

## RHP Series

-40°C +85°C



RHP Series - Radial Type

### Specifications

- Operation Temperature Range :**  
 -40 ~ +85°C      -25 ~ +85°C
- Rated Working Voltage:**  
 6.3 ~ 100VDC      160 ~ 450VDC
- Capacitance Tolerance (120Hz 20°C) : ±20%(M)**
- Leakage Current (20°C)**  
 6.3 ~ 100VDC    I ≤ 0.01CV or 4 (µA)  
 160 ~ 450VDC    I ≤ 0.03CV or 40(µA) max  
 \*Whichever is greater after 3 min  
 I : Leakage Current (µA) C : Rated Capacitance (µA)  
 V : Working Voltage(V)

- Surge Voltage (20°C)**

|      |     |    |    |    |    |    |    |     |     |     |     |     |     |     |
|------|-----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|
| W.V. | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250 | 350 | 400 | 450 |
| S.V. | 8   | 13 | 20 | 32 | 44 | 63 | 79 | 125 | 200 | 250 | 300 | 400 | 450 | 500 |

- Dissipation Factor (tan δ) (120Hz 20°C)**

|       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| W.V.  | 6.3  | 10   | 16   | 25   | 35   | 50   | 63   | 100  | 160  | 200  | 250  | 350  | 400  | 450  |
| tan δ | 0.22 | 0.19 | 0.16 | 0.14 | 0.12 | 0.10 | 0.10 | 0.08 | 0.15 | 0.15 | 0.15 | 0.20 | 0.20 | 0.20 |

- Low Temperature Stability**

Impedance ratio at 120Hz

|                   |     |    |    |    |        |         |         |     |
|-------------------|-----|----|----|----|--------|---------|---------|-----|
| Rated Voltage (V) | 6.3 | 10 | 16 | 25 | 35~100 | 160~250 | 350~400 | 450 |
| -25°C/ +20°C      | 4   | 3  | 2  | 2  | 2      | 3       | 6       | 15  |
| -40°C/ +20°C      | 8   | 6  | 4  | 3  | 3      | 6       | 6       | -   |

- Load Life**

After 2000 hours application of W. V. at +85°C, the capacitor shall meet the following limits.

|                    |                                  |
|--------------------|----------------------------------|
| Capacitance Change | ≤±20% of initial value           |
| Dissipation Factor | ≤150% of initial specified value |
| Leakage Current    | ≤ initial specified value        |

- Shelf Life**

At +85°C, no voltage application after 1000 hours, the capacitor shall meet the limits for load life characteristics. (With voltage treatment)

|                    |                                  |
|--------------------|----------------------------------|
| Capacitance Change | ≤±20% of initial value           |
| Dissipation Factor | ≤200% of initial specified value |
| Leakage Current    | ≤200% of initial specified value |

- Ripple Current Coefficients**

|                  |      |      |      |
|------------------|------|------|------|
| Temperature (°C) | 60   | 75   | 85   |
| Multiplier       | 1.25 | 1.14 | 1.00 |

|                |            |      |      |      |
|----------------|------------|------|------|------|
| Frequency (Hz) | 60         | 120  | 1K   | ≥10K |
| W.V.           | Multiplier |      |      |      |
| 6.3~25V        | 0.85       | 1.00 | 1.10 | 1.20 |
| 35~100V        | 0.80       | 1.00 | 1.15 | 1.25 |
| 160~250V       | 0.75       | 1.00 | 1.25 | 1.40 |
| 350~450V       | 0.70       | 1.00 | 1.30 | 1.50 |

### Case Size & Max Ripple Current

| V(DC)                | 6.3       |      | 10        |      | 16        |      |
|----------------------|-----------|------|-----------|------|-----------|------|
| $\mu\text{F}$ / Item | D x L     | R.C. | D x L     | R.C. | D x L     | R.C. |
| 47                   |           |      |           | →    | 5 x 11    | 130  |
| 100                  | 5 x 11    | 160  | 5 x 11    | 170  | 6.3 x 11  | 210  |
| 220                  | 5 x 11    | 240  | 5 x 11    | 250  | 6.3 x 11  | 310  |
|                      | 6.3 x 11  | 270  | 6.3 x 11  | 290  | 8 x 11    | 370  |
| 330                  | 6.3 x 11  | 330  | 6.3 x 11  | 350  | 8 x 11    | 450  |
|                      | 8 x 11    | 380  | 8 x 11    | 410  | 10 x 12.5 | 470  |
| 470                  | 6.3 x 11  | 390  | 6.3 x 11  | 420  | 8 x 11    | 540  |
|                      | 8 x 11    | 460  | 8 x 11    | 490  | 10 x 12.5 | 560  |
| 1000                 | 8 x 11    | 670  | 10 x 12.5 | 760  | 10 x 16   | 920  |
|                      | 10 x 12.5 | 700  | 10 x 16   | 840  | 10 x 20   | 1010 |
| 2200                 | 10 x 16   | 1110 | 10 x 20   | 1310 | 12.5 x 20 | 1510 |
|                      | 10 x 20   | 1220 | 12.5 x 20 | 1390 | 12.5 x 25 | 1660 |
| 3300                 | 10 x 20   | 1440 | 12.5 x 20 | 1630 | 12.5 x 25 | 1930 |
|                      | 12.5 x 20 | 1530 | 12.5 x 25 | 1800 | 16 x 25   | 1940 |
| 4700                 | 12.5 x 20 | 1730 | 12.5 x 25 | 2020 | 16 x 25   | 2160 |
|                      | 12.5 x 25 | 1910 | 16 x 25   | 2030 | 16 x 32   | 2380 |
| 6800                 | 12.5 x 25 | 2160 | 16 x 25   | 2270 | 16 x 32   | 2650 |
|                      | 16 x 25   | 2170 | 16 x 32   | 2510 | 18 x 36   | 2980 |
| 8200                 | 16 x 25   | 2280 | 16 x 32   | 2630 | 16 x 36   | 2910 |
|                      | 16 x 32   | 2520 | 18 x 36   | 2960 | 18 x 40   | 3280 |
| 10000                | 16 x 25   | 2390 | 16 x 36   | 2900 | 18 x 36   | 3230 |
|                      | 16 x 32   | 2640 | 18 x 36   | 3090 | 18 x 40   | 3400 |
| 15000                | 16 x 36   | 3050 | 18 x 36   | 3360 | 22 x 40   | 4090 |
|                      | 18 x 36   | 3260 | 18 x 40   | 3540 | 22 x 50   | 4520 |
| 22000                | 18 x 40   | 3680 | 22 x 50   | 4650 | 25 x 50   | 5120 |

Case size : D x L (mm)

Max ripple current : A(rms) 85°C 120Hz

All blank voltage on sleeve marking is the same voltage as " \_ " point to.

## RHP Series

-40°C +85°C

### Case Size & Max Ripple Current

| V(DC)     | 25        |      | 35        |      | 50        |      |
|-----------|-----------|------|-----------|------|-----------|------|
| μF / Item | D x L     | R.C. | D x L     | R.C. | D x L     | R.C. |
| 10        | 5x11      | 60   | 5x11      | 70   | 5x11      | 75   |
| 22        | 5x11      | 95   | 5x11      | 100  | 5 x 11    | 110  |
| 33        | 5 x 11    | 110  | 5 x 11    | 120  | 5 x 11    | 140  |
|           | 6.3 x 11  | 130  | 6.3 x 11  | 140  | 6.3 x 11  | 150  |
| 47        | 5 x 11    | 140  | 5 x 11    | 150  | 6.3 x 11  | 180  |
|           | 6.3 x 11  | 160  | 6.3 x 11  | 170  | 8 x 11    | 210  |
| 100       | 6.3 x 11  | 230  | 6.3 x 11  | 240  | 8 x 11    | 310  |
|           | 8 x 11    | 260  | 8 x 11    | 290  | 10 x 12.5 | 330  |
| 220       | 8 x 11    | 390  | 8 x 11    | 420  | 10 x 12.5 | 490  |
|           | 10 x 12.5 | 410  | 10 x 12.5 | 450  | 10 x 16   | 540  |
| 330       | 8 x 11    | 480  | 10 x 12.5 | 550  | 10 x 16   | 670  |
|           | 10 x 12.5 | 510  | 10 x 16   | 610  | 10 x 20   | 730  |
| 470       | 10 x 12.5 | 600  | 10 x 16   | 720  | 10 x 20   | 820  |
|           | 10 x 16   | 670  | 10 x 20   | 800  | 12.5 x 20 | 930  |
| 1000      | 10 x 20   | 1080 | 12.5 x 20 | 1240 | 12.5 x 25 | 1500 |
|           | 12.5 x 20 | 1150 | 12.5 x 25 | 1370 | 16 x 25   | 1510 |
| 2200      | 12.5 x 25 | 1760 | 16 x 25   | 1890 | 16 x 36   | 2390 |
|           | 16 x 25   | 1770 | 16 x 32   | 2090 | 18 x 36   | 2550 |
| 3300      | 16 x 25   | 2040 | 16 x 36   | 2530 | 18 x 36   | 2890 |
|           | 16 x 32   | 2260 | 18 x 36   | 2700 | 18 x 40   | 3050 |
| 4700      | 16 x 32   | 2500 | 18 x 36   | 2960 | 22 x 45   | 3880 |
|           | 18 x 36   | 2810 | 18 x 40   | 3120 |           |      |
| 6800      | 18 x 36   | 3100 | 22 x 45   | 4020 |           |      |
|           | 18 x 40   | 3270 |           |      | 25 x 50   | 4730 |
| 8200      | 22 x 45   | 4000 | 22 x 50   | 4350 |           |      |
| 10000     | 22 x 50   | 4330 | 25 x 50   | 4800 |           |      |
| 15000     | 25 x 50   | 4970 |           |      |           |      |

Case size : D x L (mm)

Max ripple current : A(rms) 85°C 120Hz

## RHP Series

-40°C +85°C

### Case Size & Max Ripple Current

| V(DC)<br>μF / Item | 63      |      | 100     |      |
|--------------------|---------|------|---------|------|
|                    | D x L   | R.C. | D x L   | R.C. |
| 10                 | 5 x 11  | 75   | 6.3x11  | 95   |
| 22                 | 5x11    | 110  | 6.3x11  | 140  |
|                    | 6.3x11  | 130  | 8x11    | 160  |
| 33                 | 6.3x11  | 150  | 8x11    | 200  |
|                    | 8x11    | 180  | 10x12.5 | 210  |
| 47                 | 6.3x11  | 180  | 10x12.5 | 250  |
|                    | 8x11    | 210  | 10x16   | 280  |
| 100                | 10x12.5 | 330  | 10x20   | 450  |
|                    | 10x16   | 370  | 12.5x2  | 480  |
| 220                | 10x16   | 540  | 12.5x25 | 790  |
|                    | 10x20   | 600  | 16x25   | 790  |
| 330                | 10x20   | 730  | 12.5x25 | 960  |
|                    | 12.5x20 | 780  | 16x25   | 970  |
| 470                | 12.5x20 | 930  | 16x25   | 1160 |
|                    | 12.5x25 | 1030 | 16x32   | 1280 |
| 1000               | 16x25   | 1510 | 18x40   | 2220 |
|                    | 16x32   | 1670 | 22x35   | 2340 |
| 2200               | 22x35   | 2830 | 25x50   | 3900 |
| 3300               | 22x50   | 3760 |         |      |
| 4700               | 25x50   | 4370 |         |      |

Case size : D x L (mm)

Max ripple current : A(rms) 85°C 120Hz

## RHP Series

-40°C +85°C

### Case Size & Max Ripple Current

| V(DC)                | 160     |      | 200       |      | 250       |         |
|----------------------|---------|------|-----------|------|-----------|---------|
| $\mu\text{F}$ / Item | D x L   | R.C. | D x L     | R.C. | D x L     | R.C.    |
| 1                    | 6.3x11  | 25   | 6.3x11    | 27   | 6.3x11    | 29      |
| 2.2                  | 6.3x11  | 37   | 6.3x11    | 39   | 6.3x11    | 43      |
| 3.3                  | 6.3x11  | 45   | 6.3x11    | 48   | 8 x 11    | 60      |
| 4.7                  | 6.3x11  | 55   | 8 x 11    | 65   | 8 x 11    | 75      |
| 10                   | 8x11    | 90   | 10 x 12.5 | 100  | 10 x 16   | 120     |
| 22                   | 10x16   | 160  | 10 x 20   | 190  | 12.5 x 20 | 220     |
| 33                   | 10x20   | 210  | 12.5 x 20 | 250  | 12.5 x 20 | 270     |
| 47                   | 12.5x20 | 270  | 12.5x20   | 290  | 12.5 x 25 | 350     |
| 100                  | 12.5x25 | 440  | 16 x 25   | 470  | 16 x 32   | 570     |
| 220                  | 16x36   | 760  | 18 x 40   | 920  |           |         |
|                      | 22x30   | 850  | 22 x 30   | 910  | 22 x 35   | 1060    |
| 330                  | 18x40   | 1050 |           |      |           |         |
|                      | 22x30   | 1040 | 22 x 40   | 1260 | 22 x 45   | 1450    |
| 470                  | 22x40   | 1400 | 22 x 45   | 1590 | 25 x 45   | 1850    |
| 560                  | 22x45   | 1610 | 22 x 50   | 1820 | 25 x 50   | 2120    |
| 680                  | 22x50   | 1860 | 25 x 50   | 2150 | 25 x 50   | 25 x 50 |
| 820                  | 25 x 50 | 2200 |           |      |           |         |

Case size : D x L (mm)

Max ripple current : A(rms) 85°C 120Hz

## RHP Series

-40°C +85°C

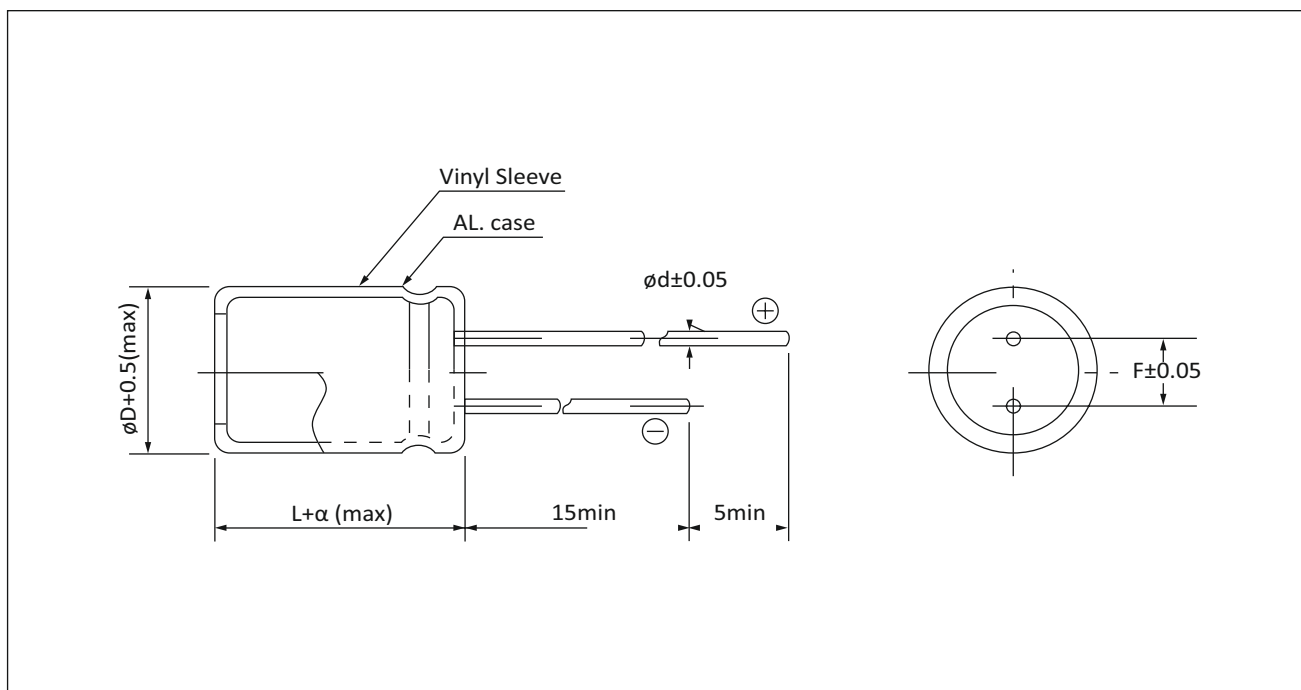
### Case Size & Max Ripple Current

| V(DC)     | 350     |      | 400     |      | 450       |      |
|-----------|---------|------|---------|------|-----------|------|
| μF / Item | D x L   | R.C. | D x L   | R.C. | D x L     | R.C. |
| 1         | 8x11    | 29   | 8x11    | 30   | 8 x 11    | 29   |
| 2.2       | 8x11    | 43   | 8x11    | 44   | 10 x 12.5 | 45   |
| 3.3       | 10x12.5 | 55   | 10x12.5 | 55   | 10 x 16   | 60   |
| 4.7       | 10x12.5 | 65   | 10x16   | 75   | 10 x 18   | 75   |
| 10        | 10x20   | 120  | 12.5x20 | 130  | 12.5 x 20 | 130  |
| 22        | 12.5x20 | 190  | 12.5x25 | 210  | 16 x 25   | 210  |
| 33        | 12.5x25 | 250  | 16 x 25 | 260  | 16 x 32   | 280  |
| 47        | 16 x 25 | 300  | 16 x 32 | 350  | 18 x 36   | 380  |
|           |         |      | 22 x 30 | 410  |           |      |
| 100       | 18 x 36 | 550  | 18 x 36 | 570  | 18 x 36   | 550  |
|           | 22 x 35 | 610  | 22 x 40 | 670  |           |      |
| 150       | 22 x 40 | 790  | 25 x 50 | 970  |           |      |
| 220       | 22 x 50 | 1060 |         |      |           |      |

Case size : D x L (mm)

Max ripple current : A(rms) 85°C 120Hz

### Wide Temperature Range



Dimension in mm.

| $\phi D$ | F    | d   | $\alpha$ |
|----------|------|-----|----------|
| 5        | 2.0  | 0.5 | 1.5      |
| 6.3      | 2.5  | 0.5 | 1.5      |
| 8        | 3.5  | 0.6 | 1.5      |
| 10       | 5.0  | 0.6 | 1.5      |
| 12.5     | 5.0  | 0.6 | 1.5      |
| 16       | 7.5  | 0.8 | 1.5      |
| 18       | 7.5  | 0.8 | 1.5      |
| 22       | 10.0 | 1.0 | 2.0      |
| 25       | 12.5 | 1.0 | 2.0      |