



## • Specifications

| Items                        | Characteristics                                                                                                                      |                                      |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| Temperature range            | -55 to +105°C                                                                                                                        |                                      |
| Rated voltage range          | 16 to 50Vdc                                                                                                                          |                                      |
| Capacitance range            | 10 to 3,300μF                                                                                                                        |                                      |
| Capacitance tolerance        | ±20% [M] (at 20°C, 120Hz)                                                                                                            |                                      |
| Tangent of loss angle        | Less than or equal to the value of Standard Ratings (at 20°C, 120Hz)                                                                 |                                      |
| Leakage current              | Less than or equal to the value of Standard Ratings (at 20°C, after 2 minutes)                                                       |                                      |
| ESR                          | Less than or equal to the value of Standard Ratings                                                                                  |                                      |
| Characteristics of impedance | $Z_{+105^{\circ}\text{C}}/Z_{+20^{\circ}\text{C}} \leq 1.25$ , $Z_{-55^{\circ}\text{C}}/Z_{+20^{\circ}\text{C}} \leq 1.25$ at 100kHz |                                      |
| Endurance                    | 105°C, 5,000 hrs at rated voltage                                                                                                    |                                      |
|                              | Appearance                                                                                                                           | No significant damage                |
|                              | Capacitance change                                                                                                                   | Within±20% of the initial value      |
|                              | Tangent of loss angle (tanδ)                                                                                                         | ≤150% of the initial specified value |
|                              | ESR(mΩ)                                                                                                                              | ≤150% of the initial specified value |
|                              | Leakage current                                                                                                                      | ≤The initial specified value         |
| Damp Heat (Steady State)     | 60°C, 90 to 95% RH, 1,000 hrs, No-applied Voltage                                                                                    |                                      |
|                              | Appearance                                                                                                                           | No significant damage                |
|                              | Capacitance change                                                                                                                   | Within±20% of the initial value      |
|                              | Tangent of loss angle (tanδ)                                                                                                         | ≤150% of the initial specified value |
|                              | ESR(mΩ)                                                                                                                              | ≤150% of the initial specified value |
|                              | Leakage current                                                                                                                      | ≤The initial specified value         |
| Resistance to soldering heat | Flow method (260±5°C, 10s)                                                                                                           |                                      |
|                              | Appearance                                                                                                                           | No significant damage                |
|                              | Capacitance change                                                                                                                   | Within±10% of the initial value      |
|                              | Tangent of loss angle (tanδ)                                                                                                         | ≤130% of the initial specified value |
|                              | ESR(mΩ)                                                                                                                              | ≤130% of the initial specified value |
|                              | Leakage current                                                                                                                      | ≤The initial specified value         |

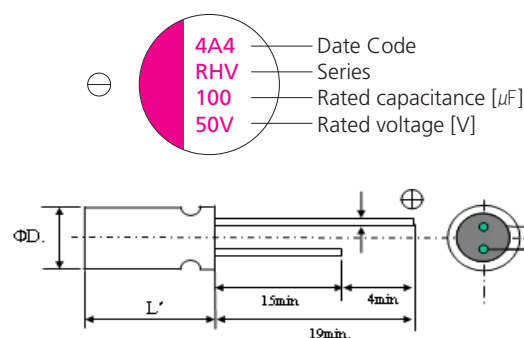
## • Size List

(unit: mm)

| RV<br>(SV) | 16<br>(18.4) | 20<br>(23) | 25<br>(28.7) | 32<br>(36.8) | 35<br>(40.2) | 50<br>(57.5) |
|------------|--------------|------------|--------------|--------------|--------------|--------------|
| 10         |              |            |              |              |              | 6.3×6        |
| 22         |              |            |              | 6.3×6        | 6.3×6        | 8×7          |
| 27         |              |            | 6.3×6        |              |              |              |
| 39         |              |            |              |              | 8×7          | 8×11.5       |
| 47         |              |            | 6.3×6        |              | 8×7          | 8×11.5       |
| 56         |              |            | 6.3×6        |              |              | 8×11.5       |
| 68         |              |            |              | 8×7          | 8×7          | 10×11.5      |
| 82         |              |            | 8×7          |              | 8×11.5       |              |
| 100        |              |            | 8×7          |              | 10×11.5      | 10×11.5      |
| 120        |              | 6.3×6      |              | 8×11.5       |              | 8×11.5       |
| 150        | 6.3×6        |            |              |              | 10×11.5      |              |
| 180        | 6.3×6        | 8×7        | 8×11.5       |              |              |              |
| 220        |              | 8×11.5     | 8×11.5       | 10×11.5      | 10×11.5      | 10×11.5      |
| 270        | 8×7          |            |              |              | 8×11.5       |              |
| 330        |              |            | 10×11.5      |              | 10×11.5      |              |
| 390        |              | 8×11.5     | 10×11.5      |              |              |              |
| 470        |              |            | 10×11.5      |              |              |              |
| 560        | 8×11.5       | 10×11.5    |              |              |              |              |
| 680        |              |            | 10×11.5      |              | 10×16        |              |
| 1000       | 10×11.5      |            | 10×16        |              |              |              |
| 1200       | 8×15         |            | 8×23         |              |              |              |
| 1500       | 10×11.5      |            |              |              |              |              |
| 1800       | 8×21         |            |              |              |              |              |
| 2200       | 10×16        |            | 10×23        |              |              |              |
| 3300       | 10×21        |            |              |              |              |              |

RV: Rated Voltage [V] SV: Surge Voltage [V] (at room temperature)

## • Marking and Dimensions



(unit: mm)

| Size    | ØD±0.5 | L    | L'           | P±0.5 | Ød   |
|---------|--------|------|--------------|-------|------|
| 6.3×6   | 6.3    | 6.0  | Lmax         | 2.5   | 0.45 |
| 8×7     | 8.0    | 7.0  |              | 3.5   | 0.45 |
| 8×11.5  | 8.0    | 11.5 | L + 1.0 max. | 3.5   | 0.60 |
| 10×11.5 | 10.0   | 11.5 |              | 5.0   | 0.60 |
| 8×15    | 8.0    | 15.0 |              | 3.5   | 0.60 |
| 10×16   | 10.0   | 16.0 |              | 5.0   | 0.60 |
| 8×21    | 8.0    | 21.0 |              | 3.5   | 0.60 |
| 10×21   | 10.0   | 21.0 |              | 5.0   | 0.60 |
| 8×23    | 8.0    | 23.0 |              | 3.5   | 0.60 |
| 10×23   | 10.0   | 23.0 |              | 5.0   | 0.60 |

## • Standard Ratings

| Rated Voltage [Vdc] | Rated Capacitance [μF] | Size ØD x L [mm] | ESR (20°C, 100kHz) [mΩ] [max.] | Rated Ripple Current (105°C, 100kHz) [mA rms] | Tangent of Loss Angel [max.] | Leakage Current [μA, max.] | Part Number   |
|---------------------|------------------------|------------------|--------------------------------|-----------------------------------------------|------------------------------|----------------------------|---------------|
| 16                  | 150                    | 6.3 x 6          | 30                             | 2590                                          | 0.12                         | 480                        | 16RHV150MC6   |
|                     | 180                    | 6.3 x 6          | 22                             | 3300                                          | 0.12                         | 576                        | 16RHV180MC6   |
|                     | 270                    | 8 x 7            | 22                             | 3300                                          | 0.12                         | 864                        | 16RHV270MD7   |
|                     | 560                    | 8 x 11.5         | 14                             | 4950                                          | 0.12                         | 1792                       | 16RHV560MD11  |
|                     | 1000                   | 10 x 11.5        | 12                             | 5400                                          | 0.12                         | 3200                       | 16RHV1000ME11 |
|                     | 1200                   | 8 x 15           | 11                             | 7000                                          | 0.12                         | 2880                       | 16RHV1200MD15 |
|                     | 1500                   | 10 x 11.5        | 12                             | 5600                                          | 0.12                         | 4800                       | 16RHV1500ME11 |
|                     | 1800                   | 8 x 21           | 9                              | 7500                                          | 0.12                         | 4320                       | 16RHV1800MD21 |
|                     | 2200                   | 10 x 16          | 11                             | 8100                                          | 0.12                         | 5280                       | 16RHV2200ME16 |
|                     | 3300                   | 10 x 21          | 11                             | 10000                                         | 0.12                         | 7920                       | 16RHV3300ME21 |
| 20                  | 120                    | 6.3 x 6          | 25                             | 3200                                          | 0.12                         | 480                        | 20RHV120MC6   |
|                     | 180                    | 8 x 7            | 25                             | 3200                                          | 0.12                         | 720                        | 20RHV180MD7   |
|                     | 220                    | 8 x 11.5         | 24                             | 3320                                          | 0.12                         | 880                        | 20RHV220MD11  |
|                     | 390                    | 8 x 11.5         | 14                             | 4950                                          | 0.12                         | 1560                       | 20RHV390MD11  |
|                     | 560                    | 10 x 11.5        | 12                             | 5400                                          | 0.12                         | 2240                       | 20RHV560ME11  |
| 25                  | 27                     | 6.3 x 6          | 40                             | 2450                                          | 0.12                         | 135                        | 25RHV27MC6    |
|                     | 47                     | 6.3 x 6          | 30                             | 2800                                          | 0.12                         | 235                        | 25RHV47MC6    |
|                     | 56                     | 6.3 x 6          | 30                             | 2800                                          | 0.12                         | 280                        | 25RHV56MC6    |
|                     | 82                     | 8 x 7            | 28                             | 3000                                          | 0.12                         | 410                        | 25RHV82MD7    |
|                     | 100                    | 8 x 7            | 28                             | 3000                                          | 0.12                         | 500                        | 25RHV100MD7   |
|                     | 180                    | 8 x 11.5         | 16                             | 4650                                          | 0.12                         | 900                        | 25RHV180MD11  |
|                     | 220                    | 8 x 11.5         | 16                             | 4650                                          | 0.12                         | 1100                       | 25RHV220MD11  |
|                     | 330                    | 10 x 11.5        | 14                             | 5000                                          | 0.12                         | 1650                       | 25RHV330ME11  |
|                     | 390                    | 10 x 11.5        | 14                             | 5000                                          | 0.12                         | 1950                       | 25RHV390ME11  |
|                     | 470                    | 10 x 11.5        | 14                             | 5000                                          | 0.12                         | 2350                       | 25RHV470ME11  |
|                     | 680                    | 10 x 11.5        | 14                             | 5000                                          | 0.12                         | 3400                       | 25RHV680ME11  |
|                     | 1000                   | 10 x 16          | 10                             | 5600                                          | 0.12                         | 2500                       | 25RHV1000ME16 |
|                     | 1200                   | 8 x 23           | 10                             | 5600                                          | 0.12                         | 3000                       | 25RHV1200MD23 |
|                     | 2200                   | 10 x 23          | 10                             | 8100                                          | 0.12                         | 5500                       | 25RHV2200ME23 |
| 32                  | 22                     | 6.3 x 6          | 35                             | 2700                                          | 0.12                         | 140                        | 32RHV22MC6    |
|                     | 68                     | 8 x 7            | 25                             | 3200                                          | 0.12                         | 435                        | 32RHV68MD7    |
|                     | 120                    | 8 x 11.5         | 20                             | 4000                                          | 0.12                         | 768                        | 32RHV120MD11  |
|                     | 220                    | 10 x 11.5        | 18                             | 4650                                          | 0.12                         | 1408                       | 32RHV220ME11  |
| 35                  | 22                     | 6.3 x 6          | 35                             | 2600                                          | 0.12                         | 154                        | 35RHV22MC6    |
|                     | 39                     | 8 x 7            | 30                             | 2800                                          | 0.12                         | 273                        | 35RHV39MD7    |
|                     | 47                     | 8 x 7            | 30                             | 2800                                          | 0.12                         | 329                        | 35RHV47MD7    |
|                     | 68                     | 8 x 7            | 28                             | 3000                                          | 0.12                         | 476                        | 35RHV68MD7    |
|                     | 82                     | 8 x 11.5         | 20                             | 4000                                          | 0.12                         | 574                        | 35RHV82MD11   |
|                     | 100                    | 8 x 11.5         | 20                             | 4000                                          | 0.12                         | 700                        | 35RHV100MD11  |
|                     | 120                    | 10 x 11.5        | 18                             | 4400                                          | 0.12                         | 840                        | 35RHV120ME11  |
|                     | 150                    | 10 x 11.5        | 18                             | 4400                                          | 0.12                         | 1050                       | 35RHV150ME11  |
|                     | 220                    | 10 x 11.5        | 18                             | 4650                                          | 0.12                         | 1540                       | 35RHV220ME11  |
|                     | 270                    | 8 x 11.5         | 20                             | 4200                                          | 0.12                         | 1890                       | 35RHV270MD11  |
|                     | 330                    | 10 x 11.5        | 17                             | 4650                                          | 0.12                         | 2310                       | 35RHV330ME11  |
|                     | 680                    | 10 x 16          | 14                             | 5000                                          | 0.12                         | 4760                       | 35RHV680ME16  |
| 50                  | 10                     | 6.3 x 6          | 40                             | 2500                                          | 0.12                         | 100                        | 50RHV10MC6    |
|                     | 22                     | 8 x 7            | 35                             | 2700                                          | 0.12                         | 220                        | 50RHV22MD7    |
|                     | 39                     | 8 x 11.5         | 25                             | 3800                                          | 0.12                         | 390                        | 50RHV39MD11   |
|                     | 47                     | 8 x 11.5         | 25                             | 3800                                          | 0.12                         | 470                        | 50RHV47MD11   |
|                     | 56                     | 8 x 11.5         | 25                             | 3800                                          | 0.12                         | 560                        | 50RHV56MD11   |
|                     | 68                     | 10 x 11.5        | 20                             | 4300                                          | 0.12                         | 680                        | 50RHV68ME11   |
|                     | 100                    | 10 x 11.5        | 20                             | 4300                                          | 0.12                         | 1000                       | 50RHV100ME11  |
|                     | 120                    | 8 x 11.5         | 20                             | 3900                                          | 0.12                         | 1200                       | 50RHV120MD11  |
|                     | 220                    | 10 x 11.5        | 25                             | 4650                                          | 0.12                         | 2200                       | 50RHV220ME11  |

Conductive Polymer Hybrid  
Aluminum Electrolytic Capacitors  
Radial Lead Type

Conductive Polymer Hybrid  
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SMD Lead Type

Conductive Polymer Aluminum  
Electrolytic Capacitors\_Radial Lead Type

Conductive Polymer Aluminum  
Electrolytic Capacitors\_SMD Lead Type