

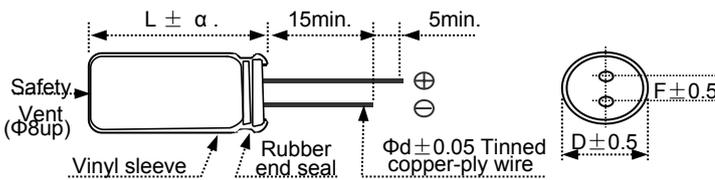
HF Series

- Endurance with ripple current:125°C 3000 hours
- 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 ~ +125°C (10 ~ 250V.DC) | -25 ~ +125°C (350~450V.DC) |
| 额定工作电压范围 Rated Voltage Range | 10 ~ 450V.DC | |
| 静电容量允许偏差 Capacitance Tolerance | ±20%(M) (at 20°C,120Hz) | |
| 漏电流 Leakage Current | 10 ~ 100V.DC | 160 ~ 450V.DC |
| | I≤0.01CV or 3μA, 二者取最大值 (施加额定工作电压2分钟后) Whichever is greater (After 2 minutes application of rated voltage) | |
| 损耗角正切值tanδ Dissipation Factor | 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°C) | |
| | Rated voltage(V) | 10 16 25 35 50 63 80 100 160 ~ 250 350~450 |
| 低温特性 LOW Temperature Characteristics (Max.Impedance Ratio) | tanδ(Max.) | 0.20 0.16 0.14 0.12 0.10 0.10 0.08 0.08 0.20 0.24 |
| | 标称容量超过1000μF,则每增加1000 μ F, 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°C,120Hz) | |
| 耐久性 Endurance | 在125°C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3000小时, 经恢复到20°C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°C after applied within maximum allowable ripple current and not over rated voltage range for 3000 hours at 125°C. | |
| | Capacitance change | ≤ ±25% of the initial value |
| | D.F.(tanδ) | ≤ 200% of the initial specified value |
| 高温储存特性 Shelf Life | Leakage current | ≤ The initial specified value |
| | 在125°C环境中, 不施加电压条件下储存1000小时(350~450V为500小时), 经恢复到20°C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°C after exposing them for 1000 hours at 125°C (500hours to 350~450V) without voltage applied. | |
| | Rated voltage | 10 ~ 100V.DC 160 ~ 450V.DC |
| 低温特性 LOW Temperature Characteristics (Max.Impedance Ratio) | Capacitance change | ≤ ±30% of the initial value ≤ ±20% of the initial value |
| | D.F.(tanδ) | ≤ 300% of the initial specified value ≤ 200% of the initial specified value |
| | Leakage current | ≤ The initial specified value ≤ 200% of the initial specified value |

◆ 尺寸图 (单位: mm) DIMENSIONS (Unit:mm)



| | | | | |
|----|-----|-----|-----|-----|
| ΦD | 8 | 10 | 13 | 16 |
| F | 3.5 | 5.0 | 5 | 7.5 |
| Φd | 0.5 | 0.6 | 0.6 | 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 |
| 10~100 | 4.7~100 | 0.20 | 0.66 | 0.90 | 1.00 |
| | 220~470 | 0.40 | 0.76 | 0.93 | 1.00 |
| | 1000 | 0.60 | 0.84 | 0.96 | 1.00 |
| | 2200~3300 | 0.20 | 0.60 | 0.88 | 1.00 |
| | 4700 | 0.30 | 0.65 | 0.90 | 1.00 |
| 160 ~ 450 | 4.7~33 | 0.25 | 0.61 | 0.88 | 1.00 |
| | 47~150 | 0.35 | 0.66 | 0.89 | 1.00 |

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◆ 标准品一览表 Standard Ratings

| WV(V) cap.(μF) | 10(1A) | | 16(1C) | | 25(1E) | | 35(1V) | |
|-------------------|---------------------------|--|---------------------------|--|---------------------------|--|---------------------------|--|
| | Case size ΦD×L (mm) | Maximum allowable ripple current at125°C/100kHz (mA.r.m.s) |
| 22 | | | | | 5X11 | 108 | 5X11 | 115 |
| 33 | | | | | 5X11 | 158 | 6.3X11 | 185 |
| 47 | | | | | 5X11 | 180 | 6.3X11 | 198 |
| 100 | | | 8×12 | 311 | 8×12 | 311 | 8×12 | 312 |
| | | | | | | | 10×13 | 560 |
| 220 | 8×12 | 310 | 10×13 | 560 | 10×13 | 562 | 10×16 | 716 |
| 330 | 10×13 | 560 | 10×13 | 564 | 10×16 | 713 | 10×20 | 857 |
| 470 | 10×13 | 565 | 10×16 | 714 | 10×20 | 858 | 13×20 | 976 |
| 1,000 | 10×20 | 860 | 13×20 | 975 | 13×25 | 1217 | 16×26 | 1461 |
| 2,200 | 13×25 | 1220 | 16×26 | 1460 | 16×32 | 1676 | | |
| 3,300 | 16×26 | 1469 | 16×32 | 1681 | | | | |
| 4,700 | 16×32 | 1688 | | | | | | |

| WV(V) cap.(μF) | 50(1H) | | 63(1J) | | 80(1K) | | 100(2A) | |
|-------------------|---------------------------|--|---------------------------|--|---------------------------|--|---------------------------|--|
| | Case size ΦD×L (mm) | Maximum allowable ripple current at125°C/100kHz (mA.r.m.s) |
| 4.7 | | | | | | | 8×12 | 119 |
| 10 | 8×12 | 142 | | | | | 8×12 | 162 |
| 22 | 8×12 | 178 | 8×12 | 206 | 8×12 | 227 | 10×13 | 434 |
| 33 | 8×12 | 224 | 8×12 | 250 | 10×13 | 437 | 10×13 | 442 |
| 47 | 8×12 | 295 | 10×13 | 466 | 10×13 | 493 | 10×16 | 569 |
| 100 | 10×13 | 481 | 10×16 | 623 | 10×20 | 713 | 13×20 | 892 |
| 220 | 10×20 | 790 | 13×20 | 888 | 13×25 | 1033 | 16×26 | 1352 |
| 330 | 13×20 | 948 | 13×25 | 1118 | 13×30 | 1253 | 16×32 | 1513 |
| 470 | 13×25 | 1163 | 13×30 | 1316 | 16×26 | 1352 | | |
| 1,000 | 16×32 | 1429 | 16×32 | 1567 | | | | |

| WV(V) cap.(μF) | 160(2C) | | 200(2D) | | 250(2E) | | 350(2V) | | 400(2G) | | 450(2W) | |
|-------------------|---------------------------|--|---------------------------|--|---------------------------|--|---------------------------|--|---------------------------|--|---------------------------|--|
| | Case size ΦD×L (mm) | Maximum allowable ripple current at125°C/100kHz (mA.r.m.s) |
| 4.7 | | | | | | | 10×20 | 49 | 10×20 | 43 | 10×25 | 53 |
| 10 | | | 10×20 | 71 | 10×20 | 67 | 10×25 | 77 | 10×25 | 64 | 13×20 | 79 |
| 22 | 10×20 | 104 | 10×25 | 113 | 13×20 | 114 | 16×32 | 129 | 13×30 | 129 | 16×26 | 140 |
| 33 | 10×25 | 140 | 13×20 | 142 | 13×25 | 155 | 16×26 | 171 | 16×26 | 162 | 16×32 | 185 |
| 47 | 13×20 | 170 | 13×25 | 185 | 16×25 | 203 | 16×32 | 221 | 16×32 | 216 | | |
| 68 | 13×25 | 222 | 16×21 | 230 | 16×32 | 264 | | | | | | |
| 100 | 16×26 | 296 | 16×26 | 282 | | | | | | | | |
| 150 | 16×32 | 393 | | | | | | | | | | |

※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℃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.