



- Bypass
- Coupling

- Filtering
- Blocking

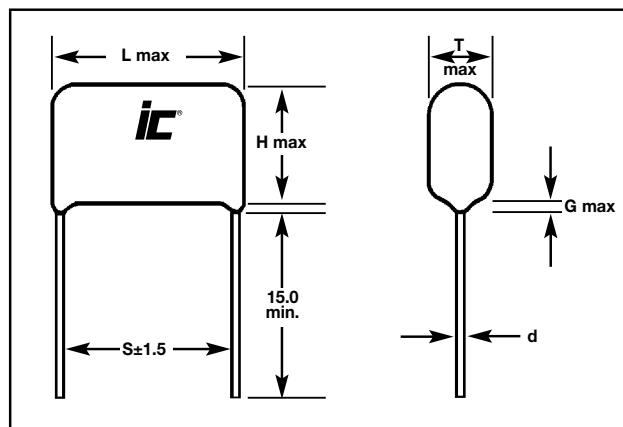
|                                                                   |     |                                                                    |                                |                       |     |      |
|-------------------------------------------------------------------|-----|--------------------------------------------------------------------|--------------------------------|-----------------------|-----|------|
| Operating Temperature Range                                       |     | -55°C to +125°C                                                    |                                |                       |     |      |
| Capacitance Tolerance                                             |     | ±10% at 1kHz, 20°C                                                 |                                |                       |     |      |
| Rated Voltage                                                     | VDC | 100                                                                | 250                            | 400                   | 630 | 1000 |
|                                                                   | VAC | 63                                                                 | 150                            | 200                   | 220 | 250  |
|                                                                   |     | For T> +85°C the applied voltage must be decreased by 1.25% per °C |                                |                       |     |      |
| Dissipation Factor<br>(max) at 20°C                               |     | Freq. (kHz)                                                        |                                |                       |     |      |
|                                                                   |     | 1                                                                  | 1.0%                           |                       |     |      |
|                                                                   |     | 10                                                                 | 1.5%                           |                       |     |      |
| Insulation Resistance<br>@20°C(<70% RH) for<br>1 minute at 100VDC |     | WVDC                                                               | Capacitance                    | Insulation Resistance |     |      |
|                                                                   |     | ≤100                                                               | ≤0.33 μF                       | 15,000 MΩ             |     |      |
|                                                                   |     | ≥100                                                               | >0.33 μF                       | 30,000 MΩ             |     |      |
|                                                                   |     | ≤100                                                               | ≤0.33 μF                       | 5000 MΩ x μF          |     |      |
|                                                                   |     | >100                                                               | >0.33 μF                       | 10,000 MΩ x μF        |     |      |
| Load Life Test                                                    |     | 2,000 hours at 125% of rated VDC and at 85°C                       |                                |                       |     |      |
|                                                                   |     | Capacitance Change                                                 | ≤5% change from initial value. |                       |     |      |
|                                                                   |     | Dissipation Factor                                                 | ≤0.005 at 1kHz and 25°C        |                       |     |      |
|                                                                   |     | Insulation Resistance                                              | ≥50%of minimum specification   |                       |     |      |
| Damp Heat Test                                                    |     | 1000 hours at +40°C±2°C with 93% ±2%relative humidity              |                                |                       |     |      |
|                                                                   |     | Capacitance Change                                                 | ≤5% change from initial value. |                       |     |      |
|                                                                   |     | Dissipation Factor                                                 | ≤0.005 at 1kHz and 25°C        |                       |     |      |
|                                                                   |     | Insulation Resistance                                              | ≥50%of minimum specification   |                       |     |      |
| Self-inductance                                                   |     | ≤1 nH/mm along the capacitor pitch and lead wire length.           |                                |                       |     |      |
| Capacitance Drift Factor                                          |     | ≤1.0% up to 40°C after 2 years                                     |                                |                       |     |      |
| Temperature Coefficient                                           |     | +400 ppm/°C, ± 200ppm/°C                                           |                                |                       |     |      |
| Dielectric                                                        |     | Polyester                                                          |                                |                       |     |      |
| Electrodes                                                        |     | Vacuum deposited metal layers                                      |                                |                       |     |      |
| Construction                                                      |     | Extended metallized carrier film                                   |                                |                       |     |      |
| Leads                                                             |     | Tinned copper wire                                                 |                                |                       |     |      |
| Coating                                                           |     | Flame retardant epoxy sealed resin<br>(UL 94V-O)                   |                                |                       |     |      |

## PHYSICAL DIMENSIONS

| WVDC<br>(VAC)<br>μF | 100<br>(63)    | 250<br>(160)  | 400<br>(200)  | 630<br>(220)  | 1000<br>(250)  |
|---------------------|----------------|---------------|---------------|---------------|----------------|
| 0.01                |                |               | 10x9x5        | 12.5x10x5     | 14x11.5x8      |
| 0.015               |                | 10x9x5        | 10x9.5x5.5    | 12.5x10.5x6   | 14x11.5x8      |
| 0.022               |                | 10x9x5        | 12.5x9x5      | 12.5x12x7     | 19x12.5x8.5    |
| 0.033               |                | 10x9.5x5.5    | 12.5x10.5x5.5 | 17.5x11.5x6.5 | 19.5x14x9.5    |
| 0.047               | 10x8.5x5       | 12.5x9x5      | 12.5x11x6.5   | 17.5x12.5x7.5 | 27x14x9        |
| 0.068               | 10x8x4.5       | 12.5x10x5     | 17.5x10x5.5   | 17.5x14x8     | 27x15x10       |
| 0.10                | 12.5x8.5x5.5   | 12.5x11x6     | 17.5x11.5x6.5 | 17.5x15.5x10  | 27x16.5x11.5   |
| 0.15                | 12.5x9x5       | 13x13x7       | 17.5x12.5x7.5 | 22.5x16.5x9   |                |
| 0.22                | 12.5x10x5.5    | 17.5x11x6.5   | 22.5x14.5x7.5 | 22.5x19x11    | 32.5x22.5x14.5 |
| 0.33                | 17.5x10x5.5    | 17.5x12.5x7   | 22.5x16x9     | 30x18.5x11    | 32.5x25.5x16   |
| 0.47                | 17.5x11x6.5    | 22.5x12.5x7.5 | 22.5x19.5x10  | 30x22x12.5    | 32.5x26.5x18.5 |
| 0.68                | 17.5x12.5x7.5  | 22.5x14.5x8.5 | 30x18x10      | 33x24.5x14    |                |
| 1.0                 | 18x14x8        | 22.5x17x9.5   | 30x20.5x12    |               |                |
| 1.5                 | 22.5x14.5x8.5  | 30x18x9.5     |               |               |                |
| 2.2                 | 22.5x16.5x10.5 | 30x21.5x11.5  |               |               |                |
| 3.3                 | 22.5x21x11.5   |               |               |               |                |
| 4.7                 | 30x20.5x11     |               |               |               |                |
| 6.8                 | 30x22.5x12.5   |               |               |               |                |
| 10.0                | 32x28x17       |               |               |               |                |

Convert to inches, divide by 25.4

LxHxT (mm)



| L | ≤10 | 10 < L ≤ 14 | 14 < L ≤ 17.5 | 17.5 < L ≤ 19 | 19 < L ≤ 22.5 | 22.5 < L < 30 | L ≥ 30 |
|---|-----|-------------|---------------|---------------|---------------|---------------|--------|
| S | 7.5 | 10          | 15            | 15            | 20            | 22.5          | 27.5   |
| d | 0.6 | 0.6         | 0.6           | 0.8           | 0.8           | 0.8           | 0.8    |
| G | 1.0 | 1.0         | 1.0           | 1.0           | 2.0           | 2.0           | 2.0    |

## STANDARD PART LISTING

| Capacitance<br>( $\mu$ F) | WVDC | ic PART<br>NUMBER | dv/dt<br>(v/ $\mu$ sec.) | Dimensions<br>L x H x T<br>(mm) |
|---------------------------|------|-------------------|--------------------------|---------------------------------|
| 0.01                      | 400  | 103MSR400K        | 160                      | 10x9x5                          |
| 0.01                      | 630  | 103MSR630K        | 200                      | 12.5x10x5                       |
| 0.01                      | 1000 | 103MSR102K        | 80                       | 14x11.5x7                       |
| 0.015                     | 250  | 153MSR250K        | 110                      | 10x9x5                          |
| 0.015                     | 400  | 153MSR400K        | 160                      | 10x9.5x5.5                      |
| 0.015                     | 630  | 153MSR630K        | 200                      | 12.5x10.5x6                     |
| 0.015                     | 1000 | 153MSR102K        | 80                       | 14x11.5x8                       |
| 0.022                     | 250  | 223MSR250K        | 110                      | 10x9x5                          |
| 0.022                     | 400  | 223MSR400K        | 160                      | 12.5x9x5                        |
| 0.022                     | 630  | 223MSR630K        | 200                      | 12.5x12x7                       |
| 0.022                     | 1000 | 223MSR102K        | 40                       | 19x12.5x8.5                     |
| 0.033                     | 250  | 333MSR250K        | 110                      | 10x9.5x5.5                      |
| 0.033                     | 400  | 333MSR400K        | 160                      | 12.5x10.5x5.5                   |
| 0.033                     | 630  | 333MSR630K        | 90                       | 17.5x11.5x6.5                   |
| 0.033                     | 1000 | 333MSR102K        | 40                       | 19.5x14x9.5                     |
| 0.047                     | 100  | 473MSR100K        | 35                       | 10x8.5x5                        |
| 0.047                     | 250  | 473MSR250K        | 110                      | 12.5x9x5                        |
| 0.047                     | 400  | 473MSR400K        | 160                      | 12.5x11x6.5                     |
| 0.047                     | 630  | 473MSR630K        | 90                       | 17.5x12.5x7.5                   |
| 0.047                     | 1000 | 473MSR102K        | 33                       | 27x14x9                         |
| 0.068                     | 100  | 683MSR100K        | 35                       | 10x8x4.5                        |
| 0.068                     | 250  | 683MSR250K        | 110                      | 12.5x10x5                       |
| 0.068                     | 400  | 683MSR400K        | 160                      | 17.5x10x5.5                     |
| 0.068                     | 630  | 683MSR630K        | 90                       | 17.5x14x8                       |
| 0.068                     | 1000 | 683MSR102K        | 33                       | 27x15x10                        |
| 0.10                      | 100  | 104MSR100K        | 30                       | 12.5x8.5x5.5                    |
| 0.10                      | 250  | 104MSR250K        | 110                      | 12.5x11x6                       |
| 0.10                      | 400  | 104MSR400K        | 65                       | 17.5x11.5x6.5                   |
| 0.10                      | 630  | 104MSR630K        | 90                       | 17.5x15.5x10                    |
| 0.10                      | 1000 | 104MSR102K        | 33                       | 27x16.5x11.5                    |
| 0.15                      | 100  | 154MSR100K        | 30                       | 12.5x9x5                        |
| 0.15                      | 250  | 154MSR250K        | 110                      | 13x13x7                         |

| Capacitance<br>( $\mu$ F) | WVDC | ic PART<br>NUMBER | dv/dt<br>(v/ $\mu$ sec.) | Dimensions<br>L x H x T<br>(mm) |
|---------------------------|------|-------------------|--------------------------|---------------------------------|
| 0.15                      | 400  | 154MSR400K        | 65                       | 17.5x12.5x7.5                   |
| 0.15                      | 630  | 154MSR630K        | 35                       | 22.5x16.5x9                     |
| 0.22                      | 100  | 224MSR100K        | 30                       | 12.5x10x5.5                     |
| 0.22                      | 250  | 224MSR250K        | 45                       | 17.5x11x6.5                     |
| 0.22                      | 400  | 224MSR400K        | 30                       | 22.5x14.5x7.5                   |
| 0.22                      | 630  | 224MSR630K        | 35                       | 22.5x19x11                      |
| 0.22                      | 1000 | 224MSR102K        | 20                       | 32.5x22.5x14.5                  |
| 0.33                      | 100  | 334MSR100K        | 20                       | 17.5x10x5.5                     |
| 0.33                      | 250  | 334MSR250K        | 45                       | 17.5x12.5x7                     |
| 0.33                      | 400  | 334MSR400K        | 30                       | 22.5x16x9                       |
| 0.33                      | 630  | 334MSR630K        | 30                       | 30x18.5x11                      |
| 0.33                      | 1000 | 334MSR102K        | 20                       | 32.5x25.5x16                    |
| 0.47                      | 100  | 474MSR100K        | 20                       | 17.5x11x6.5                     |
| 0.47                      | 250  | 474MSR250K        | 20                       | 22.5x12.5x7.5                   |
| 0.47                      | 400  | 474MSR400K        | 30                       | 22.5x19.5x10                    |
| 0.47                      | 630  | 474MSR630K        | 30                       | 30x22x12.5                      |
| 0.47                      | 1000 | 474MSR102K        | 20                       | 32.5x26.5x18.5                  |
| 0.68                      | 100  | 684MSR100K        | 20                       | 17.5x12.5x7.5                   |
| 0.68                      | 250  | 684MSR250K        | 20                       | 22.5x14.5x8.5                   |
| 0.68                      | 400  | 684MSR400K        | 25                       | 30x18x10                        |
| 0.68                      | 630  | 684MSR630K        | 30                       | 33x24.5x14                      |
| 1.0                       | 100  | 105MSR100K        | 20                       | 18x14x8                         |
| 1.0                       | 250  | 105MSR250K        | 20                       | 22.5x17x9.5                     |
| 1.0                       | 400  | 105MSR400K        | 25                       | 30x20.5x12                      |
| 1.5                       | 100  | 155MSR100K        | 10                       | 22.5x14.5x8.5                   |
| 1.5                       | 250  | 155MSR250K        | 15                       | 30x18x9.5                       |
| 2.2                       | 100  | 225MSR100K        | 10                       | 22.5x16.5x10.5                  |
| 2.2                       | 250  | 225MSR250K        | 15                       | 30x21.5x11.5                    |
| 3.3                       | 100  | 335MSR100K        | 10                       | 22.5x21x11.5                    |
| 4.7                       | 100  | 475MSR100K        | 5                        | 30x20.5x11                      |
| 6.8                       | 100  | 685MSR100K        | 5                        | 30x22.5x12.5                    |
| 10.0                      | 100  | 106MSR100K        | 5                        | 32x28x17                        |

NOTE: WVDC: = MAXIMUM RATED WORKING VOLTAGE @ +85°C.

