



VKL

- ◆耐高温 长寿命 耐高频大纹波电流 高端电源专用
- ◆125°C环境下2000~5000小时
- ◆符合AEC-Q200 RoHS指令对应
- ◆适用于高密度 全自动表面贴装 高温回流焊对应

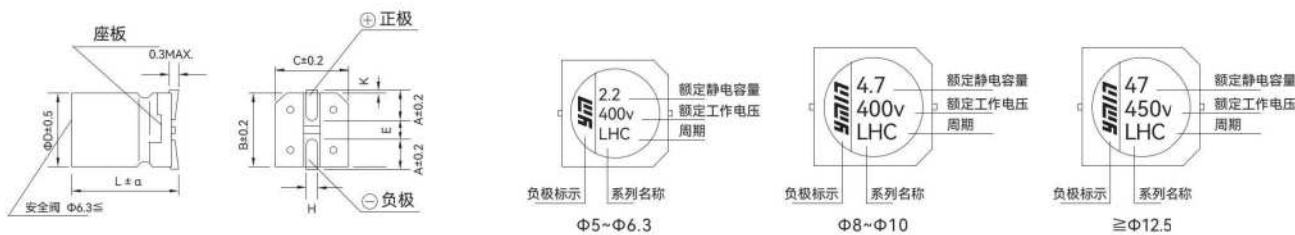


■ 主要技术参数

| 项目 | 特性 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|----------|--------|-----------|--------|------|------|----|---------------------|------|------|------|------|------|------|------|---------|-----|-----|-----|-----|-----|-----|--|---------------------|------|------|------|------|------|------|--|
| 使用温度范围 | ≤100V -40~+125°C ; 160~450V -25~+125°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 标称电压范围 | 10~450V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 容量允许偏差 | ±20% (25±2°C 120Hz) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 漏电流(µA) | 10~100WV $I \leq 0.01CV$ or $3\mu A$ 取大者 C:标称容量(µF) V:额定电压(V) 2分钟读数 160~450WV $I \leq 0.02CV+10(\mu A)$ C:标称容量(µF) V:额定电压(V) 2分钟读数 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 损耗角正切值 (25±2°C 120Hz) | <table border="1"> <tr> <td>额定电压(V)</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>80</td> </tr> <tr> <td>tg δ</td> <td>0.28</td> <td>0.24</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.14</td> <td>0.12</td> </tr> <tr> <td>额定电压(V)</td> <td>100</td> <td>160</td> <td>200</td> <td>250</td> <td>400</td> <td>450</td> <td></td> </tr> <tr> <td>tg δ</td> <td>0.12</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> <td>0.20</td> <td>0.20</td> <td></td> </tr> </table> | 额定电压(V) | 10 | 16 | 25 | 35 | 50 | 63 | 80 | tg δ | 0.28 | 0.24 | 0.20 | 0.16 | 0.14 | 0.14 | 0.12 | 额定电压(V) | 100 | 160 | 200 | 250 | 400 | 450 | | tg δ | 0.12 | 0.15 | 0.15 | 0.15 | 0.20 | 0.20 | |
| | 额定电压(V) | 10 | 16 | 25 | 35 | 50 | 63 | 80 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | tg δ | 0.28 | 0.24 | 0.20 | 0.16 | 0.14 | 0.14 | 0.12 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 额定电压(V) | 100 | 160 | 200 | 250 | 400 | 450 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| tg δ | 0.12 | 0.15 | 0.15 | 0.15 | 0.20 | 0.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 标称容量超过1000µF者, 则每增加1000µF, 损耗角正切值增加0.02 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 温度特性 (120Hz) | <table border="1"> <tr> <td>额定电压(V)</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>80</td> </tr> <tr> <td>阻抗比Z(-40°C)/Z(20°C)</td> <td>6</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> <tr> <td>额定电压(V)</td> <td>100</td> <td>160</td> <td>200</td> <td>250</td> <td>400</td> <td>450</td> <td></td> </tr> <tr> <td>阻抗比Z(-40°C)/Z(20°C)</td> <td>3</td> <td>5</td> <td>5</td> <td>5</td> <td>7</td> <td>7</td> <td></td> </tr> </table> | 额定电压(V) | 10 | 16 | 25 | 35 | 50 | 63 | 80 | 阻抗比Z(-40°C)/Z(20°C) | 6 | 4 | 3 | 3 | 3 | 3 | 3 | 额定电压(V) | 100 | 160 | 200 | 250 | 400 | 450 | | 阻抗比Z(-40°C)/Z(20°C) | 3 | 5 | 5 | 5 | 7 | 7 | |
| | 额定电压(V) | 10 | 16 | 25 | 35 | 50 | 63 | 80 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 阻抗比Z(-40°C)/Z(20°C) | 6 | 4 | 3 | 3 | 3 | 3 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 额定电压(V) | 100 | 160 | 200 | 250 | 400 | 450 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 阻抗比Z(-40°C)/Z(20°C) | 3 | 5 | 5 | 5 | 7 | 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 在125°C烘箱中, 施加含额定纹波电流的额定电压, 持续规定时间后, 置于常温16小时后测试, 测试温度: 25±2°C, 电容器的性能应满足如下要求 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 耐久性 | 容量变化率 | 10~100WV 在初始值的±30%以内 160~450WV 在初始值的±20%以内 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 损耗角正切值 | 10~100WV 在初始值的300%以内 160~450WV 在初始值的200%以内 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 漏电流 | 在规定值以内 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 负荷寿命 | 10~100WV | | | 160~450WV | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 外形尺寸 | 负荷寿命 | 外形尺寸 | 负荷寿命 | 外形尺寸 | 负荷寿命 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ΦD=5、6.3 | | 2000小时 | ΦD=5、6.3 | 2000小时 | ΦD=8 | 3000小时 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ΦD=8、10 | 3000小时 | ΦD=8 | 3000小时 | ΦD=10 | 5000小时 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ΦD≥12.5 | 5000小时 | ΦD≥10 | 5000小时 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 高温储存 | 在105°C下, 储存1000小时, 置于常温16小时后测试, 测试温度25±2°C, 电容器的性能应满足如下要求 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 容量变化率 | 在初始值的±20%以内 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 漏电流 | 在规定值的200%以下 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



■ 产品尺寸图 (单位: mm)



| ΦD | L | B | C | A | H | E | K | α |
|------|------|------|------|-----|-----------|-----|----------|------|
| 5 | 10 | 5.3 | 5.3 | 2.1 | 0.75±0.10 | 1.3 | 0.7MAX | ±0.5 |
| 5 | 12 | 5.3 | 5.3 | 2.1 | 0.75±0.10 | 1.3 | 0.7MAX | ±0.5 |
| 6.3 | 10 | 6.6 | 6.6 | 2.6 | 0.75±0.10 | 1.8 | 0.7MAX | ±0.5 |
| 6.3 | 12 | 6.6 | 6.6 | 2.6 | 0.75±0.10 | 1.8 | 0.7MAX | ±0.5 |
| 8 | 10 | 8.3 | 8.3 | 3.4 | 0.90±0.20 | 3.1 | 0.7MAX | ±0.5 |
| 8 | 12.5 | 8.3 | 8.3 | 3.4 | 0.90±0.20 | 3.1 | 0.7MAX | ±0.5 |
| 8 | 14.5 | 8.3 | 8.3 | 3.4 | 0.90±0.20 | 3.1 | 0.7MAX | ±0.5 |
| 8 | 16.5 | 8.3 | 8.3 | 3.4 | 0.90±0.20 | 3.1 | 0.7MAX | ±0.5 |
| 8 | 20.5 | 8.3 | 8.3 | 3.4 | 0.90±0.20 | 3.1 | 0.7MAX | ±0.5 |
| 10 | 10 | 10.3 | 10.3 | 3.5 | 0.90±0.20 | 4.6 | 0.7MAX | ±0.5 |
| 10 | 13 | 10.3 | 10.3 | 3.5 | 0.90±0.20 | 4.6 | 0.7MAX | ±0.5 |
| 10 | 14.5 | 10.3 | 10.3 | 3.5 | 0.90±0.20 | 4.6 | 0.7MAX | ±0.5 |
| 10 | 16.5 | 10.3 | 10.3 | 3.5 | 0.90±0.20 | 4.6 | 0.7MAX | ±0.5 |
| 10 | 21 | 10.3 | 10.3 | 3.5 | 0.90±0.20 | 4.6 | 0.7MAX | ±0.5 |
| 12.5 | 13.5 | 13.0 | 13.0 | 4.7 | 0.90±0.30 | 4.4 | 0.7MAX | ±1.0 |
| 12.5 | 14.5 | 13.0 | 13.0 | 4.7 | 0.90±0.30 | 4.4 | 0.7MAX | ±1.0 |
| 12.5 | 16.5 | 13.0 | 13.0 | 4.7 | 0.90±0.30 | 4.4 | 0.7MAX | ±1.0 |
| 12.5 | 21 | 13.0 | 13.0 | 4.7 | 0.90±0.30 | 4.4 | 0.7MAX | ±1.0 |
| 16 | 16.5 | 17.0 | 17.0 | 5.5 | 1.20±0.30 | 6.7 | 0.7±0.30 | ±1.0 |
| 16 | 21 | 17.0 | 17.0 | 5.5 | 1.20±0.30 | 6.7 | 0.7±0.30 | ±1.0 |
| 18 | 16.5 | 19.0 | 19.0 | 6.7 | 1.20±0.30 | 6.7 | 0.7±0.30 | ±1.0 |
| 18 | 21 | 19.0 | 19.0 | 6.7 | 1.20±0.30 | 6.7 | 0.7±0.30 | ±1.0 |

■ 频率修正因子

| 系数 | 频率(Hz) | 120 | 1K | 10K | 100K≤ |
|--------|----------|------|------|------|-------|
| | 0.47~8.2 | 0.42 | 0.60 | 0.80 | 1.00 |
| 10~39 | 0.45 | 0.75 | 0.90 | 1.00 | |
| 47~180 | 0.50 | 0.80 | 0.95 | 1.00 | |
| 220以上 | 0.60 | 0.85 | 0.95 | 1.00 | |



VKL

■ 标准品一览表

| 电压(V) | 10 | | 16 | | 25 | | 35 | | 50 | | 63 | |
|------------------|----------------|--------------------------------------|----------------|--------------------------------------|----------------|--------------------------------------|----------------|--------------------------------------|----------------|--------------------------------------|----------------|--------------------------------------|
| 项目 容量 (μF) | 尺寸 ΦD×L(mm) | 纹波电流 (mA r.m.s./ 125°C 100kHz) | 尺寸 ΦD×L(mm) | 纹波电流 (mA r.m.s./ 125°C 100kHz) | 尺寸 ΦD×L(mm) | 纹波电流 (mA r.m.s./ 125°C 100kHz) | 尺寸 ΦD×L(mm) | 纹波电流 (mA r.m.s./ 125°C 100kHz) | 尺寸 ΦD×L(mm) | 纹波电流 (mA r.m.s./ 125°C 100kHz) | 尺寸 ΦD×L(mm) | 纹波电流 (mA r.m.s./ 125°C 100kHz) |
| 1.0 | | | | | | | | | 5×10 | 32 | 5×10 | 32 |
| 1.5 | | | | | | | | | 5×10 | 32 | 5×10 | 32 |
| 1.8 | | | | | | | | | 5×10 | 32 | 5×10 | 32 |
| 2.2 | | | | | | | | | 5×10 | 45 | 5×10 | 45 |
| 2.7 | | | | | | | | | 5×10 | 45 | 5×10 | 45 |
| 3.3 | | | | | | | | | 5×10 | 63 | 5×10 | 63 |
| 3.9 | | | | | | | | | 5×10 | 63 | 5×10 | 63 |
| 4.7 | | | | | | | | | 5×10 | 90 | 5×10 | 90 |
| 5.6 | | | | | | | | | 5×10 | 90 | 5×10 | 90 |
| 6.8 | | | | | | | | | 5×10 | 94 | 5×10 | 94 |
| 8.2 | | | | | | | | | 5×10 | 98 | 5×10 | 98 |
| 10 | 5×10 | 72 | 5×10 | 72 | 5×10 | 72 | 5×10 | 81 | 5×10 | 98 | 5×10 | 108 |
| 15 | | | | | | | | | 5×10 | 108 | 5×10 | 118 |
| 22 | 5×10 | 72 | 5×10 | 72 | 5×10 | 72 | 5×10 | 81 | 6.3×10 | 170 | 6.3×10 | 180 |
| 33 | | | | | | | | | 6.3×10 | 245 | 6.3×12 | 265 |
| 33 | | | | | | | | | | | 8×10 | 280 |
| 47 | 5×10 | 114 | 5×10 | 114 | 5×10 | 114 | 6.3×10 | 240 | 6.3×12 | 320 | 8×10 | 420 |
| 47 | | | | | | | | | 8×10 | 330 | | |
| 56 | | | | | | | | | 8×10 | 330 | 8×10 | 420 |
| 100 | 5×10 | 114 | 6.3×10 | 200 | 6.3×10 | 240 | 8×10 | 324 | 8×12.5 | 500 | 8×16.5 | 590 |
| 100 | | | | | | | | | 10×10 | 550 | 10×13 | 590 |
| 150 | 6.3×10 | 162 | 6.3×10 | 240 | 8×10 | 324 | 8×12.5 | 380 | | | | |
| 150 | 6.3×10 | 200 | | | | | 10×10 | 324 | | | | |
| 220 | 6.3×10 | 324 | 8×10 | 324 | 8×12.5 | 380 | 8×12.5 | 650 | 10×16.5 | 940 | 10×21 | 860 |
| 330 | 6.3×12 | 380 | 8×10 | 380 | 8×14.5 | 650 | 10×13 | 850 | 12.5×16.5 | 980 | 12.5×21 | 1050 |
| 330 | 8×10 | 324 | | | 10×13 | 650 | | | | | | |
| 470 | 8×10 | 620 | 8×12.5 | 650 | 10×13 | 850 | 10×16.5 | 1000 | 12.5×21 | 1050 | 16×21 | 1570 |
| 1000 | 10×13 | 1000 | 10×16.5 | 1000 | 10×21 | 1155 | 12.5×21 | 1500 | 18×21 | 2290 | | |
| 2200 | 12.5×16.5 | 1500 | 12.5×21 | 1500 | 18×21 | 2400 | | | | | | |
| 3300 | 12.5×21 | 1780 | 18×21 | 2400 | | | | | | | | |
| 4700 | 18×21 | 2400 | | | | | | | | | | |



VKL

■ 标准品一览表

| 电压(V) | 80 | | 100 | | 160 | | 200 | | 250 | | 400 | |
|------------------|----------------|--------------------------------------|----------------|--------------------------------------|----------------|--------------------------------------|----------------|--------------------------------------|----------------|--------------------------------------|----------------|--------------------------------------|
| 项目 容量 (μF) | 尺寸 ΦD×L(mm) | 纹波电流 (mA r.m.s./ 125°C 100kHz) | 尺寸 ΦD×L(mm) | 纹波电流 (mA r.m.s./ 125°C 100kHz) | 尺寸 ΦD×L(mm) | 纹波电流 (mA r.m.s./ 125°C 100kHz) | 尺寸 ΦD×L(mm) | 纹波电流 (mA r.m.s./ 125°C 100kHz) | 尺寸 ΦD×L(mm) | 纹波电流 (mA r.m.s./ 125°C 100kHz) | 尺寸 ΦD×L(mm) | 纹波电流 (mA r.m.s./ 125°C 100kHz) |
| 0.47 | | | | | 6.3×10 | 48 | 6.3×10 | 68 | 6.3×10 | 68 | 6.3×10 | 54 |
| 1.0 | 5×10 | 32 | 5×10 | 32 | 6.3×10 | 48 | 6.3×10 | 68 | 6.3×10 | 68 | 6.3×10 | 54 |
| 1.5 | 5×10 | 32 | 5×10 | 32 | 6.3×10 | 48 | 6.3×10 | 68 | 6.3×10 | 68 | 6.3×10 | 68 |
| 1.8 | 5×10 | 32 | 5×10 | 32 | 6.3×10 | 68 | 6.3×10 | 72 | 6.3×10 | 81 | 6.3×10 | 68 |
| 2.2 | 5×10 | 45 | 5×10 | 45 | 6.3×10 | 68 | 6.3×10 | 81 | 6.3×10 | 81 | 6.3×10 | 80 |
| 2.7 | 5×10 | 45 | 5×10 | 45 | 6.3×10 | 68 | 6.3×10 | 81 | 6.3×10 | 81 | 8×10 | 100 |
| 3.3 | 5×10 | 63 | 5×10 | 63 | 6.3×10 | 72 | 6.3×10 | 85 | 6.3×10 | 90 | 8×10 | 110 |
| 3.9 | 5×10 | 63 | 5×10 | 63 | 6.3×10 | 72 | 6.3×10 | 90 | 6.3×12 | 110 | 8×12.5 | 125 |
| 4.7 | 5×10 | 90 | 5×10 | 90 | 6.3×10 | 81 | 6.3×12 | 110 | 6.3×12 | 110 | 8×12.5 | 125 |
| 4.7 | | | | | | | | | 8×10 | 90 | 10×10 | 125 |
| 5.6 | 5×10 | 90 | 6.3×10 | 90 | 6.3×10 | 85 | 8×10 | 117 | 8×10 | 117 | 8×14.5 | 130 |
| 6.8 | 5×10 | 90 | 6.3×10 | 90 | 6.3×12 | 90 | 8×10 | 117 | 8×10 | 162 | 10×13 | 208 |
| 8.2 | 5×10 | 90 | 6.3×10 | 90 | 8×10 | 107 | 8×12.5 | 165 | 8×12.5 | 165 | 8×20.5 | 250 |
| 8.2 | | | | | | | 10×10 | 160 | 10×10 | 160 | 10×14.5 | 260 |
| 10 | 6.3×10 | 108 | 6.3×10 | 180 | 8×10 | 107 | 8×14.5 | 210 | 8×14.5 | 210 | 10×16.5 | 330 |
| 10 | | | | | | | 10×10 | 160 | | | 12.5×14.5 | 360 |
| 15 | 6.3×10 | 180 | 6.3×12 | 210 | 8×12.5 | 117 | 8×16.5 | 210 | 8×16.5 | 210 | 12.5×16.5 | 410 |
| 15 | | | 8×10 | 180 | | | | | | | | |
| 22 | 6.3×12 | 210 | 8×12.5 | 230 | 8×14.5 | 160 | 8×20.5 | 250 | 8×20.5 | 250 | 12.5×21 | 500 |
| 22 | 8×10 | 180 | 10×10 | 198 | 10×13 | 178 | 10×14.5 | 250 | 10×14.5 | 250 | | |
| 33 | 6.3×12 | 230 | 8×12.5 | 280 | 10×14.5 | 255 | 10×21 | 340 | 10×21 | 340 | 16×21 | 730 |
| 33 | 8×10 | 198 | 10×10 | 280 | | | | | | | | |
| 47 | 8×12.5 | 280 | 10×13 | 350 | 10×21 | 400 | 12.5×21 | 400 | 12.5×21 | 400 | 18×21 | 850 |
| 47 | 10×10 | 280 | | | | | | | | | | |
| 56 | 10×10 | 280 | 10×13 | 350 | 12.5×16.5 | 608 | 12.5×21 | 500 | 12.5×21 | 500 | | |
| 100 | 10×16.5 | 550 | 12.5×16.5 | 700 | 16×21 | 825 | 16×21 | 800 | 18×21 | 800 | | |
| 220 | 12.5×21 | 890 | 16×21 | 1155 | | | | | | | | |
| 330 | 12.5×21 | 1050 | 18×21 | 1400 | | | | | | | | |
| 470 | 18×21 | 1400 | | | | | | | | | | |

| 电压(V) | 450 | | 电压(V) | 450 | | 电压(V) | 450 | | 电压(V) | 450 | |
|------------------|----------------|--------------------------------------|------------------|----------------|--------------------------------------|------------------|----------------|--------------------------------------|------------------|----------------|--------------------------------------|
| 项目 容量 (μF) | 尺寸 ΦD×L(mm) | 纹波电流 (mA r.m.s./ 125°C 100kHz) | 项目 容量 (μF) | 尺寸 ΦD×L(mm) | 纹波电流 (mA r.m.s./ 125°C 100kHz) | 项目 容量 (μF) | 尺寸 ΦD×L(mm) | 纹波电流 (mA r.m.s./ 125°C 100kHz) | 项目 容量 (μF) | 尺寸 ΦD×L(mm) | 纹波电流 (mA r.m.s./ 125°C 100kHz) |
| 0.47 | 6.3×10 | 60 | 2.7 | 8×10 | 120 | 6.8 | 10×14.5 | 260 | 15 | 12.5×16.5 | 410 |
| 1.0 | 6.3×10 | 60 | 3.3 | 8×12.5 | 120 | 8.2 | 8×20.5 | 260 | 22 | 12.5×21 | 500 |
| 1.5 | 6.3×10 | 60 | 3.9 | 8×12.5 | 130 | 8.2 | 10×14.5 | 260 | 33 | 16×21 | 820 |
| 1.8 | 8×10 | 84 | 4.7 | 8×14.5 | 130 | 10 | 10×16.5 | 320 | 47 | 18×21 | 980 |
| 2.2 | 8×10 | 90 | 5.6 | 10×13 | 140 | 10 | 12.5×14.5 | 360 | | | |