

SEPC is designed to have even lower ESR than the SEP series. Suitable for use on computer and peripheral products such as motherboards, servers and VGAs. Lead free-flow is supported.\*2



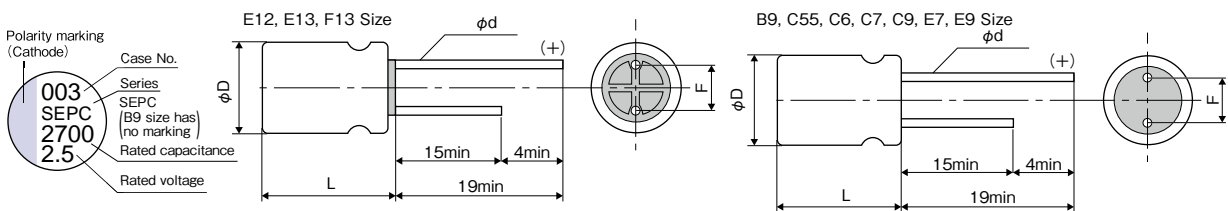
## Specifications

| Items  |   | Condition                              |                     | Specifications                                      |     |     |    |    |
|--|---|--|---------------------|---|-----|-----|----|----|
| Rated voltage  | (V)                                     | -                                      |                     | 2.5   | 4.0 | 6.3 | 10 | 16 |
| Surge voltage  | (V)                                     | Room temperature                       |                     | 3.3   | 5.2 | 8.2 | 12 | 18 |
| Category temperature range                                     | (°C)                                    | -                                      |                     | -55 to +105   |     |     |    |    |
| Capacitance tolerance  | (%)                                     | 120Hz/20°C                             |                     | M : ±20   |     |     |    |    |
| Dissipation Factor (DF)  |   | 120Hz/20°C                             |                     | Please see the attached characteristics list        |     |     |    |    |
| Leakage current*1  |   | Rated voltage applied, after 2 minutes |                     | Please see the attached characteristics list        |     |     |    |    |
| Equivalent series resistance (ESR)                             |   | 100kHz to 300kHz/20°C                  |                     | Please see the attached characteristics list        |     |     |    |    |
| Characteristics of impedance ratio at high temp. and low temp. | Based the value at 100kHz, +20°C        | -55°C                                  | Z/Z <sub>20°C</sub> | 0.75 to 1.25  |     |     |    |    |
|  |   | +105°C                                 | Z/Z <sub>20°C</sub> | 0.75 to 1.25  |     |     |    |    |
| Endurance  | 105°C, 5,000h, Rated voltage applied    | ΔC/C                                   |                     | Within ±20% of the initial value                    |     |     |    |    |
|  |   | DF                                     |                     | Within 1.5 times of the initial limit               |     |     |    |    |
|  |   | ESR                                    |                     | Within 1.5 times of the initial limit               |     |     |    |    |
|  |   | LC                                     |                     | Within the initial limit                            |     |     |    |    |
| Damp heat(Steady state)  | 60°C, 90%RH, 1,000h, No-applied voltage | ΔC/C                                   |                     | Within ±20% of the initial value                    |     |     |    |    |
|  |   | DF                                     |                     | Within 1.5 times of the initial limit               |     |     |    |    |
|  |   | ESR                                    |                     | Within 1.5 times of the initial limit               |     |     |    |    |
|  |   | LC                                     |                     | Within the initial limit (after voltage processing) |     |     |    |    |
| Resistance to soldering heat*2                                 | Flow method (260±5°C X 10s)             | ΔC/C                                   |                     | Within ±5% of the initial value                     |     |     |    |    |
|  |   | DF                                     |                     | Within the initial limit                            |     |     |    |    |
|  |   | ESR                                    |                     | Within the initial limit                            |     |     |    |    |
|  |   | LC                                     |                     | Within the initial limit (after voltage processing) |     |     |    |    |

\*1 In case of some problems for measured values, measure after applying rated voltage for 120 minutes at 105°C.

\*2 Please refer to page 26 for flow soldering conditions.

## Marking and dimensions



B9, C55, C6, C7, C9, E7, E9 size flat rubber is used.

## Size list

RV : Rated voltage

(unit : mm)

| μF \ RV | 2.5             | 4.0         | 6.3             | 10 | 16      |
|---------|-----------------|-------------|-----------------|----|---------|
| 100     | B9              |             |                 |    | C6, C9  |
| 150     |                 |             |                 |    | E7      |
| 180     |                 |             |                 |    | E9, E12 |
| 220     |                 |             | C55             |    | E7      |
| 270     |                 |             |                 | E7 | E9, E12 |
| 330     | B9, C9          |             |                 |    |         |
| 390     | C6              |             |                 |    |         |
| 470     | B9              |             | C7, C9, E9, E13 |    | F13     |
| 560     | B9, C6, C9, E9  | C9, E9, E13 | C9, E9          |    |         |
| 680     |                 | E13         | F13             |    |         |
| 820     | C9, E7, E9, E13 | F13         |                 |    |         |
| 1,000   | E9              |             |                 |    |         |
| 1,500   |                 |             | F13             |    |         |
| 2,700   | F13             |             |                 |    |         |

| Size code | φD ±0.5 | L max | F       | φd ±0.05 |
|-----------|---------|-------|---------|----------|
| B9        | 5.0     | 9.0   | 2.0±0.5 | 0.6      |
| C55       | 6.3     | 5.5   | 2.5±0.5 | 0.45     |
| C6        | 6.3     | 6.0   | 2.5±0.5 | 0.45*3   |
| C7        | 6.3     | 7.0   | 2.5±0.5 | 0.6      |
| C9        | 6.3     | 9.0   | 2.5±0.5 | 0.6*4    |
| E7        | 8.0     | 7.0   | 3.5±0.5 | 0.6      |
| E9        | 8.0     | 9.0   | 3.5±0.5 | 0.6      |
| E12       | 8.0     | 12.0  | 3.5±0.5 | 0.6      |
| E13       | 8.0     | 13.0  | 3.5±0.5 | 0.6      |
| F13       | 10.0    | 13.0  | 5.0±0.5 | 0.6      |

\*3 2SEPC390M : 0.5±0.05

\*4 16SEPC150MD, 10SEPC270MD : 0.45±0.05

## ● SEPC series characteristics list

| Size code   | Part number       | Rated voltage (V) | Rated capacitance (μF) | ESR (mΩ) (max) 100kHz to 300kHz/20°C | Rated ripple current 100kHz (mA rms) at 105°C | DF (% max) | Leakage current (μA)(max) After 2 minutes |
|-------------|-------------------|-------------------|------------------------|--------------------------------------|---|------------|---|
| B9          | 2SEPC100MZ        | 2.5               | 100                    | 7                                    | 4180  | 10         | 500                                       |
|             | 2SEPC330MZ        | 2.5               | 330                    | 7                                    | 4180  | 10         | 500                                       |
|             | 2SEPC470MZ        | 2.5               | 470                    | 7                                    | 4180  | 10         | 500                                       |
|             | 2SEPC560MZ        | 2.5               | 560                    | 7                                    | 4180  | 10         | 500                                       |
| C55         | 6SEPC220M         | 6.3               | 220                    | 18                                   | 2980  | 12         | 280                                       |
| C6          | 16SEPC100M        | 16                | 100                    | 24                                   | 2490  | 10         | 320                                       |
|             | 2SEPC390M         | 2.5               | 390                    | 10                                   | 3900  | 12         | 500                                       |
|             | <b>2SEPC560M</b>  | 2.5               | 560                    | 10                                   | 3900  | 12         | 500                                       |
| C7          | <b>6SEPC470ME</b> | 6.3               | 470                    | 20                                   | 2970  | 10         | 592                                       |
| C9          | 16SEPC100MW       | 16                | 100                    | 10                                   | 4680  | 10         | 500                                       |
|             | 6SEPC470MW        | 6.3               | 470                    | 7                                    | 5600  | 10         | 592                                       |
|             | 6SEPC560MW        | 6.3               | 560                    | 7                                    | 5600  | 10         | 705                                       |
|             | 4SEPC560MW        | 4.0               | 560                    | 7                                    | 5600  | 10         | 500                                       |
|             | 2SEPC330MW        | 2.5               | 330                    | 7                                    | 5600  | 10         | 500                                       |
|             | 2SEPC560MW        | 2.5               | 560                    | 7                                    | 5600  | 10         | 500                                       |
|             | 2SEPC820MW        | 2.5               | 820                    | 7                                    | 5600  | 10         | 500                                       |
| E7          | 16SEPC150MD       | 16                | 150                    | 22                                   | 3220  | 12         | 500                                       |
|             | 16SEPC220MD       | 16                | 220                    | 13                                   | 4150  | 10         | 500                                       |
|             | 10SEPC270MD       | 10                | 270                    | 22                                   | 3220  | 12         | 500                                       |
|             | 2SEPC820MD        | 2.5               | 820                    | 8                                    | 5300  | 10         | 500                                       |
| E9          | 16SEPC180MX       | 16                | 180                    | 10                                   | 5000  | 10         | 576                                       |
|             | 16SEPC270MX       | 16                | 270                    | 10                                   | 5000  | 10         | 864                                       |
|             | 6SEPC470MX        | 6.3               | 470                    | 8                                    | 5700  | 10         | 592                                       |
|             | 6SEPC560MX        | 6.3               | 560                    | 7                                    | 6100  | 10         | 705                                       |
|             | 4SEPC560MX        | 4.0               | 560                    | 7                                    | 6100  | 10         | 500                                       |
|             | 2SEPC560MX        | 2.5               | 560                    | 8                                    | 4700  | 10         | 280                                       |
|             | 2SEPC820MX        | 2.5               | 820                    | 7                                    | 6100  | 10         | 500                                       |
|             | 2SEPC820MY        | 2.5               | 820                    | 5                                    | 7200  | 10         | 500                                       |
| 2SEPC1000MX | 2.5               | 1000              | 7                      | 6100                                 | 10  | 500        |   |
| E12         | 16SEPC180M        | 16                | 180                    | 16                                   | 4360  | 10         | 576                                       |
|             | 16SEPC270M        | 16                | 270                    | 11                                   | 5000  | 10         | 864                                       |
| E13         | 6SEPC470M         | 6.3               | 470                    | 8                                    | 5700  | 10         | 592                                       |
|             | 4SEPC560M         | 4.0               | 560                    | 7                                    | 6100  | 10         | 500                                       |
|             | 4SEPC680M         | 4.0               | 680                    | 7                                    | 6100  | 10         | 544                                       |
|             | 2R5SEPC820M       | 2.5               | 820                    | 7                                    | 6100  | 10         | 500                                       |
| F13         | 16SEPC470M        | 16                | 470                    | 10                                   | 6100  | 10         | 1504                                      |
|             | 6SEPC680M         | 6.3               | 680                    | 7                                    | 6640  | 10         | 857                                       |
|             | 6SEPC1500M        | 6.3               | 1500                   | 10                                   | 5560  | 10         | 1890                                      |
|             | 4SEPC820M         | 4.0               | 820                    | 7                                    | 6640  | 10         | 656                                       |
|             | 2SEPC2700M        | 2.5               | 2700                   | 10                                   | 5560  | 10         | 1350                                      |

## ● Frequency coefficient for ripple current

| Frequency   | 120Hz ≤ f < 1kHz | 1kHz ≤ f < 10kHz | 10kHz ≤ f < 100kHz | 100kHz ≤ f ≤ 500kHz |
|-------------|------------------|------------------|--------------------|---------------------|
| Coefficient | 0.05             | 0.3              | 0.7                | 1                   |

※ Red letters : New models