



## Metallized Polyester Film Capacitors

*Axial Leaded, General Purpose*

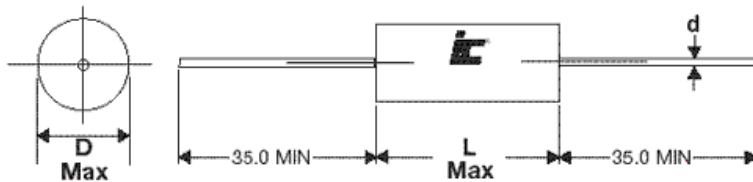
### FEATURES

Small Size - Low ESR - General Purpose

### APPLICATIONS

General Purpose - Bypass - Coupling - Blocking

|   |   |  |           |            |                              |            |            |                   |             |  |
|---|---|--|-----------|------------|------------------------------|------------|------------|-------------------|-------------|--|
| <b>Operating Temperature Range</b>  | <b>-40°C to +105°C</b>  |  |           |            |                              |            |            |                   |             |  |
| <b>Capacitance Tolerance</b>  | ±10% at 1 kHz, 25°C<br>+5% optional   |  |           |            |                              |            |            |                   |             |  |
| <b>Peak, AC voltage (50/60 Hz)</b>  | <b>WVDC</b>   | <b>50</b>  | <b>63</b> | <b>100</b> | <b>250</b>                   | <b>400</b> | <b>630</b> | <b>1000</b>       | <b>1500</b> |  |
|   | <b>VAC</b>  | 30   | 40        | 63         | 160                          | 200        | 220        | 250               | 300         |  |
| For T>+85°C, The voltage must be decreased by 1.25% per °C                            |   |  |           |            |                              |            |            |                   |             |  |
| <b>Dissipation Factor (MAX)<br/>25°C</b>  | <b>Frequency (kHz)</b>  | <b>C&lt;0.1uF</b>  |           |            | <b>0.1uF&lt;C&lt;1.0uF</b>   |            |            | <b>C&gt;1.0uF</b> |             |  |
|   | <b>1</b>  | 0.80%  |           |            | 1.00%                        |            |            | 1.00%             |             |  |
|   | <b>10</b>   | 1.50%  |           |            | 1.50%                        |            |            | -                 |             |  |
|   | <b>100</b>  | 2.50%  |           |            | -                            |            |            | -                 |             |  |
| <b>Insulation Resistance<br/>@25°C (&lt;70% RH)for 1 minute at<br/>100VDC applied</b> | <b>WVDC</b>   | <b>Capacitance</b>   |           |            | <b>Insulation Resistance</b> |            |            |                   |             |  |
|   | <b>≤100WVDC</b>   | <b>≤0.33μF</b>   |           |            | 15000 MΩ                     |            |            |                   |             |  |
|   | <b>&gt;100WVDC</b>  | <b>≤0.33μF</b>   |           |            | 30000 MΩxμF                  |            |            |                   |             |  |
|   | <b>≤100WVDC</b>   | <b>&gt;0.33μF</b>  |           |            | 15000 MΩxμF                  |            |            |                   |             |  |
|   | <b>&gt;100WVDC</b>  | <b>&gt;0.33μF</b>  |           |            | 10000 MΩxμF                  |            |            |                   |             |  |
| <b>Load Life</b>  | <b>2000 Hours, +85C with 125% of rated voltage</b>                              |  |           |            |                              |            |            |                   |             |  |
|   | <b>Capacitance Change</b>   | ≤5% of initially measured value  |           |            |                              |            |            |                   |             |  |
|   | <b>Dissipation Factor</b>   | ≤0.005 at 1kHz and 25°C for C≤1uF<br>≤0.005 at 1kHz and 25°C For C>1uF |           |            |                              |            |            |                   |             |  |
|   | <b>Insulation Resistance</b>  | >50% of maximum specified value  |           |            |                              |            |            |                   |             |  |
| <b>Damp Heat test</b>   | <b>56 days at40°C with 93%RH(+/-2%), +40°C and no voltage applied</b>           |  |           |            |                              |            |            |                   |             |  |
|   | <b>Capacitance Change</b>   | ≤5% of initially measured value  |           |            |                              |            |            |                   |             |  |
|   | <b>Dissipation Factor</b>   | ≤0.005 at 1kHz and 25°C  |           |            |                              |            |            |                   |             |  |
|   | <b>Insulation Resistance</b>  | ≥50% of maximum specified value  |           |            |                              |            |            |                   |             |  |
| <b>Self Inductance</b>  | <1 nano-Henry per mm of body length and lead length                             |  |           |            |                              |            |            |                   |             |  |
| <b>Capacitance Drift Factor</b>   | <1.0% after 2 years at 40°C   |  |           |            |                              |            |            |                   |             |  |
| <b>Capacitance Temperature Coefficient</b>  | +400 ppm/°C, ±200ppm/°C   |  |           |            |                              |            |            |                   |             |  |
| <b>Dielectric Strength</b>  | <b>Terminal to Terminal</b>   |  |           |            |                              |            |            |                   |             |  |
|   | 160% of VDC applied for 2 Seconds and 25°C                                      |  |           |            |                              |            |            |                   |             |  |
| <b>Dielectric Construction</b>  | Polyester   |  |           |            |                              |            |            |                   |             |  |
| <b>Coating</b>  | Metallized film Internal series connected (>1000WVDC)                           |  |           |            |                              |            |            |                   |             |  |
| <b>Leads</b>  | Flame Retardant Polyester tape wrap (UL 510) with epoxy resin end fills(UL94V0) |  |           |            |                              |            |            |                   |             |  |
|   | Lead free tinned copper leads   |  |           |            |                              |            |            |                   |             |  |



| Lead Diameter |     |
|---------------|-----|
| D             | d   |
| ≤9            | 0.6 |
| 9<D≤20        | 0.8 |
| >20           | 1.0 |

# MWR

## Metallized Polyester Axial Lead

| Capacitance (µF) | WVDC | IC PART NUMBER | dv/dt (v/µ sec.) | Dims DxL (mm) | d (MM) |
|------------------|------|----------------|------------------|---------------|--------|
| 0.001            | 630  | 102MWR630K     | 60               | 5.5x11.5      | 0.6    |
| 0.001            | 1500 | 102MWR152KB    | 90               | 5.5x14.5      | 0.6    |
| 0.0015           | 630  | 152MWR630K     | 60               | 5.5x11.5      | 0.6    |
| 0.0015           | 1500 | 152MWR152KB    | 90               | 5.5x14.5      | 0.6    |
| 0.0022           | 630  | 222MWR630K     | 60               | 5.5x11.5      | 0.6    |
| 0.0022           | 1500 | 222MWR152KB    | 90               | 6x14.5        | 0.6    |
| 0.0033           | 630  | 332MWR630K     | 60               | 5.5x11.5      | 0.6    |
| 0.0033           | 1500 | 332MWR152KB    | 90               | 6.5x14.5      | 0.6    |
| 0.0039           | 630  | 392MWR630K     | 60               | 5.5x11.5      | 0.6    |
| 0.0047           | 630  | 472MWR630K     | 60               | 5.5x11.5      | 0.6    |
| 0.0047           | 1500 | 472MWR152KB    | 90               | 7x14.5        | 0.6    |
| 0.0068           | 630  | 682MWR630K     | 60               | 5.5x11.5      | 0.6    |
| 0.0068           | 1500 | 682MWR152KB    | 90               | 8x14.5        | 0.6    |
| 0.01             | 400  | 103MWR400K     | 14               | 5x11.5        | 0.6    |
| 0.01             | 630  | 103MWR630K     | 20               | 6x14          | 0.6    |
| 0.01             | 1000 | 103MWR102K     | 80               | 7x14.5        | 0.6    |
| 0.01             | 1500 | 103MWR152KB    | 90               | 8.5x14.5      | 0.8    |
| 0.015            | 400  | 153MWR400K     | 14               | 5.5x14.5      | 0.6    |
| 0.015            | 630  | 153MWR630K     | 20               | 6.5x14.5      | 0.6    |
| 0.015            | 1000 | 153MWR102K     | 80               | 8x14.5        | 0.6    |
| 0.015            | 1500 | 153MWR152KD    | 50               | 8.5x20.5      | 0.8    |
| 0.022            | 250  | 223MWR250K     | 10               | 5.5x11.5      | 0.6    |
| 0.022            | 400  | 223MWR400K     | 14               | 5.5x14        | 0.6    |
| 0.022            | 630  | 223MWR630K     | 20               | 8x14          | 0.6    |
| 0.022            | 1000 | 223MWR102K     | 40               | 9.5x20.5      | 0.8    |
| 0.022            | 1500 | 223MWR152KD    | 50               | 9.5x20.5      | 0.8    |
| 0.033            | 250  | 333MWR250K     | 10               | 6x11.5        | 0.6    |
| 0.033            | 400  | 333MWR400K     | 6                | 6x14          | 0.6    |
| 0.033            | 630  | 333MWR630K     | 15               | 8x20.5        | 0.6    |
| 0.033            | 1000 | 333MWR102K     | 40               | 10.5x20.5     | 0.8    |
| 0.033            | 1500 | 333MWR152KD    | 50               | 11x20.5       | 0.8    |
| 0.039            | 250  | 393MWR250K     | 10               | 6x11.5        | 0.6    |
| 0.039            | 400  | 393MWR400K     | 14               | 7x15.5        | 0.6    |
| 0.039            | 630  | 393MWR630K     | 15               | 8x20.5        | 0.6    |
| 0.047            | 250  | 473MWR250K     | 10               | 5.5x14        | 0.6    |
| 0.047            | 400  | 473MWR400K     | 6                | 7x14          | 0.6    |
| 0.047            | 630  | 473MWR630K     | 15               | 7.5x19        | 0.6    |
| 0.047            | 1000 | 473MWR102K     | 33               | 11x29         | 0.8    |
| 0.047            | 1500 | 473MWR152KG    | 40               | 11x29         | 0.8    |
| 0.068            | 100  | 683MWR100K     | 6                | 5.5x11.5      | 0.6    |
| 0.068            | 250  | 683MWR250K     | 10               | 6.5x14.5      | 0.6    |
| 0.068            | 400  | 683MWR400K     | 10               | 7.5x20.5      | 0.6    |
| 0.068            | 630  | 683MWR630K     | 15               | 9x20.5        | 0.8    |
| 0.068            | 1000 | 683MWR102K     | 33               | 12.5x29       | 0.8    |
| 0.068            | 1500 | 683MWR152KG    | 40               | 12.5x29       | 0.8    |
| 0.1              | 100  | 104MWR100K     | 6                | 6x11.5        | 0.6    |
| 0.1              | 250  | 104MWR250K     | 10               | 6x14          | 0.6    |
| 0.1              | 400  | 104MWR400K     | 10               | 7.5x19        | 0.6    |
| 0.1              | 630  | 104MWR630K     | 10               | 9x27          | 0.8    |
| 0.1              | 1000 | 104MWR102K     | 33               | 12x29         | 0.8    |
| 0.1              | 1500 | 104MWR152KJ    | 25               | 13x34         | 0.8    |
| 0.15             | 63   | 154MWR063K     | 11               | 5.5x14        | 0.6    |
| 0.15             | 100  | 154MWR100K     | 6                | 6x14          | 0.6    |
| 0.15             | 250  | 154MWR250K     | 10               | 7x14          | 0.6    |
| 0.15             | 400  | 154MWR400K     | 10               | 8.5x19        | 0.6    |
| 0.15             | 630  | 154MWR630K     | 10               | 10.5x29       | 0.8    |
| 0.15             | 1000 | 154MWR102K     | 20               | 13x34         | 0.8    |
| 0.15             | 1500 | 154MWR152KJ    | 25               | 15x34         | 0.8    |

| Capacitance (µF) | WVDC | IC PART NUMBER | dv/dt (v/µ sec.) | Dims DxL (mm) | d (MM) |
|------------------|------|----------------|------------------|---------------|--------|
| 0.22             | 50   | 224MWR050K     | 9                | 6x11.5        | 0.6    |
| 0.22             | 100  | 224MWR100K     | 6                | 6.5x14        | 0.6    |
| 0.22             | 250  | 224MWR250K     | 7                | 7x19          | 0.6    |
| 0.22             | 400  | 224MWR400K     | 6                | 8.5x27        | 0.8    |
| 0.22             | 630  | 224MWR630K     | 10               | 12.5x27       | 0.8    |
| 0.22             | 1000 | 224MWR102K     | 20               | 14.5x34       | 0.8    |
| 0.22             | 1500 | 224MWR152KJ    | 25               | 17.5x34       | 0.8    |
| 0.33             | 50   | 334MWR050K     | 9                | 6x11.5        | 0.6    |
| 0.33             | 100  | 334MWR100K     | 6                | 7.5x14        | 0.6    |
| 0.33             | 250  | 334MWR250K     | 7                | 8x19          | 0.6    |
| 0.33             | 400  | 334MWR400K     | 6                | 10x27         | 0.8    |
| 0.33             | 630  | 334MWR630K     | 6                | 13.5x34       | 0.8    |
| 0.33             | 1000 | 334MWR102K     | 20               | 17x34         | 0.8    |
| 0.33             | 1500 | 334MWR152KJ    | 25               | 20.5x34       | 1      |
| 0.47             | 50   | 474MWR050K     | 9                | 6x11.5        | 0.6    |
| 0.47             | 100  | 474MWR100K     | 6                | 7x15.5        | 0.6    |
| 0.47             | 250  | 474MWR250K     | 7                | 9.5x19        | 0.8    |
| 0.47             | 400  | 474MWR400K     | 6                | 12.5x27       | 0.8    |
| 0.47             | 630  | 474MWR630K     | 6                | 15x34         | 0.8    |
| 0.47             | 1000 | 474MWR102K     | 20               | 19.5x34       | 0.8    |
| 0.47             | 1500 | 474MWR152KJ    | 25               | 24x34         | 1      |
| 0.68             | 50   | 684MWR050K     | 9                | 6x11.5        | 0.6    |
| 0.68             | 63   | 684MWR063K     | 7                | 6.5x19        | 0.6    |
| 0.68             | 100  | 684MWR100K     | 3                | 8x19          | 0.6    |
| 0.68             | 250  | 684MWR250K     | 4                | 9.5x27        | 0.8    |
| 0.68             | 400  | 684MWR400K     | 4                | 12.5x34       | 0.8    |
| 0.68             | 630  | 684MWR630K     | 6                | 18.5x34       | 0.8    |
| 0.68             | 1500 | 684MWR152KN    | 25               | 24.5x46.5     | 1      |
| 1                | 50   | 105MWR050K     | 9                | 7.5x11.5      | 0.6    |
| 1                | 63   | 105MWR063K     | 7                | 8x20.5        | 0.6    |
| 1                | 100  | 105MWR100K     | 3                | 9.5x19        | 0.8    |
| 1                | 250  | 105MWR250K     | 4                | 10.5x27       | 0.8    |
| 1                | 400  | 105MWR400K     | 4                | 14.5x34       | 0.8    |
| 1                | 630  | 105MWR630K     | 6                | 22x34         | 1      |
| 1                | 1500 | 105MWR152KN    | 25               | 28.5x46.5     | 1      |
| 1.5              | 50   | 155MWR050K     | 9                | 8x14.5        | 0.6    |
| 1.5              | 63   | 155MWR063K     | 7                | 9.5x20.5      | 0.8    |
| 1.5              | 100  | 155MWR100K     | 2                | 9x27          | 0.8    |
| 1.5              | 250  | 155MWR250K     | 4                | 12.5x29       | 0.8    |
| 1.5              | 400  | 155MWR400K     | 4                | 17.5x34       | 0.8    |
| 1.5              | 630  | 155MWR630K     | 6                | 26.5x34       | 1      |
| 1.5              | 1500 | 155MWR152KN    | 25               | 34x46.5       | 1      |
| 2.2              | 50   | 225MWR050K     | 9                | 9x14.5        | 0.8    |
| 2.2              | 63   | 225MWR063K     | 5                | 10.5x29       | 0.8    |
| 2.2              | 100  | 225MWR100K     | 2                | 12x29         | 0.8    |
| 2.2              | 250  | 225MWR250K     | 2                | 13.5x34       | 0.8    |
| 2.2              | 400  | 225MWR400K     | 2                | 20.5x34       | 0.8    |
| 3.3              | 50   | 335MWR050K     | 6                | 10x20.5       | 0.8    |
| 3.3              | 63   | 335MWR063K     | 5                | 11x29         | 0.8    |
| 3.3              | 100  | 335MWR100K     | 2                | 13x29         | 0.8    |
| 3.3              | 250  | 335MWR250K     | 2                | 16x34         | 0.8    |
| 3.3              | 400  | 335MWR400K     | 2                | 22.5x47       | 1      |
| 4.7              | 50   | 475MWR050K     | 6                | 10.5x20.5     | 0.8    |
| 4.7              | 63   | 475MWR063K     | 5                | 12.5x29       | 0.8    |
| 4.7              | 100  | 475MWR100K     | 4                | 12.5x34       | 0.8    |
| 4.7              | 250  | 475MWR250K     | 2                | 19.5x34       | 0.8    |
| 6.8              | 50   | 685MWR050K     | 6                | 11.5x20.5     | 0.8    |
| 6.8              | 100  | 685MWR100K     | 2                | 17x34         | 0.8    |

# MWR

## Metallized Polyester Axial Lead

| Capacitance (μF) | WVDC | IC PART NUMBER             | dv/dt (v/μ sec.) | Dims DxL (mm) | d (MM) |
|------------------|------|----------------------------|------------------|---------------|--------|
| 6.8              | 250  | <a href="#">685MWR250K</a> | 5                | 23x34         | 1      |
| 10               | 50   | <a href="#">106MWR050K</a> | 6                | 13.5x20.5     | 0.8    |
| 10               | 63   | <a href="#">106MWR063K</a> | 4                | 14x34         | 0.8    |
| 10               | 100  | <a href="#">106MWR100K</a> | 2                | 18x34         | 0.8    |

| Capacitance (μF) | WVDC | IC PART NUMBER             | dv/dt (v/μ sec.) | Dims DxL (mm) | d (MM) |
|------------------|------|----------------------------|------------------|---------------|--------|
| 10               | 250  | <a href="#">106MWR250K</a> | 2                | 24.5x46.5     | 1      |
| 15               | 100  | <a href="#">156MWR100K</a> | 2                | 21x34         | 1      |
| 22               | 100  | <a href="#">226MWR100K</a> | 2                | 22x46         | 1      |