           | MMWA1P15K-F         | 0.236 (6.0)   | 0.687 (17.4)  | 0.020 (0.5)   | 20               |
| 0.220           | MMWA1P22K-F         | 0.256 (6.5)   | 0.687 (17.4)  | 0.020 (0.5)   | 20               |
| 0.330           | MMWA1P33K-F         | 0.295 (7.5)   | 0.687 (17.4)  | 0.024 (0.6)   | 20               |
| 0.470           | MMWA1P47K-F         | 0.320 (8.1)   | 0.687 (17.4)  | 0.024 (0.6)   | 20               |
| 0.680           | MMWA1P68K-F         | 0.320 (8.1)   | 1.000 (25.4)  | 0.024 (0.6)   | 9                |
| 1.000           | MMWA1W1K-F          | 0.374 (9.5)   | 1.000 (25.4)  | 0.024 (0.6)   | 9                |
| 1.500           | MMWA1W1P5K-F        | 0.374 (9.5)   | 1.250 (31.7)  | 0.024 (0.6)   | 9                |
| 2.000           | MMWA1W2K-F          | 0.400 (10.2)  | 1.250 (31.7)  | 0.024 (0.6)   | 9                |
| 3.000           | MMWA1W3K-F          | 0.475 (12.1)  | 1.250 (31.7)  | 0.024 (0.6)   | 9                |
| 4.000           | MMWA1W4K-F          | 0.505 (12.8)  | 1.375 (34.9)  | 0.032 (0.8)   | 5                |

# Type MMWA, Polyester Film Capacitors

| Cap.<br>( $\mu$ F) | Catalog<br>Part Number | D<br>Inches (mm) | L<br>Inches (mm) | d<br>Inches (mm) | dV/dt<br>V/ $\mu$ s |
|--------------------|------------------------|------------------|------------------|------------------|---------------------|
| 5.000              | MMWA1W5K-F             | 0.525 (13.3)     | 1.500 (38.1)     | 0.032 (0.8)      | 4                   |
| 6.000              | MMWA1W6K-F             | 0.585 (14.9)     | 1.500 (38.1)     | 0.032 (0.8)      | 4                   |
| 7.000              | MMWA1W7K-F             | 0.625 (15.9)     | 1.500 (38.1)     | 0.032 (0.8)      | 4                   |
| 8.000              | MMWA1W8K-F             | 0.669 (17.0)     | 1.500 (38.1)     | 0.040 (1.0)      | 4                   |
| 9.000              | MMWA1W9K-F             | 0.700 (17.8)     | 1.500 (38.1)     | 0.040 (1.0)      | 4                   |
| 10.000             | MMWA1W10K-F            | 0.768 (19.5)     | 1.750 (44.4)     | 0.040 (1.0)      | 3                   |
| <b>200/250 Vdc</b> |                        |                  |                  |                  |                     |
| 0.010              | MMWA2S1K-F             | 0.197 (5.0)      | 0.562 (14.3)     | 0.020 (0.5)      | 52                  |
| 0.015              | MMWA2S15K-F            | 0.197 (5.0)      | 0.562 (14.3)     | 0.020 (0.5)      | 52                  |
| 0.022              | MMWA2S22K-F            | 0.197 (5.0)      | 0.562 (14.3)     | 0.020 (0.5)      | 52                  |
| 0.033              | MMWA2S33K-F            | 0.197 (5.0)      | 0.562 (14.3)     | 0.020 (0.5)      | 52                  |
| 0.047              | MMWA2S47K-F            | 0.217 (5.5)      | 0.562 (14.3)     | 0.020 (0.5)      | 52                  |
| 0.068              | MMWA2S68K-F            | 0.200 (5.1)      | 0.687 (17.4)     | 0.020 (0.5)      | 29                  |
| 0.100              | MMWA2P1K-F             | 0.240 (6.1)      | 0.687 (17.4)     | 0.020 (0.5)      | 29                  |
| 0.150              | MMWA2P15K-F            | 0.276 (7.0)      | 0.687 (17.4)     | 0.024 (0.6)      | 29                  |
| 0.220              | MMWA2P22K-F            | 0.310 (7.9)      | 0.687 (17.4)     | 0.024 (0.6)      | 29                  |
| 0.330              | MMWA2P33K-F            | 0.365 (9.3)      | 0.728 (18.5)     | 0.024 (0.6)      | 29                  |
| 0.470              | MMWA2P47K-F            | 0.374 (9.5)      | 1.000 (25.4)     | 0.024 (0.6)      | 14                  |
| 0.680              | MMWA2P68K-F            | 0.365 (9.3)      | 1.000 (25.4)     | 0.024 (0.6)      | 14                  |
| 1.000              | MMWA2W1K-F             | 0.430 (10.9)     | 1.062 (27.0)     | 0.024 (0.6)      | 14                  |
| 1.500              | MMWA2W1P5K-F           | 0.465 (11.8)     | 1.250 (31.7)     | 0.024 (0.6)      | 14                  |
| 2.000              | MMWA2W2K-F             | 0.525 (13.3)     | 1.250 (31.7)     | 0.032 (0.8)      | 14                  |
| 3.000              | MMWA2W3K-F             | 0.555 (14.1)     | 1.500 (38.1)     | 0.032 (0.8)      | 6                   |
| 3.500              | MMWA2W3P5K-F           | 0.610 (15.5)     | 1.500 (38.1)     | 0.032 (0.8)      | 6                   |
| 4.000              | MMWA2W4K-F             | 0.590 (15.0)     | 1.750 (44.4)     | 0.032 (0.8)      | 5                   |
| 5.000              | MMWA2W5K-F             | 0.669 (17.0)     | 1.750 (44.4)     | 0.040 (1.0)      | 5                   |
| 6.000              | MMWA2W6K-F             | 0.705 (17.9)     | 1.750 (44.4)     | 0.040 (1.0)      | 5                   |
| <b>400 Vdc</b>     |                        |                  |                  |                  |                     |
| 0.010              | MMWA4S1K-F             | 0.217 (5.5)      | 0.562 (14.3)     | 0.020 (0.5)      | 82                  |
| 0.015              | MMWA4S15K-F            | 0.217 (5.5)      | 0.562 (14.3)     | 0.020 (0.5)      | 82                  |
| 0.022              | MMWA4S22K-F            | 0.236 (6.0)      | 0.562 (14.3)     | 0.020 (0.5)      | 82                  |
| 0.033              | MMWA4S33K-F            | 0.220 (5.6)      | 0.687 (17.4)     | 0.020 (0.5)      | 46                  |
| 0.047              | MMWA4S47K-F            | 0.276 (7.0)      | 0.687 (17.4)     | 0.020 (0.5)      | 46                  |
| 0.068              | MMWA4S68K-F            | 0.280 (7.1)      | 0.687 (17.4)     | 0.024 (0.6)      | 46                  |
| 0.100              | MMWA4P1K-F             | 0.320 (8.1)      | 0.687 (17.4)     | 0.024 (0.6)      | 46                  |
| 0.150              | MMWA4P15K-F            | 0.290 (7.4)      | 1.000 (25.4)     | 0.024 (0.6)      | 22                  |
| 0.220              | MMWA4P22K-F            | 0.335 (8.5)      | 1.000 (25.4)     | 0.024 (0.6)      | 22                  |
| 0.330              | MMWA4P33K-F            | 0.394 (10.0)     | 1.187 (30.1)     | 0.024 (0.6)      | 22                  |
| 0.470              | MMWA4P47K-F            | 0.433 (11.0)     | 1.187 (30.1)     | 0.024 (0.6)      | 22                  |

| Cap.<br>( $\mu$ F) | Catalog<br>Part Number | D<br>Inches (mm) | L<br>Inches (mm) | d<br>Inches (mm) | dV/dt<br>V/ $\mu$ s |
|--------------------|------------------------|------------------|------------------|------------------|---------------------|
| 0.680              | MMWA4P68K-F            | 0.433 (11.0)     | 1.500 (38.1)     | 0.024 (0.6)      | 10                  |
| 1.000              | MMWA4W1K-F             | 0.470 (11.9)     | 1.750 (44.4)     | 0.024 (0.6)      | 8                   |
| 1.500              | MMWA4W1P5K-F           | 0.570 (14.5)     | 1.750 (44.4)     | 0.032 (0.8)      | 8                   |
| 2.000              | MMWA4W2K-F             | 0.669 (17.0)     | 1.750 (44.4)     | 0.040 (1.0)      | 8                   |
| 3.000              | MMWA4W3K-F             | 0.695 (17.6)     | 2.125 (54.0)     | 0.040 (1.0)      | 6                   |
| 3.500              | MMWA4W3P5K-F           | 0.745 (18.9)     | 2.125 (54.0)     | 0.040 (1.0)      | 6                   |
| 4.000              | MMWA4W4K-F             | 0.790 (20.1)     | 2.125 (54.0)     | 0.040 (1.0)      | 6                   |
| 5.000              | MMWA4W5K-F             | 0.870 (22.1)     | 2.125 (54.0)     | 0.040 (1.0)      | 6                   |
| <b>600/630 Vdc</b> |                        |                  |                  |                  |                     |
| 0.010              | MMWA6S1K-F             | 0.217 (5.5)      | 0.687 (17.4)     | 0.020 (0.5)      | 69                  |
| 0.015              | MMWA6S15K-F            | 0.236 (6.0)      | 0.687 (17.4)     | 0.020 (0.5)      | 69                  |
| 0.022              | MMWA6S22K-F            | 0.276 (7.0)      | 0.750 (19.0)     | 0.020 (0.5)      | 69                  |
| 0.033              | MMWA6S33K-F            | 0.270 (6.9)      | 0.750 (19.0)     | 0.024 (0.6)      | 69                  |
| 0.047              | MMWA6S47K-F            | 0.305 (7.7)      | 0.750 (19.0)     | 0.024 (0.6)      | 69                  |
| 0.068              | MMWA6S68K-F            | 0.335 (8.5)      | 1.000 (25.4)     | 0.024 (0.6)      | 32                  |
| 0.100              | MMWA6P1K-F             | 0.374 (9.5)      | 1.000 (25.4)     | 0.024 (0.6)      | 32                  |
| 0.150              | MMWA6P15K-F            | 0.413 (10.5)     | 1.187 (30.1)     | 0.024 (0.6)      | 32                  |
| 0.220              | MMWA6P22K-F            | 0.430 (10.9)     | 1.250 (31.7)     | 0.024 (0.6)      | 32                  |
| 0.330              | MMWA6P33K-F            | 0.480 (12.2)     | 1.250 (31.7)     | 0.024 (0.6)      | 32                  |
| 0.470              | MMWA6P47K-F            | 0.470 (11.9)     | 1.750 (44.4)     | 0.024 (0.6)      | 12                  |
| 0.680              | MMWA6P68K-F            | 0.570 (14.5)     | 1.750 (44.4)     | 0.032 (0.8)      | 12                  |
| 1.000              | MMWA6W1K-F             | 0.685 (17.4)     | 1.750 (44.4)     | 0.040 (1.0)      | 12                  |
| 2.000              | MMWA6W2K-F             | 0.805 (20.4)     | 2.250 (57.1)     | 0.040 (1.0)      | 10                  |
| 3.000              | MMWA6W3K-F             | 0.945 (24.0)     | 2.250 (57.1)     | 0.040 (1.0)      | 10                  |
| <b>1000 Vdc</b>    |                        |                  |                  |                  |                     |
| 0.010              | MMWA10S1K-F            | 0.240 (6.1)      | 0.875 (22.2)     | 0.020 (0.5)      | 220                 |
| 0.015              | MMWA10S15K-F           | 0.275 (7.0)      | 0.875 (22.2)     | 0.024 (0.6)      | 220                 |
| 0.022              | MMWA10S22K-F           | 0.320 (8.1)      | 0.875 (22.2)     | 0.024 (0.6)      | 220                 |
| 0.033              | MMWA10S33K-F           | 0.380 (9.6)      | 0.875 (22.2)     | 0.024 (0.6)      | 220                 |
| 0.047              | MMWA10S47K-F           | 0.335 (8.5)      | 1.062 (27.0)     | 0.024 (0.6)      | 120                 |
| 0.068              | MMWA10S68K-F           | 0.410 (10.4)     | 1.125 (28.6)     | 0.024 (0.6)      | 120                 |
| 0.100              | MMWA10P1K-F            | 0.485 (12.3)     | 1.125 (28.6)     | 0.024 (0.6)      | 120                 |
| 0.150              | MMWA10P15K-F           | 0.595 (15.1)     | 1.125 (28.6)     | 0.032 (0.8)      | 120                 |
| 0.220              | MMWA10P22K-F           | 0.605 (15.4)     | 1.312 (33.3)     | 0.032 (0.8)      | 85                  |
| 0.330              | MMWA10P33K-F           | 0.640 (16.3)     | 1.500 (38.1)     | 0.032 (0.8)      | 50                  |
| 0.470              | MMWA10P47K-F           | 0.750 (19.0)     | 1.500 (38.1)     | 0.040 (1.0)      | 50                  |
| 0.680              | MMWA10P68K-F           | 0.810 (20.6)     | 1.750 (44.4)     | 0.040 (1.0)      | 45                  |
| 1.000              | MMWA10W1K-F            | 0.880 (22.3)     | 1.937 (49.2)     | 0.040 (1.0)      | 40                  |



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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