

RC Series

- Low impedance ,high ripple current
- For switching power supply
- RoHS2.0 Compliant

◆ 规格表 Specifications

| 项目 Items | 特性参数 Characteristics | | | | | | | | | | | | | | | | |
|---|--|---------------------------------------|------|------|------|------|------|------|--|-----------|------|----------------------------|-----|-----|-----|--|--|
| 使用温度范围 Category Temperature Range | -40 ~ +105℃ | | | | | | | | | | | | | | | | |
| 额定工作电压范围 Rated Voltage Range | 6.3 ~ 450V.DC | | | | | | | | | | | | | | | | |
| 静电容量允许偏差 Capacitance Tolerance | ±20%(M) (at 20℃,120Hz) | | | | | | | | | | | | | | | | |
| 漏电流 Leakage Current | I≤0.01CV or 3μA ,二者取大值 (施加额定工作电压2分钟后) Whichever is greater (After 2 minute application of rated voltage) | | | | | | | | I≤0.02CV+10(μA) (施加额定工作电压2分钟后) (After 2 minute application of rated voltage) | | | | | | | | |
| | Note: I=Max.leakage current (μA), C=Nominal capacitance(μF), V=Rated voltage(V) (at 20℃) | | | | | | | | | | | | | | | | |
| 损耗角正切值 tanδ Dissipation Factor | Rated voltage(V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250 | 350 | 400 | 450 | | |
| | tanδ(Max.) | 0.22 | 0.19 | 0.16 | 0.14 | 0.12 | 0.10 | 0.09 | 0.08 | 0.15 | 0.15 | 0.15 | 0.2 | 0.2 | 0.2 | | |
| | 标称容量超过 1000 μF,则每增加 1000 μF,损耗角正切值增加 0.02. When nominal capacitance exceeds 1000μF,add 0.02 to the value above for each 1000μF increase. (at 20℃,120Hz) | | | | | | | | | | | | | | | | |
| 低温特性 Low Temperature Characteristics (Max.Impedance Ratio) | 阻抗比值不得超过下表中列出的值 The impedance ratio shall not exceed the values listed in the below table. (at 120Hz) | | | | | | | | | | | | | | | | |
| | Rated voltage(V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250 | 350 | 400 | 450 | | |
| | Z(-25℃)/Z(+20℃) | 4 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 3 | 5 | | | 6 | | | |
| Z(-40℃)/Z(+20℃) | 8 | 6 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 7 | | | 8 | | | | |
| 耐久性 Endurance | 在 105℃ 环境中, 不超过额定电压的范围内叠加最大允许纹波电流, 连续加载右表时间, 经恢复到 20℃ 后, 电容器满足以下各项要求。 The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple Current is applied for the specified period of time at 105℃ | | | | | | | | | | | | | | | | |
| | Capacitance change | ≅ ±20% of the initial value | | | | | | | | Load life | | | | | | | |
| | D.F.(tanδ) | ≅ 200% of the initial specified value | | | | | | | | 6.3~100v | | Φ5~ Φ8 : 2000h; ≥Φ10:3000h | | | | | |
| | Leakage current | ≅ The initial specified value | | | | | | | | 160~450v | | Φ6.3:3000h; ≥Φ8:5000h | | | | | |
| 高温储存特性 Shelf Life | 在 105℃ 环境中, 不施加电压条件下储存 1000 小时, 经恢复到 20℃ 后, 电容器满足以下各项要求。 The following specifications shall be satisfied when the capacitors are restored at 20℃ after exposing them for 1000 hours at 105℃ without voltage applied. | | | | | | | | | | | | | | | | |
| | capacitance change | ≅ ±20% of the initial value | | | | | | | | | | | | | | | |
| | D.F.(tanδ) | ≅ 200% of the initial specified value | | | | | | | | | | | | | | | |
| | Leakage current | ≅ 200% of the initial specified value | | | | | | | | | | | | | | | |

◆ 尺寸图 (单位: mm) DIMENSIONS (Unit:mm)



| | | | | | | | |
|----|-----|-----|---------|-----|-----|-----|-----|
| ΦD | 5 | 6.3 | 8 | 10 | 13 | 16 | 18 |
| F | 2.0 | 2.5 | 3.5 | 5.0 | 5.0 | 7.5 | 7.5 |
| Φd | 0.5 | 0.5 | 0.5/0.6 | 0.6 | 0.6 | 0.8 | 0.8 |

| | |
|---|-----------|
| α | (L<20)1.5 |
| | (L≥20)2.0 |

◆ 纹波电流修正系数 Rated Ripple Current Coefficient

● 频率系数 Frequency Coefficient

| Rated Voltage(V) | Frequency(Hz) | | | | |
|------------------|-----------------|------|------|------|------|
| | Capacitance(μF) | 120 | 1K | 10K | 100K |
| 6.3~450V | ≤ 4.7μF | 0.42 | 0.70 | 0.90 | 1.00 |
| | 5.6 ~ 33μF | 0.50 | 0.73 | 0.92 | 1.00 |
| | 34 ~ 330μF | 0.55 | 0.77 | 0.94 | 1.00 |
| | 331 ~ 1,000μF | 0.60 | 0.80 | 0.96 | 1.00 |
| | >1,000μF | 0.70 | 0.85 | 0.98 | 1.00 |

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◆ 标准品一览表 Standard Ratings

| WV (V _{dc}) | Cap. (μF) | Case Size ΦD×L (mm) | Impedance (Ω) Max. 20°C /100kHz | Rated ripple current (mA _{rms}) 105°C/100KHz | WV (V _{dc}) | Cap. (μF) | Size ΦD×L (mm) | Impedance (Ω) Max. 20°C /100kHz | Rated ripple current (mA _{rms}) 105°C /100KHz | WV (V _{dc}) | Cap. (μF) | Size ΦD×L (mm) | Impedance (Ω) Max. 20°C /100kHz | Rated ripple current (mA _{rms}) 105°C /100KHz |
|-----------------------|-----------|---------------------|---------------------------------|--|-----------------------|-----------|----------------|---------------------------------|---|-----------------------|-----------|----------------|---------------------------------|---|
| 6.3 | 33 | 5×11 | 1.0 | 100 | 25 | 10,000 | 18×40 | 0.015 | 3,810 | 50 | 68 | 8×12 | 0.630 | 330 |
| | 47 | 5×11 | 1.0 | 125 | | 4.7 | 5×11 | 2.8 | 80 | | 100 | 8×12 | 0.520 | 490 |
| | 100 | 5×11 | 0.550 | 165 | | 6.8 | 5×11 | 2.5 | 95 | | 150 | 10×13 | 0.300 | 650 |
| | 150 | 5×11 | 0.500 | 200 | | 10 | 5×11 | 1.5 | 125 | | 220 | 10×16 | 0.088 | 820 |
| | 220 | 6.3×11 | 0.450 | 250 | | 22 | 5×11 | 0.900 | 140 | | 330 | 10×20 | 0.073 | 930 |
| | 330 | 6.3×11 | 0.260 | 295 | | 33 | 5×11 | 0.900 | 150 | | 470 | 13×20 | 0.072 | 1,230 |
| | 470 | 8×12 | 0.180 | 410 | | 47 | 5×11 | 0.500 | 160 | | 680 | 13×25 | 0.070 | 1,450 |
| | 680 | 8×16 | 0.140 | 580 | | 68 | 6.3×11 | 0.420 | 180 | | 820 | 16×26 | 0.070 | 1,550 |
| | 820 | 8×20 | 0.120 | 680 | | 100 | 6.3×11 | 0.250 | 220 | | 1,000 | 16×26 | 0.070 | 1,960 |
| | 1,000 | 10×13 | 0.090 | 730 | | 150 | 8×12 | 0.220 | 330 | | 0.47 | 5×11 | 6.0 | 68 |
| | 2,200 | 13×20 | 0.045 | 1,455 | | 220 | 8×12 | 0.200 | 450 | | 1.0 | 5×11 | 5.5 | 80 |
| | 3,300 | 13×25 | 0.038 | 1,650 | | 330 | 10×13 | 0.090 | 670 | | 2.2 | 5×11 | 4.5 | 90 |
| | 4,700 | 16×26 | 0.030 | 2,310 | | 470 | 10×16 | 0.068 | 950 | | 3.3 | 5×11 | 4.0 | 95 |
| | 6,800 | 16×32 | 0.017 | 2,880 | | 680 | 10×20 | 0.055 | 1,100 | | 4.7 | 5×11 | 3.0 | 110 |
| | 10,000 | 16×36 | 0.017 | 3,160 | | 820 | 10×20 | 0.050 | 1,250 | | 6.8 | 5×11 | 2.8 | 120 |
| 15,000 | 18×36 | 0.015 | 3,690 | 1,000 | 13×20 | 0.045 | 1,450 | 10 | 5×11 | 2.0 | 145 | | | |
| 10 | 22 | 5×11 | 1.0 | 100 | 2,200 | 16×32 | 0.022 | 2,520 | 22 | 6.3×11 | 1.0 | 220 | | |
| | 33 | 5×11 | 1.0 | 125 | 3,300 | 18×36 | 0.019 | 3,020 | 33 | 6.3×11 | 0.900 | 250 | | |
| | 47 | 5×11 | 1.0 | 150 | 4,700 | 18×36 | 0.015 | 3,720 | 47 | 8×12 | 0.850 | 305 | | |
| | 100 | 5×11 | 0.500 | 165 | 6,800 | 18×40 | 0.034 | 4,087 | 68 | 8×12 | 0.700 | 365 | | |
| | 150 | 6.3×11 | 0.450 | 220 | 4.7 | 5×11 | 4.2 | 110 | 100 | 10×13 | 0.270 | 535 | | |
| | 220 | 6.3×11 | 0.350 | 275 | 6.8 | 5×11 | 2.8 | 120 | 150 | 10×16 | 0.220 | 650 | | |
| | 330 | 8×12 | 0.180 | 470 | 10 | 5×11 | 1.2 | 135 | 220 | 10×20 | 0.130 | 860 | | |
| | 470 | 8×12 | 0.120 | 560 | 22 | 5×11 | 0.800 | 150 | 330 | 13×20 | 0.090 | 1,010 | | |
| | 680 | 10×13 | 0.100 | 710 | 33 | 5×11 | 0.500 | 180 | 470 | 13×25 | 0.087 | 1,520 | | |
| | 820 | 10×16 | 0.080 | 850 | 47 | 6.3×11 | 0.400 | 220 | 680 | 16×26 | 0.065 | 1,700 | | |
| | 1,000 | 10×16 | 0.068 | 1,050 | 68 | 6.3×11 | 0.300 | 250 | 1,000 | 16×32 | 0.036 | 2,270 | | |
| | 2,200 | 13×20 | 0.038 | 1,670 | 100 | 6.3×11 | 0.230 | 286 | 0.47 | 5×11 | 8.0 | 68 | | |
| | 3,300 | 13×25 | 0.030 | 1,950 | 150 | 8×12 | 0.180 | 550 | 1.0 | 5×11 | 6.0 | 80 | | |
| | 4,700 | 16×26 | 0.022 | 2,310 | 220 | 10×13 | 0.090 | 730 | 2.2 | 5×11 | 5.5 | 90 | | |
| | 6,800 | 16×32 | 0.020 | 3,050 | 330 | 10×16 | 0.068 | 860 | 3.3 | 5×11 | 4.5 | 95 | | |
| 10,000 | 18×36 | 0.016 | 3,250 | 470 | 10×20 | 0.052 | 1,056 | 4.7 | 6.3×11 | 4.0 | 130 | | | |
| 16 | 10 | 5×11 | 2.0 | 125 | 680 | 13×20 | 0.045 | 1,250 | 6.8 | 6.3×11 | 3.8 | 145 | | |
| | 22 | 5×11 | 1.0 | 150 | 820 | 13×20 | 0.040 | 1,400 | 10 | 6.3×11 | 3.2 | 180 | | |
| | 33 | 5×11 | 1.0 | 150 | 1,000 | 13×25 | 0.031 | 1,870 | 22 | 8×12 | 2.5 | 285 | | |
| | 47 | 5×11 | 0.500 | 150 | 2,200 | 16×32 | 0.019 | 2,530 | 33 | 10×13 | 2.0 | 385 | | |
| | 100 | 6.3×11 | 0.250 | 220 | 3,300 | 18×36 | 0.025 | 3,390 | 47 | 10×16 | 1.5 | 510 | | |
| | 150 | 6.3×11 | 0.220 | 300 | 4,700 | 18×40 | 0.016 | 4,130 | 68 | 10×20 | 1.0 | 600 | | |
| | 220 | 8×12 | 0.180 | 410 | 0.47 | 5×11 | 6.0 | 68 | 100 | 13×20 | 0.800 | 900 | | |
| | 330 | 8×12 | 0.160 | 470 | 1.0 | 5×11 | 5.0 | 80 | 150 | 13×25 | 0.650 | 1,250 | | |
| | 470 | 10×13 | 0.090 | 740 | 2.2 | 5×11 | 4.0 | 90 | 220 | 16×26 | 0.090 | 1,450 | | |
| | 680 | 10×16 | 0.075 | 800 | 3.3 | 5×11 | 3.2 | 95 | 330 | 16×32 | 0.090 | 1,550 | | |
| | 820 | 10×20 | 0.065 | 1,050 | 4.7 | 5×11 | 2.7 | 110 | 470 | 18×36 | 0.060 | 1,980 | | |
| | 1,000 | 10×20 | 0.052 | 1,230 | 6.8 | 5×11 | 2.5 | 120 | | | | | | |
| | 2,200 | 13×25 | 0.032 | 1,960 | 10 | 5×11 | 2.0 | 145 | | | | | | |
| | 3,300 | 16×26 | 0.022 | 2,520 | 22 | 5×11 | 1.5 | 170 | | | | | | |
| | 4,700 | 16×32 | 0.019 | 3,020 | 33 | 6.3×11 | 1.0 | 220 | | | | | | |
| 6,800 | 18×36 | 0.015 | 3,720 | 47 | 6.3×11 | 0.800 | 260 | | | | | | | |

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◆ 标准品一览表 Standard Ratings

| WV (V _{dc}) | Cap. (μF) | Case Size ΦD×L(mm) | Rated ripple current (mA _{rms}) 105°C/100KHz |
|-----------------------|-----------|--------------------|---|
| 160 | 10 | 10X16 | 320 |
| | 22 | 10X20 | 500 |
| | 33 | 10X20 | 650 |
| | 47 | 10X20 | 750 |
| | 68 | 12.5X20 | 1180 |
| | 82 | 12.5X25 | 1,420 |
| | 100 | 16X20 | 1,420 |
| | 150 | 16X25 | 1,890 |
| | 220 | 18X25 | 2,370 |
| 200 | 6.8 | 8X12 | 204 |
| | 10 | 10X16 | 320 |
| | 22 | 10X16 | 453 |
| | 22 | 10X20 | 500 |
| | 33 | 10X16 | 589 |
| | 33 | 10X20 | 650 |
| | 47 | 12.5X20 | 980 |
| | 68 | 12.5X25 | 1,300 |
| | 68 | 16X20 | 1,300 |
| | 82 | 16X20 | 1,380 |
| | 100 | 16X20 | 1,420 |
| | 150 | 16X25 | 1,890 |
| 220 | 18X30 | 2,648 | |
| 250 | 4.7 | 8X12 | 160 |
| | 6.8 | 8X12 | 215 |
| | 6.8 | 10X12.5 | 250 |
| | 10 | 10X16 | 320 |
| | 22 | 10X16 | 453 |
| | 22 | 10X20 | 500 |
| | 33 | 10X16 | 640 |
| | 33 | 12.5X20 | 800 |
| | 47 | 12.5X20 | 980 |
| | 47 | 12.5X20 | 1,200 |
| | 68 | 16X20 | 1,300 |
| | 82 | 16X20 | 1,380 |
| | 100 | 16X25 | 1,530 |
| | 150 | 18X25 | 1,940 |

| WV (V _{dc}) | Cap. (μF) | Case Size ΦD×L(mm) | Rated ripple current (mA _{rms}) 105°C/100KHz |
|-----------------------|-----------|--------------------|---|
| 350 | 5 | 10X12.5 | 150 |
| | 5.6 | 10X12.5 | 180 |
| | 6.8 | 10X16 | 280 |
| | 10 | 10X20 | 350 |
| | 22 | 12.5X20 | 650 |
| | 33 | 16X20 | 900 |
| | 47 | 16X20 | 1,080 |
| | 68 | 18X25 | 1,470 |
| | 82 | 18X25 | 1,530 |
| | 400 | 1 | 8X12 |
| 1.5 | | 8X12 | 90 |
| 1.5 | | 10X12.5 | 100 |
| 1.8 | | 8X12 | 95 |
| 1.8 | | 10X12.5 | 120 |
| 2.2 | | 8X12 | 95 |
| 2.2 | | 10X12.5 | 140 |
| 3.3 | | 8X12 | 130 |
| 3.3 | | 10X12.5 | 150 |
| 4.7 | | 8X12 | 171 |
| 4.7 | | 10X16 | 220 |
| 5.6 | | 10X16 | 250 |
| 6.8 | | 10X16 | 280 |
| 10 | | 10X16 | 317 |
| 10 | | 10X20 | 350 |
| 15 | | 12.5X25 | 487 |
| 15 | | 12.5X20 | 550 |
| 22 | | 12.5X20 | 760 |
| 33 | | 12.5X25 | 861 |
| 33 | | 16X20 | 900 |
| 47 | 12.5X25 | 1,027 | |
| 47 | 16X20 | 1,073 | |
| 47 | 16X25 | 1,180 | |
| 47 | 18X20 | 1,180 | |
| 68 | 16X25 | 1,374 | |
| 68 | 16X30 | 1,488 | |
| 68 | 18X25 | 1,470 | |

| WV (V _{dc}) | Cap. (μF) | Case Size ΦD×L(mm) | Rated ripple current (mA _{rms}) 105°C/100KHz |
|-----------------------|-----------|--------------------|---|
| 450 | 2.2 | 8X12 | 105 |
| | 4.7 | 8X16 | 176 |
| | 4.7 | 10X20 | 220 |
| | 5.6 | 10X20 | 250 |
| | 6.8 | 10X12.5 | 228 |
| | 6.8 | 10X20 | 280 |
| | 10 | 10X20 | 397 |
| | 10 | 12.5X20 | 450 |
| | 15 | 12.5X25 | 600 |
| | 22 | 12.5X25 | 698 |
| | 22 | 16X20 | 730 |
| | 33 | 16X20 | 891 |
| | 33 | 16X25 | 980 |
| | 47 | 16X25 | 1,121 |
| | 47 | 18X20 | 1,093 |
| | 47 | 18X25 | 1,200 |

※铝电解电容器由于在纹波电流叠加时自我发热、温度上升而老化，中心温度每升温5°C寿命减少一半。要想保持长寿命请在使用过程中降低纹波电流
 The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

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