

# 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 (35-480 Vac, 60 Hz)

**Capacitance Range:** .01-10  $\mu$ F

**Capacitance Tolerance:**  $\pm 10\%$  (K) standard  
 $\pm 5\%$  (J) optional

**Operating Temperature Range:** -55°C to 125°C\*

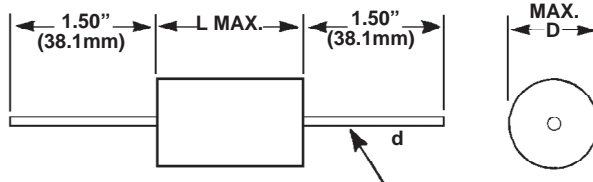
\*Full-rated voltage at 85°C—Derate linearly to 50%-rated voltage at 125°C

**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 (35 Vac)</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 (65 Vac)</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. ( $\mu$ F)	Catalog Part Number	D Inches (mm)	L Inches (mm)	d Inches (mm)	dV/dt V/ $\mu$ s	Cap. ( $\mu$ F)	Catalog Part Number	D Inches (mm)	L Inches (mm)	d Inches (mm)	dV/dt V/ $\mu$ s
5.000	MMWA1W5K-F	0.525 (13.3)	1.500 (38.1)	0.032 (0.8)	4	0.680	MMWA4P68K-F	0.433 (11.0)	1.500 (38.1)	0.024 (0.6)	10
6.000	MMWA1W6K-F	0.585 (14.9)	1.500 (38.1)	0.032 (0.8)	4	1.000	MMWA4W1K-F	0.470 (11.9)	1.750 (44.4)	0.024 (0.6)	8
7.000	MMWA1W7K-F	0.625 (15.9)	1.500 (38.1)	0.032 (0.8)	4	1.500	MMWA4W1P5K-F	0.570 (14.5)	1.750 (44.4)	0.032 (0.8)	8
8.000	MMWA1W8K-F	0.669 (17.0)	1.500 (38.1)	0.040 (1.0)	4	2.000	MMWA4W2K-F	0.669 (17.0)	1.750 (44.4)	0.040 (1.0)	8
9.000	MMWA1W9K-F	0.700 (17.8)	1.500 (38.1)	0.040 (1.0)	4	3.000	MMWA4W3K-F	0.695 (17.6)	2.125 (54.0)	0.040 (1.0)	6
10.000	MMWA1W10K-F	0.768 (19.5)	1.750 (44.4)	0.040 (1.0)	3	3.500	MMWA4W3P5K-F	0.745 (18.9)	2.125 (54.0)	0.040 (1.0)	6
<b>200/250 Vdc (125 Vac)</b>						4.000	MMWA4W4K-F	0.790 (20.1)	2.125 (54.0)	0.040 (1.0)	6
0.010	MMWA2S1K-F	0.197 (5.0)	0.562 (14.3)	0.020 (0.5)	52	5.000	MMWA4W5K-F	0.870 (22.1)	2.125 (54.0)	0.040 (1.0)	6
0.015	MMWA2S15K-F	0.197 (5.0)	0.562 (14.3)	0.020 (0.5)	52	<b>600/630 Vdc (250 Vac)</b>					
0.022	MMWA2S22K-F	0.197 (5.0)	0.562 (14.3)	0.020 (0.5)	52	0.010	MMWA6S1K-F	0.217 (5.5)	0.687 (17.4)	0.020 (0.5)	69
0.033	MMWA2S33K-F	0.197 (5.0)	0.562 (14.3)	0.020 (0.5)	52	0.015	MMWA6S15K-F	0.236 (6.0)	0.687 (17.4)	0.020 (0.5)	69
0.047	MMWA2S47K-F	0.217 (5.5)	0.562 (14.3)	0.020 (0.5)	52	0.022	MMWA6S22K-F	0.276 (7.0)	0.750 (19.0)	0.020 (0.5)	69
0.068	MMWA2S68K-F	0.200 (5.1)	0.687 (17.4)	0.020 (0.5)	29	0.033	MMWA6S33K-F	0.270 (6.9)	0.750 (19.0)	0.024 (0.6)	69
0.100	MMWA2P1K-F	0.240 (6.1)	0.687 (17.4)	0.020 (0.5)	29	0.047	MMWA6S47K-F	0.305 (7.7)	0.750 (19.0)	0.024 (0.6)	69
0.150	MMWA2P15K-F	0.276 (7.0)	0.687 (17.4)	0.024 (0.6)	29	0.068	MMWA6S68K-F	0.335 (8.5)	1.000 (25.4)	0.024 (0.6)	32
0.220	MMWA2P22K-F	0.310 (7.9)	0.687 (17.4)	0.024 (0.6)	29	0.100	MMWA6P1K-F	0.374 (9.5)	1.000 (25.4)	0.024 (0.6)	32
0.330	MMWA2P33K-F	0.365 (9.3)	0.728 (18.5)	0.024 (0.6)	29	0.150	MMWA6P15K-F	0.413 (10.5)	1.187 (30.1)	0.024 (0.6)	32
0.470	MMWA2P47K-F	0.374 (9.5)	1.000 (25.4)	0.024 (0.6)	14	0.220	MMWA6P22K-F	0.430 (10.9)	1.250 (31.7)	0.024 (0.6)	32
0.680	MMWA2P68K-F	0.365 (9.3)	1.000 (25.4)	0.024 (0.6)	14	0.330	MMWA6P33K-F	0.480 (12.2)	1.250 (31.7)	0.024 (0.6)	32
1.000	MMWA2W1K-F	0.430 (10.9)	1.062 (27.0)	0.024 (0.6)	14	0.470	MMWA6P47K-F	0.470 (11.9)	1.750 (44.4)	0.024 (0.6)	12
1.500	MMWA2W1P5K-F	0.465 (11.8)	1.250 (31.7)	0.024 (0.6)	14	0.680	MMWA6P68K-F	0.570 (14.5)	1.750 (44.4)	0.032 (0.8)	12
2.000	MMWA2W2K-F	0.525 (13.3)	1.250 (31.7)	0.032 (0.8)	14	1.000	MMWA6W1K-F	0.685 (17.4)	1.750 (44.4)	0.040 (1.0)	12
3.000	MMWA2W3K-F	0.555 (14.1)	1.500 (38.1)	0.032 (0.8)	6	2.000	MMWA6W2K-F	0.805 (20.4)	2.250 (57.1)	0.040 (1.0)	10
3.500	MMWA2W3P5K-F	0.610 (15.5)	1.500 (38.1)	0.032 (0.8)	6	3.000	MMWA6W3K-F	0.945 (24.0)	2.250 (57.1)	0.040 (1.0)	10
4.000	MMWA2W4K-F	0.590 (15.0)	1.750 (44.4)	0.032 (0.8)	5	<b>1000 Vdc (480 Vac)</b>					
5.000	MMWA2W5K-F	0.669 (17.0)	1.750 (44.4)	0.040 (1.0)	5	0.010	MMWA10S1K-F	0.240 (6.1)	0.875 (22.2)	0.020 (0.5)	220
6.000	MMWA2W6K-F	0.705 (17.9)	1.750 (44.4)	0.040 (1.0)	5	0.015	MMWA10S15K-F	0.275 (7.0)	0.875 (22.2)	0.024 (0.6)	220
<b>400 Vdc (200 Vac)</b>						0.022	MMWA10S22K-F	0.320 (8.1)	0.875 (22.2)	0.024 (0.6)	220
0.010	MMWA4S1K-F	0.217 (5.5)	0.562 (14.3)	0.020 (0.5)	82	0.033	MMWA10S33K-F	0.380 (9.6)	0.875 (22.2)	0.024 (0.6)	220
0.015	MMWA4S15K-F	0.217 (5.5)	0.562 (14.3)	0.020 (0.5)	82	0.047	MMWA10S47K-F	0.335 (8.5)	1.062 (27.0)	0.024 (0.6)	120
0.022	MMWA4S22K-F	0.236 (6.0)	0.562 (14.3)	0.020 (0.5)	82	0.068	MMWA10S68K-F	0.410 (10.4)	1.125 (28.6)	0.024 (0.6)	120
0.033	MMWA4S33K-F	0.220 (5.6)	0.687 (17.4)	0.020 (0.5)	46	0.100	MMWA10P1K-F	0.485 (12.3)	1.125 (28.6)	0.024 (0.6)	120
0.047	MMWA4S47K-F	0.276 (7.0)	0.687 (17.4)	0.020 (0.5)	46	0.150	MMWA10P15K-F	0.595 (15.1)	1.125 (28.6)	0.032 (0.8)	120
0.068	MMWA4S68K-F	0.280 (7.1)	0.687 (17.4)	0.024 (0.6)	46	0.220	MMWA10P22K-F	0.605 (15.4)	1.312 (33.3)	0.032 (0.8)	85
0.100	MMWA4P1K-F	0.320 (8.1)	0.687 (17.4)	0.024 (0.6)	46	0.330	MMWA10P33K-F	0.640 (16.3)	1.500 (38.1)	0.032 (0.8)	50
0.150	MMWA4P15K-F	0.290 (7.4)	1.000 (25.4)	0.024 (0.6)	22	0.470	MMWA10P47K-F	0.750 (19.0)	1.500 (38.1)	0.040 (1.0)	50
0.220	MMWA4P22K-F	0.335 (8.5)	1.000 (25.4)	0.024 (0.6)	22	0.680	MMWA10P68K-F	0.810 (20.6)	1.750 (44.4)	0.040 (1.0)	45
0.330	MMWA4P33K-F	0.394 (10.0)	1.187 (30.1)	0.024 (0.6)	22	1.000	MMWA10W1K-F	0.880 (22.3)	1.937 (49.2)	0.040 (1.0)	40
0.470	MMWA4P47K-F	0.433 (11.0)	1.187 (30.1)	0.024 (0.6)	22						