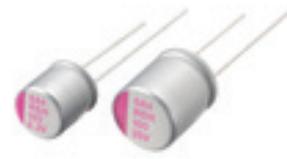


# RSH Radial Lead Type

series

- Higher temperature endurance guaranteed than RS series
- Low ESR, High ripple current
- Load life of 1,000h at 125°C



## SPECIFICATIONS

| Items                        | Characteristics   |                                      |
|------------------------------|---|--------------------------------------|
| Temperature range            | -55 to +125°C   |                                      |
| Rated voltage range          | 2.5 to 25Vdc  |                                      |
| Capacitance range            | 6.8 to 1,500μF  |                                      |
| 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 <sub>+125°C/Z<sub>+20°C</sub></sub> ≤ 1.25, Z <sub>-55°C/Z<sub>+20°C</sub></sub> ≤ 1.25 at 100kHz |                                      |
| Endurance                    | 125°C, 1,000 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         |

\*In case of some problems for measured values, measure after applying rated voltage for 120 minutes at 125°C

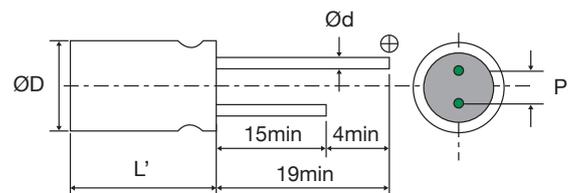
## SIZE LIST

(unit : mm)

| μF   | RV(SV)    | 2.5<br>(3.3) | 4<br>(5.2) | 6.3<br>(8.2) | 10<br>(11.5) | 16<br>(18.4) | 20<br>(23.0) | 25<br>(28.7) |
|------|-----------|--------------|------------|--------------|--------------|--------------|--------------|--------------|
| 6.8  |           |              |            |              |              |              |              | 6.3 x 6      |
| 10   |           |              |            |              |              |              |              | 8 x 7        |
| 22   |           |              |            |              |              |              | 6.3 x 6      | 10 x 8       |
| 33   |           |              |            |              |              |              | 8 x 7        | 8 x 11.5     |
| 39   |           |              |            |              |              | 6.3 x 6      |              |              |
| 47   |           |              |            |              |              | 6.3 x 6      | 8 x 7        |              |
| 56   |           |              |            |              | 6.3 x 6      |              | 10 x 8       | 10 x 11.5    |
| 68   |           |              |            |              |              |              | 10 x 8       |              |
| 82   |           |              |            | 6.3 x 6      |              | 8 x 7        |              |              |
| 100  |           |              | 6.3 x 6    | 6.3 x 6      |              | 8 x 7        | 10 x 8       | 8 x 11.5     |
| 120  |           |              |            |              | 8 x 7        |              |              |              |
| 150  |           |              | 6.3 x 6    | 8 x 7        | 8 x 7        | 10 x 8       | 10 x 11.5    | 10 x 11.5    |
| 180  |           |              |            |              |              | 8 x 11.5     |              |              |
| 220  |           |              | 8 x 7      | 8 x 7        |              |              |              |              |
| 270  |           |              |            |              | 10 x 8       |              |              |              |
| 330  |           |              | 8 x 7      | 10 x 8       | 8 x 11.5     | 10 x 11.5    |              |              |
| 470  |           |              | 10 x 8     | 8 x 11.5     |              | 10 x 11.5    |              |              |
| 560  |           |              | 8 x 11.5   |              | 10 x 11.5    |              |              |              |
| 680  | 8 x 11.5  | 10 x 8       |            |              |              |              |              |              |
| 820  |           |              |            | 10 x 11.5    |              |              |              |              |
| 1000 |           |              |            | 10 x 11.5    |              |              |              |              |
| 1200 |           | 10 x 11.5    |            |              |              |              |              |              |
| 1500 | 10 x 11.5 |              |            |              |              |              |              |              |

\*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 x 6   | 6.3    | 6.0  |           | 2.5   | 0.45 |
| 8 x 7     | 8.0    | 7.0  | L max.    | 3.5   | 0.45 |
| 10 x 8    | 10.0   | 8.0  |           | 5.0   | 0.60 |
| 8 x 11.5  | 8.0    | 11.5 | L+1.0max. | 3.5   | 0.60 |
| 10 x 11.5 | 10.0   | 11.5 |           | 5.0   | 0.60 |

# Conductive Polymer Aluminum Capacitors

## STANDARD RATINGS

| Rated Voltage<br>[Vdc] | Rated Capacitance<br>[μF] | Size<br>Φ D x L<br>[mm] | ESR<br>(20°C, 100kHz)<br>[mΩ] [max.] | Rated Ripple Current<br>(100kHz) [mA rms] |                | Tangent of<br>Loss Angel<br>[max.] | Leakage<br>Current<br>[μA, max.] | Part Number  |
|------------------------|---------------------------|-------------------------|--------------------------------------|---|----------------|------------------------------------|----------------------------------|--------------|
|                        |                           |                         |                                      | -55 to +105°C                             | +105 to +125°C |                                    |                                  |              |
| 2.5                    | 680                       | 8 x 11.5                | 13                                   | 4520                                      | 1430           | 0.10                               | 340                              | 2RSH680MD11  |
|                        | 1500                      | 10 x 11.5               | 13                                   | 5440                                      | 1721           | 0.10                               | 750                              | 2RSH1500ME11 |
| 4                      | 100                       | 6.3 x 6                 | 40                                   | 1810                                      | 572            | 0.10                               | 200                              | 4RSH100MC6   |
|                        | 150                       | 6.3 x 6                 | 40                                   | 1810                                      | 572            | 0.10                               | 300                              | 4RSH150MC6   |
|                        | 220                       | 8 x 7                   | 35                                   | 2560                                      | 810            | 0.10                               | 440                              | 4RSH220MD7   |
|                        | 330                       | 8 x 7                   | 35                                   | 2560                                      | 810            | 0.10                               | 660                              | 4RSH330MD7   |
|                        | 470                       | 10 x 8                  | 25                                   | 3700                                      | 1170           | 0.10                               | 376                              | 4RSH470ME8   |
|                        | 560                       | 8 x 11.5                | 13                                   | 4520                                      | 1430           | 0.10                               | 448                              | 4RSH560MD11  |
|                        | 680                       | 10 x 8                  | 25                                   | 3700                                      | 1170           | 0.10                               | 544                              | 4RSH680ME8   |
|                        | 1200                      | 10 x 11.5               | 13                                   | 5440                                      | 1721           | 0.10                               | 960                              | 4RSH1200ME11 |
| 6.3                    | 82                        | 6.3 x 6                 | 45                                   | 1700                                      | 537            | 0.10                               | 258                              | 6RSH82MC6    |
|                        | 100                       | 6.3 x 6                 | 40                                   | 1810                                      | 572            | 0.10                               | 315                              | 6RSH100MC6   |
|                        | 150                       | 8 x 7                   | 35                                   | 2560                                      | 810            | 0.10                               | 472                              | 6RSH150MD7   |
|                        | 220                       | 8 x 7                   | 35                                   | 2560                                      | 810            | 0.10                               | 693                              | 6RSH220MD7   |
|                        | 330                       | 10 x 8                  | 25                                   | 3700                                      | 1170           | 0.10                               | 416                              | 6RSH330ME8   |
|                        | 470                       | 8 x 11.5                | 15                                   | 4210                                      | 1332           | 0.10                               | 592                              | 6RSH470MD11  |
|                        | 820                       | 10 x 11.5               | 12                                   | 5440                                      | 1721           | 0.10                               | 1033                             | 6RSH820ME11  |
|                        | 1000                      | 10 x 11.5               | 12                                   | 5440                                      | 1721           | 0.10                               | 1260                             | 6RSH1000ME11 |
| 10                     | 56                        | 6.3 x 6                 | 45                                   | 1700                                      | 537            | 0.10                               | 280                              | 10RSH56MC6   |
|                        | 120                       | 8 x 7                   | 35                                   | 2560                                      | 810            | 0.10                               | 600                              | 10RSH120MD7  |
|                        | 150                       | 8 x 7                   | 35                                   | 2560                                      | 810            | 0.10                               | 750                              | 10RSH150MD7  |
|                        | 270                       | 10 x 8                  | 25                                   | 3700                                      | 1170           | 0.10                               | 540                              | 10RSH270ME8  |
|                        | 330                       | 8 x 11.5                | 17                                   | 3950                                      | 1250           | 0.10                               | 660                              | 10RSH330MD11 |
|                        | 560                       | 10 x 11.5               | 13                                   | 5230                                      | 1655           | 0.10                               | 1120                             | 10RSH560ME11 |
|                        | 16                        | 6.3 x 6                 | 50                                   | 1620                                      | 512            | 0.10                               | 312                              | 16RSH39MC6   |
| 47                     | 6.3 x 6                   | 50                      | 1620                                 | 512                                       | 0.10           | 376                                | 16RSH47MC6                       |              |
| 82                     | 8 x 7                     | 40                      | 2120                                 | 670                                       | 0.10           | 656                                | 16RSH82MD7                       |              |
| 100                    | 8 x 7                     | 40                      | 2120                                 | 670                                       | 0.10           | 800                                | 16RSH100MD7                      |              |
| 150                    | 10 x 8                    | 30                      | 3020                                 | 955                                       | 0.10           | 480                                | 16RSH150ME8                      |              |
| 180                    | 8 x 11.5                  | 20                      | 3640                                 | 1151                                      | 0.10           | 576                                | 16RSH180MD11                     |              |
| 330                    | 10 x 11.5                 | 16                      | 4720                                 | 1493                                      | 0.10           | 1056                               | 16RSH330ME11                     |              |
| 470                    | 10 x 11.5                 | 16                      | 4720                                 | 1493                                      | 0.10           | 1504                               | 16RSH470ME11                     |              |
| 20                     | 22                        | 6.3 x 6                 | 60                                   | 1450                                      | 458            | 0.10                               | 220                              | 20RSH22MC6   |
|                        | 33                        | 8 x 7                   | 45                                   | 1890                                      | 598            | 0.10                               | 330                              | 20RSH33MD7   |
|                        | 47                        | 8 x 7                   | 45                                   | 1890                                      | 598            | 0.10                               | 470                              | 20RSH47MD7   |
|                        | 56                        | 10 x 8                  | 40                                   | 2400                                      | 759            | 0.10                               | 224                              | 20RSH56ME8   |
|                        | 68                        | 10 x 8                  | 40                                   | 2400                                      | 759            | 0.10                               | 272                              | 20RSH68ME8   |
|                        | 100                       | 10 x 8                  | 35                                   | 2570                                      | 810            | 0.10                               | 400                              | 20RSH100ME8  |
|                        | 100                       | 8 x 11.5                | 24                                   | 3320                                      | 1050           | 0.10                               | 400                              | 20RSH100MD11 |
|                        | 150                       | 10 x 11.5               | 20                                   | 4320                                      | 1367           | 0.10                               | 600                              | 20RSH150ME11 |
| 25                     | 6.8                       | 6.3 x 6                 | 80                                   | 1200                                      | 377            | 0.10                               | 170                              | 25RSH6R8MC6  |
|                        | 10                        | 8 x 7                   | 60                                   | 1500                                      | 471            | 0.10                               | 250                              | 25RSH10MD7   |
|                        | 22                        | 10 x 8                  | 50                                   | 2000                                      | 632            | 0.10                               | 275                              | 25RSH22ME8   |
|                        | 33                        | 8 x 11.5                | 30                                   | 2980                                      | 943            | 0.10                               | 413                              | 25RSH33MD11  |
|                        | 56                        | 10 x 11.5               | 28                                   | 3800                                      | 1202           | 0.10                               | 700                              | 25RSH56ME11  |
|                        | 100                       | 8 x 11.5                | 30                                   | 3320                                      | 1050           | 0.10                               | 500                              | 25RSH100MD11 |
|                        | 150                       | 10 x 11.5               | 25                                   | 4320                                      | 1367           | 0.10                               | 750                              | 25RSH150ME11 |

