



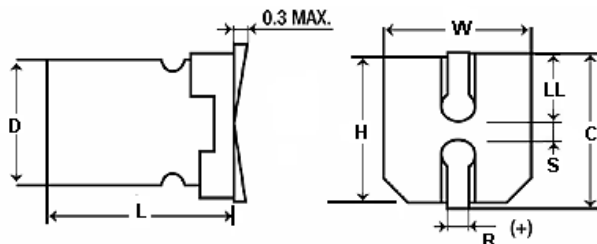
#### FEATURES

Small size – Extended Life – Low cost

#### APPLICATIONS

Filtering – Bypass – Coupling – Blocking

| Operating Temperature Range                              |                | -55°C to +105°C                                                                                                                                                                      |     |                                  |     |     |                  |     |     |     |  |
|----------------------------------------------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----------------------------------|-----|-----|------------------|-----|-----|-----|--|
| Capacitance Tolerance                                    |                | +20% at 120 Hz, 20°C                                                                                                                                                                 |     |                                  |     |     |                  |     |     |     |  |
| Surge voltage                                            | WVDC           | 6.3                                                                                                                                                                                  | 10  | 16                               | 25  | 35  | 50               |     |     |     |  |
|                                                          | SVDC           | 7.9                                                                                                                                                                                  | 13  | 20                               | 32  | 44  | 63               |     |     |     |  |
| Dissipation Factor                                       | WVDC           | 6.3                                                                                                                                                                                  | 10  | 16                               | 25  | 35  | 50               |     |     |     |  |
|                                                          | tan δ          | .3                                                                                                                                                                                   | .22 | .18                              | .14 | .12 | .12              |     |     |     |  |
| Leakage current                                          |                | 2 Minutes                                                                                                                                                                            |     |                                  |     |     |                  |     |     |     |  |
|                                                          |                | .01CV or 3uA, Whichever is greater                                                                                                                                                   |     |                                  |     |     |                  |     |     |     |  |
| Low temperature stability<br>Impedance ratio<br>(120 Hz) | Rated WVDC     | 6.3                                                                                                                                                                                  | 10  | 16                               | 25  | 35  | 50               |     |     |     |  |
|                                                          | -25°C to +20°C | 4                                                                                                                                                                                    | 3   | 2                                | 2   | 2   | 2                |     |     |     |  |
|                                                          | -40°C to +20°C | 8                                                                                                                                                                                    | 6   | 4                                | 4   | 3   | 3                |     |     |     |  |
| Load Life                                                |                | 1000 hours at 105°C with rated WVDC and ripple current applied                                                                                                                       |     |                                  |     |     |                  |     |     |     |  |
|                                                          |                | Capacitance change                                                                                                                                                                   |     | <25% of initial measured value   |     |     |                  |     |     |     |  |
|                                                          |                | Dissipation factor                                                                                                                                                                   |     | <200% of maximum specified value |     |     |                  |     |     |     |  |
|                                                          |                | Leakage current                                                                                                                                                                      |     | >100% of maximum specified value |     |     |                  |     |     |     |  |
| Shelf Life                                               |                | 1000 hours at 85°C with no voltage applied                                                                                                                                           |     |                                  |     |     |                  |     |     |     |  |
|                                                          |                | Capacitance change                                                                                                                                                                   |     | <25% of initial measured value   |     |     |                  |     |     |     |  |
|                                                          |                | Dissipation factor                                                                                                                                                                   |     | <200% of maximum specified value |     |     |                  |     |     |     |  |
|                                                          |                | Leakage current                                                                                                                                                                      |     | >100% of maximum specified value |     |     |                  |     |     |     |  |
| Resistance to soldering heat                             |                | Capacitors placed on a 250°C hot plate for 30 seconds with their electrode terminations facing downward will fulfill the following conditions after being cooled to room temperature |     |                                  |     |     |                  |     |     |     |  |
|                                                          |                | Capacitance change                                                                                                                                                                   |     | <10% of initial measured value   |     |     |                  |     |     |     |  |
|                                                          |                | Dissipation factor                                                                                                                                                                   |     | <100% of maximum specified value |     |     |                  |     |     |     |  |
|                                                          |                | Leakage current                                                                                                                                                                      |     | >100% of maximum specified value |     |     |                  |     |     |     |  |
| Ripple Current Multipliers                               |                | Frequency (Hz)                                                                                                                                                                       |     |                                  |     |     | Temperature (°C) |     |     |     |  |
|                                                          |                | 50                                                                                                                                                                                   | 120 | 400                              | 1k  | 10k | 100k             | 105 | 85  | 70  |  |
|                                                          |                | 0.8                                                                                                                                                                                  | 1.0 | 1.0                              | 1.1 | 1.3 | 1.5              | 1.0 | 1.7 | 2.0 |  |



| D   | L             | W±0.2 | H±0.2 | C±0.2 | R       | LL±0.2 | S±0.2 |
|-----|---------------|-------|-------|-------|---------|--------|-------|
| 4   | 5.4 +0.1/-0.2 | 4.3   | 4.3   | 5.0   | 0.5-0.8 | 1.8    | 1.0   |
| 5   | 5.4 +0.1/-0.2 | 5.3   | 5.3   | 6.0   | 0.5-0.8 | 2.1    | 1.4   |
| 6.3 | 5.4 +0.1/-0.2 | 6.6   | 6.6   | 7.3   | 0.5-0.8 | 2.4    | 2.2   |
| 6.3 | 5.8 +0.1/-0.2 | 6.6   | 6.6   | 7.3   | 0.5-0.8 | 2.4    | 2.2   |
| 6.3 | 7.7 +0.1/-0.2 | 6.6   | 6.6   | 7.3   | 0.5-0.8 | 2.4    | 2.2   |
| 8   | 6.2 +0.1/-0.2 | 8.3   | 8.3   | 9.0   | 0.7-1.0 | 2.9    | 3.2   |
| 8   | 10.2+0.1/-0.2 | 8.3   | 8.3   | 9.0   | 0.7-1.0 | 2.9    | 3.2   |
| 10  | 10.2+0.1/-0.2 | 10    | 10    | 11.0  | 0.7-1.0 | 3.2    | 4.6   |

# SMH

**+105°C, General Purpose  
1000 hours**

| Capacitance<br>( $\mu$ F) | WVDC | IC PART NUMBER | Maximum<br>ESR ( $\Omega$ )<br>120 Hz,<br>+20°C | Maximum<br>RMS Ripple<br>Current<br>(mA)<br>120 Hz,<br>+105°C | Dims D $\times$ L<br>(mm) |
|---------------------------|------|----------------|-------------------------------------------------|---------------------------------------------------------------|---------------------------|
| 0.1                       | 50   | 104SMH050M     | 1989.44                                         | 2.3                                                           | 4x5.4                     |
| 0.22                      | 50   | 224SMH050M     | 904.29                                          | 3.4                                                           | 4x5.4                     |
| 0.33                      | 50   | 334SMH050M     | 602.86                                          | 4.1                                                           | 4x5.4                     |
| 0.47                      | 50   | 474SMH050M     | 423.28                                          | 5                                                             | 4x5.4                     |
| 1                         | 50   | 105SMH050M     | 198.94                                          | 10                                                            | 4x5.4                     |
| 2.2                       | 50   | 225SMH050M     | 90.43                                           | 16                                                            | 4x5.4                     |
| 3.3                       | 50   | 335SMH050M     | 60.286                                          | 16                                                            | 4x5.4                     |
| 4.7                       | 35   | 475SMH035M     | 49.383                                          | 22                                                            | 4x5.4                     |
| 4.7                       | 50   | 475SMH050M     | 42.33                                           | 23                                                            | 5x5.4                     |
| 10                        | 16   | 106SMH016M     | 33.157                                          | 18                                                            | 4x5.4                     |
| 10                        | 35   | 106SMH035M     | 23.21                                           | 30                                                            | 5x5.4                     |
| 10                        | 50   | 106SMH050M     | 19.894                                          | 32                                                            | 6.3x5.4                   |
| 22                        | 6.3  | 226SMH6R3M     | 21.1                                            | 22                                                            | 4x5.4                     |
| 22                        | 16   | 226SMH016M     | 15.07                                           | 39                                                            | 5x5.4                     |
| 22                        | 35   | 226SMH035M     | 10.55                                           | 38                                                            | 6.3x5.4                   |
| 22                        | 50   | 226SMH050M     | 9.04                                            | 51                                                            | 6.3x5.8                   |
| 33                        | 10   | 336SMH010M     | 12.06                                           | 34                                                            | 5x5.4                     |
| 33                        | 16   | 336SMH016M     | 33.158                                          | 35                                                            | 5x5.4                     |
| 33                        | 25   | 336SMH025M     | 8.038                                           | 65                                                            | 6.3x5.4                   |
| 33                        | 35   | 336SMH035M     | 7.033                                           | 42                                                            | 6.3x5.4                   |
| 33                        | 35   | 336SMH035MFT   | 23.211                                          | 84                                                            | 8x6.5                     |
| 33                        | 50   | 336SMH050M     | 6.03                                            | 70                                                            | 6.3x7.7                   |
| 47                        | 6.3  | 476SMH6R3M     | 9.877                                           | 46                                                            | 5x5.4                     |
| 47                        | 16   | 476SMH016M     | 7.055                                           | 70                                                            | 6.3x5.4                   |
| 47                        | 35   | 476SMH035M     | 4.938                                           | 80                                                            | 6.3x6                     |
| 47                        | 50   | 476SMH050M     | 4.23                                            | 80                                                            | 6.3x7.7                   |
| 100                       | 6.3  | 107SMH6R3M     | 4.642                                           | 71                                                            | 6.3x5.4                   |
| 100                       | 16   | 107SMH016M     | 3.3157                                          | 80                                                            | 6.3x5.4                   |
| 100                       | 25   | 107SMH025M     | 2.653                                           | 91                                                            | 6.3x7.7                   |
| 100                       | 50   | 107SMH050M     | 1.989                                           | 230                                                           | 8x10.5                    |
| 150                       | 10   | 157SMH010M     | 2.653                                           | 86                                                            | 6.3x6                     |
| 150                       | 16   | 157SMH016M     | 2.21                                            | 95                                                            | 6.3x7.7                   |
| 220                       | 16   | 227SMH016M     | 1.507                                           | 120                                                           | 6.3x7.7                   |
| 220                       | 25   | 227SMH025ML10  | 1.2057                                          | 180                                                           | 10x10.5                   |
| 220                       | 25   | 227SMH025MFE   | 1.2057                                          | 320                                                           | 8x10.5                    |
| 220                       | 35   | 227SMH035M     | 1.06                                            | 190                                                           | 8x10.5                    |
| 220                       | 50   | 227SMH050M     | 0.904                                           | 220                                                           | 10x10.5                   |
| 330                       | 6.3  | 337SMH6R3M     | 1.407                                           | 290                                                           | 6.3x7.7                   |
| 330                       | 16   | 337SMH016ML10  | 1.005                                           | 195                                                           | 10x10.5                   |
| 330                       | 25   | 337SMH025M     | 0.8038                                          | 220                                                           | 8x10.5                    |
| 330                       | 35   | 337SMH035M     | 0.704                                           | 300                                                           | 10x10.5                   |
| 470                       | 16   | 477SMH016M     | 0.7055                                          | 340                                                           | 8x10.5                    |
| 470                       | 25   | 477SMH025M     | 0.5644                                          | 490                                                           | 10x10.5                   |
| 680                       | 16   | 687SMH016M     | 0.488                                           | 310                                                           | 10x10.5                   |
| 1000                      | 6.3  | 108SMH6R3M     | 0.4642                                          | 230                                                           | 8x10.5                    |
| 1500                      | 6.3  | 158SMH6R3M     | 0.31                                            | 310                                                           | 10x10.5                   |