



## Metallized Polyester Film Capacitors

Radial Leaded, Epoxy Dipped

### FEATURES

Small Size - Self Healing - Low Cost

### APPLICATIONS

General Purpose - Bypass - Coupling - Blocking

|   |  |             |                                 |     |     |      |
|---|--|-------------|---------------------------------|-----|-----|------|
| Operating Temperature Range   | <b>-55°C to +125°C</b>                                 |             |                                 |     |     |      |
| Capacitance Tolerance   | $\pm 10\%$ at 1 kHz, 25°C<br>$\pm 5\%$ optional        |             |                                 |     |     |      |
| Peak, AC voltage (50/60 Hz)   | WVDC   | 100         | 250                             | 400 | 630 | 1000 |
|   | VAC  | 63          | 160                             | 200 | 220 | 250  |
| For T>+85°C , The voltage must be decreased by 1.25% per °C               |  |             |                                 |     |     |      |
| Dissipation Factor (MAX)<br>25°C  | Frequency (kHz)  |             | Dissipation Factor              |     |     |      |
|   | 1  |             | 1.0%                            |     |     |      |
|   | 10   |             | 1.5%                            |     |     |      |
| Insulation Resistance<br>@25°C (<70% RH)for 1 minute at<br>100VDC applied | WVDC   | Capacitance | Insulation Resistance           |     |     |      |
|   | ≤100   | ≤0.33μF     | 15000 MΩ                        |     |     |      |
|   | >100   | >0.33μF     | 30000 MΩ                        |     |     |      |
|   | ≤100   | <0.33μF     | 5000 MΩxμF                      |     |     |      |
|   | >100   | >0.33μF     | 10000 MΩxμF                     |     |     |      |
| Load Life   | 2000 Hours, +85C with 125% of rated voltage            |             |                                 |     |     |      |
|   | Capacitance Change                                     |             | ≤5% of initially measured value |     |     |      |
|   | Dissipation Factor                                     |             | ≤0.005 at 1kHz and 25°C         |     |     |      |
|   | Insulation Resistance                                  |             | >50% of maximum specified value |     |     |      |
| Damp Heat test  | 1000 Hours, 93%RH(+/-2%), +40°C and no voltage applied |             |                                 |     |     |      |
|   | Capacitance Change                                     |             | ≤5% of initially measured value |     |     |      |
|   | Dissipation Factor                                     |             | ≤0.005 at 1kHz and 25°C         |     |     |      |
|   | Insulation Resistance                                  |             | ≥50% of maximum specified value |     |     |      |
| Self Inductance   | <1 nano-Henry per mm of body length and lead length    |             |                                 |     |     |      |
| Capacitance Drift Factor  | <1.0% after 2 years at 40°C <75%RH                     |             |                                 |     |     |      |
| Capacitance Temperature Coefficient                                       | +400 ppm/°C, ±200ppm/°C                                |             |                                 |     |     |      |
| Dielectric Strength   | <b>Terminal to Terminal</b>                            |             |                                 |     |     |      |
|   | 160% of VDC applied for 5 Seconds and 25°C             |             |                                 |     |     |      |
| Dielectric Construction   | Polyester<br>Metallized film                           |             |                                 |     |     |      |
| Coating   | Flame Retardant epoxy resin (UL94V0)                   |             |                                 |     |     |      |
| Leads   | Lead free tinned                                       |             |                                 |     |     |      |



|         |      |     |      |      |      |
|---------|------|-----|------|------|------|
| L MAX   | 10.5 | 12  | 18.5 | 26   | 31   |
| S+1.0   | 7.5  | 10  | 15   | 22.5 | 27.5 |
| G MAX   | 1.5  | 1.5 | 1.5  | 1.5  | 1.5  |
| d +0.05 | 0.6  | 0.6 | 0.8  | 0.8  | 0.8  |

# MSR

Metallized Polyester Epoxy  
Dipped Radial Lead

| WVDC | Capacitance (μF) | IC PART NUMBER | dv/dt (v/μ sec.) | Dims LxHxT (mm) | S (MM) | d (MM) |
|------|------------------|----------------|------------------|-----------------|--------|--------|
| 100  | 0.047            | 473MSR100K     | 35               | 10.5x9.5x6      | 7.5    | 0.6    |
| 100  | 0.068            | 683MSR100K     | 35               | 10.5x9.5x6      | 7.5    | 0.6    |
| 100  | 0.1              | 104MSR100K     | 30               | 12.5x8.5x5.5    | 10     | 0.6    |
| 100  | 0.15             | 154MSR100K     | 30               | 13x9x5.5        | 10     | 0.6    |
| 100  | 0.22             | 224MSR100K     | 30               | 13x10x6.5       | 10     | 0.6    |
| 100  | 0.33             | 334MSR100K     | 20               | 17.5x10x5.5     | 15     | 0.8    |
| 100  | 0.47             | 474MSR100K     | 20               | 18x11x7         | 15     | 0.8    |
| 100  | 0.68             | 684MSR100K     | 20               | 18.5x12.5x7.5   | 15     | 0.8    |
| 100  | 1                | 105MSR100K     | 20               | 18.5x13.5x8.5   | 15     | 0.8    |
| 100  | 1.5              | 155MSR100K     | 10               | 22.5x14.5x8     | 20     | 0.8    |
| 100  | 2.2              | 225MSR100K     | 10               | 22.5x16.5x10    | 20     | 0.8    |
| 100  | 3.3              | 335MSR100K     | 10               | 22.5x20x12      | 20     | 0.8    |
| 100  | 4.7              | 475MSR100K     | 5                | 30x20.5x11      | 27.5   | 0.8    |
| 100  | 6.8              | 685MSR100K     | 5                | 32x23.5x14.5    | 27.5   | 0.8    |
| 100  | 10               | 106MSR100K     | 5                | 32x28.5x17.5    | 27.5   | 0.8    |
| 250  | 0.015            | 153MSR250K     | 110              | 10.5x9.5x5.5    | 7.5    | 0.6    |
| 250  | 0.022            | 223MSR250K     | 110              | 10.5x9.5x5.5    | 7.5    | 0.6    |
| 250  | 0.033            | 333MSR250K     | 110              | 10.5x9.5x6      | 7.5    | 0.6    |
| 250  | 0.047            | 473MSR250K     | 110              | 12.5x9x5        | 10     | 0.6    |
| 250  | 0.068            | 683MSR250K     | 110              | 12.5x10x5       | 10     | 0.6    |
| 250  | 0.1              | 104MSR250K     | 110              | 13x10x6.5       | 10     | 0.6    |
| 250  | 0.15             | 154MSR250K     | 110              | 13x13x7         | 10     | 0.6    |
| 250  | 0.22             | 224MSR250K     | 45               | 18x11.5x6       | 15     | 0.8    |
| 250  | 0.33             | 334MSR250K     | 45               | 18.5x12x7       | 15     | 0.8    |
| 250  | 0.47             | 474MSR250K     | 20               | 22.5x12.5x7.5   | 20     | 0.8    |
| 250  | 0.68             | 684MSR250K     | 20               | 22.5x13.5x8.5   | 20     | 0.8    |
| 250  | 1                | 105MSR250K     | 20               | 22.5x15x10      | 20     | 0.8    |
| 250  | 1.5              | 155MSR250K     | 15               | 30x17.5x9.5     | 27.5   | 0.8    |
| 250  | 2.2              | 225MSR250K     | 15               | 30.5x22x12      | 27.5   | 0.8    |
| 400  | 0.01             | 103MSR400K     | 160              | 10.5x9x5.5      | 7.5    | 0.6    |
| 400  | 0.015            | 153MSR400K     | 160              | 10.5x9.5x5.5    | 7.5    | 0.6    |
| 400  | 0.022            | 223MSR400K     | 160              | 13x9.5x6        | 10     | 0.6    |

| WVDC | Capacitance (μF) | IC PART NUMBER | dv/dt (v/μ sec.) | Dims LxHxT (mm) | S (MM) | d (MM) |
|------|------------------|----------------|------------------|-----------------|--------|--------|
| 400  | 0.033            | 333MSR400K     | 160              | 13x10.5x6.5     | 10     | 0.6    |
| 400  | 0.047            | 473MSR400K     | 160              | 13x11x7         | 10     | 0.6    |
| 400  | 0.068            | 683MSR400K     | 65               | 17.5x10x5.5     | 15     | 0.8    |
| 400  | 0.1              | 104MSR400K     | 65               | 18.5x12x7       | 15     | 0.8    |
| 400  | 0.15             | 154MSR400K     | 65               | 18.5x13.5x8     | 15     | 0.8    |
| 400  | 0.22             | 224MSR400K     | 30               | 22.5x14.5x8     | 20     | 0.8    |
| 400  | 0.33             | 334MSR400K     | 30               | 22.5x15x9       | 20     | 0.8    |
| 400  | 0.47             | 474MSR400K     | 30               | 23.5x19x10.5    | 20     | 0.8    |
| 400  | 0.68             | 684MSR400K     | 25               | 32x19x12        | 27.5   | 0.8    |
| 400  | 1                | 105MSR400K     | 25               | 30.5x21x12.5    | 27.5   | 0.8    |
| 630  | 0.01             | 103MSR630K     | 200              | 13x10x6         | 10     | 0.6    |
| 630  | 0.015            | 153MSR630K     | 200              | 13x10.5x6.5     | 10     | 0.6    |
| 630  | 0.022            | 223MSR630K     | 200              | 13x12.5x7.5     | 10     | 0.6    |
| 630  | 0.033            | 333MSR630K     | 90               | 18.5x12x6.5     | 15     | 0.8    |
| 630  | 0.047            | 473MSR630K     | 90               | 18x12.5x7.5     | 15     | 0.6    |
| 630  | 0.068            | 683MSR630K     | 90               | 18.5x14x8.5     | 15     | 0.8    |
| 630  | 0.1              | 104MSR630K     | 90               | 18.5x15.5x10    | 15     | 0.8    |
| 630  | 0.15             | 154MSR630K     | 35               | 22.5x16.5x9.5   | 20     | 0.8    |
| 630  | 0.22             | 224MSR630K     | 35               | 22.5x19x11.5    | 20     | 0.8    |
| 630  | 0.33             | 334MSR630K     | 30               | 32x19x12        | 27.5   | 0.8    |
| 630  | 0.47             | 474MSR630K     | 30               | 32x22x13.5      | 27.5   | 0.8    |
| 630  | 0.68             | 684MSR630K     | 30               | 33x24.5x14      | 27.5   | 0.8    |
| 1000 | 0.01             | 103MSR102K     | 80               | 14x11.5x7       | 10     | 0.6    |
| 1000 | 0.015            | 153MSR102K     | 80               | 14x11.5x8       | 10     | 0.6    |
| 1000 | 0.022            | 223MSR102K     | 40               | 19x12.5x8.5     | 15     | 0.8    |
| 1000 | 0.033            | 333MSR102K     | 40               | 19.5x14x9.5     | 15     | 0.8    |
| 1000 | 0.047            | 473MSR102K     | 33               | 27x14x9         | 22.5   | 0.8    |
| 1000 | 0.068            | 683MSR102K     | 33               | 27x15x10        | 22.5   | 0.8    |
| 1000 | 0.1              | 104MSR102K     | 33               | 27x16.5x11.5    | 22.5   | 0.8    |
| 1000 | 0.22             | 224MSR102K     | 20               | 32.5x22.5x14.5  | 27.5   | 0.8    |
| 1000 | 0.33             | 334MSR102K     | 20               | 32.5x25.5x16    | 27.5   | 0.8    |
| 1000 | 0.47             | 474MSR102K     | 20               | 32.5x26.5x18.5  | 27.5   | 0.8    |