

LOW IMPEDANCE

低阻抗品

- Low impedance with temperature range -55~+105°C  
低阻抗和适用于-55~+105°C的温度范围
- Load life of 2000 hours  
负荷寿命2000 小时
- Comply with the RoHS directive  
符合 RoHS 指令



SPECIFICATIONS 特性表

| Items 项目                            | Characteristics 主要特性  |                            |   |                          |   |                     |  |    |                     |        |                    |      |      |      |      |      |                    |           |      |      |      |      |      |               |           |                  |   |   |   |   |   |   |                    |    |   |   |   |   |   |
|-------------------------------------|---|----------------------------|---|--------------------------|---|---------------------|--|----|---------------------|--------|--------------------|------|------|------|------|------|--------------------|-----------|------|------|------|------|------|---------------|-----------|------------------|---|---|---|---|---|---|--------------------|----|---|---|---|---|---|
| Operation Temperature Range 使用温度范围  | -55 ~ +105°C  |                            |   |                          |   |                     |  |    |                     |        |                    |      |      |      |      |      |                    |           |      |      |      |      |      |               |           |                  |   |   |   |   |   |   |                    |    |   |   |   |   |   |
| Voltage Range 额定工作电压范围              | 6.3 ~ 50V   |                            |   |                          |   |                     |  |    |                     |        |                    |      |      |      |      |      |                    |           |      |      |      |      |      |               |           |                  |   |   |   |   |   |   |                    |    |   |   |   |   |   |
| Capacitance Range 静电容量范围            | 1 ~ 4700 μF   |                            |   |                          |   |                     |  |    |                     |        |                    |      |      |      |      |      |                    |           |      |      |      |      |      |               |           |                  |   |   |   |   |   |   |                    |    |   |   |   |   |   |
| Capacitance Tolerance 静电容量允许偏差      | ± 20% at 120Hz, 20°C  |                            |   |                          |   |                     |  |    |                     |        |                    |      |      |      |      |      |                    |           |      |      |      |      |      |               |           |                  |   |   |   |   |   |   |                    |    |   |   |   |   |   |
| Leakage Current 漏电流                 | Leakage current (∅4~∅10) ≤ 0.01CV or 3 μA, whichever is greater (after 2 minutes application of rated voltage)<br>Leakage current (∅12.5~∅16) ≤ 0.03CV or 4 μA, whichever is greater (after 1 minute application of rated voltage)<br>漏电流 (∅4~∅10) ≤ 0.01CV 或 3 μA, 取较大值 (施加额定工作电压2 分钟后)<br>漏电流 (∅12.5~∅16) ≤ 0.03CV 或 4 μA, 取较大值 (施加额定工作电压 1 分钟后)  |                            |   |                          |   |                     |  |    |                     |        |                    |      |      |      |      |      |                    |           |      |      |      |      |      |               |           |                  |   |   |   |   |   |   |                    |    |   |   |   |   |   |
| Dissipation Factor (tanδ) 损耗角正切     | Measurement frequency 测试频率: 120Hz, Temperature 温度: 20°C<br><table border="1"> <tr> <td>Rated Voltage (V) 额定工作电压</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>tan δ(max.)</td> <td>∅4~∅10</td> <td>0.22</td> <td>0.20</td> <td>0.18</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> </tr> <tr> <td>最大损耗角正切</td> <td>∅12.5~∅16</td> <td>0.26</td> <td>0.22</td> <td>0.18</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> </tr> </table>   | Rated Voltage (V) 额定工作电压   | 6.3                                       | 10                       | 16  | 25                  | 35                                     | 50 | tan δ(max.)         | ∅4~∅10 | 0.22               | 0.20 | 0.18 | 0.16 | 0.14 | 0.12 | 最大损耗角正切            | ∅12.5~∅16 | 0.26 | 0.22 | 0.18 | 0.16 | 0.14 | 0.12          |           |                  |   |   |   |   |   |   |                    |    |   |   |   |   |   |
| Rated Voltage (V) 额定工作电压            | 6.3   | 10                         | 16  | 25                       | 35  | 50                  |  |    |                     |        |                    |      |      |      |      |      |                    |           |      |      |      |      |      |               |           |                  |   |   |   |   |   |   |                    |    |   |   |   |   |   |
| tan δ(max.)                         | ∅4~∅10  | 0.22                       | 0.20                                      | 0.18                     | 0.16  | 0.14                | 0.12                                   |    |                     |        |                    |      |      |      |      |      |                    |           |      |      |      |      |      |               |           |                  |   |   |   |   |   |   |                    |    |   |   |   |   |   |
| 最大损耗角正切                             | ∅12.5~∅16   | 0.26                       | 0.22                                      | 0.18                     | 0.16  | 0.14                | 0.12                                   |    |                     |        |                    |      |      |      |      |      |                    |           |      |      |      |      |      |               |           |                  |   |   |   |   |   |   |                    |    |   |   |   |   |   |
| Stability at Low Temperature 低温特性   | Measurement frequency 测试频率: 120Hz<br><table border="1"> <tr> <td>Rated Voltage (V) 额定工作电压</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td rowspan="2">Impedance Ratio 阻抗比</td> <td rowspan="2">∅4~∅10</td> <td>Z(-25°C) / Z(20°C)</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z(-55°C) / Z(20°C)</td> <td>5</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> </tr> <tr> <td rowspan="2">ZT/Z20 (max.)</td> <td rowspan="2">∅12.5~∅16</td> <td>Z(-25°C)/Z(20°C)</td> <td>3</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z(-55°C) / Z(20°C)</td> <td>10</td> <td>8</td> <td>6</td> <td>4</td> <td>3</td> <td>3</td> </tr> </table> | Rated Voltage (V) 额定工作电压   | 6.3                                       | 10                       | 16  | 25                  | 35                                     | 50 | Impedance Ratio 阻抗比 | ∅4~∅10 | Z(-25°C) / Z(20°C) | 2    | 2    | 2    | 2    | 2    | Z(-55°C) / Z(20°C) | 5         | 4    | 4    | 3    | 3    | 3    | ZT/Z20 (max.) | ∅12.5~∅16 | Z(-25°C)/Z(20°C) | 3 | 3 | 2 | 2 | 2 | 2 | Z(-55°C) / Z(20°C) | 10 | 8 | 6 | 4 | 3 | 3 |
| Rated Voltage (V) 额定工作电压            | 6.3   | 10                         | 16  | 25                       | 35  | 50                  |  |    |                     |        |                    |      |      |      |      |      |                    |           |      |      |      |      |      |               |           |                  |   |   |   |   |   |   |                    |    |   |   |   |   |   |
| Impedance Ratio 阻抗比                 | ∅4~∅10  | Z(-25°C) / Z(20°C)         | 2   | 2                        | 2   | 2                   | 2                                      |    |                     |        |                    |      |      |      |      |      |                    |           |      |      |      |      |      |               |           |                  |   |   |   |   |   |   |                    |    |   |   |   |   |   |
|                                     |   | Z(-55°C) / Z(20°C)         | 5   | 4                        | 4   | 3                   | 3                                      | 3  |                     |        |                    |      |      |      |      |      |                    |           |      |      |      |      |      |               |           |                  |   |   |   |   |   |   |                    |    |   |   |   |   |   |
| ZT/Z20 (max.)                       | ∅12.5~∅16   | Z(-25°C)/Z(20°C)           | 3   | 3                        | 2   | 2                   | 2                                      | 2  |                     |        |                    |      |      |      |      |      |                    |           |      |      |      |      |      |               |           |                  |   |   |   |   |   |   |                    |    |   |   |   |   |   |
|                                     |   | Z(-55°C) / Z(20°C)         | 10  | 8                        | 6   | 4                   | 3                                      | 3  |                     |        |                    |      |      |      |      |      |                    |           |      |      |      |      |      |               |           |                  |   |   |   |   |   |   |                    |    |   |   |   |   |   |
| Load Life 高温负荷特性                    | After 2000 hrs. application of the rated voltage at 105°C, they meet the characteristics listed below.<br>在105°C 环境中施加额定工作电压2000 小时后, 电容器的特性符合下表的要求。<br><table border="1"> <tr> <td>Capacitance Change 静电容量变化率</td> <td>Within ± 30% of initialvalue 初始值的 ±30%以内</td> </tr> <tr> <td>Dissipation Factor 损耗角正切</td> <td>200% or less of initial specified value 不大于规范值的200%</td> </tr> <tr> <td>Leakage Current 漏电流</td> <td>initial specified value or less 不大于规范值</td> </tr> </table>  | Capacitance Change 静电容量变化率 | Within ± 30% of initialvalue 初始值的 ±30%以内  | Dissipation Factor 损耗角正切 | 200% or less of initial specified value 不大于规范值的200% | Leakage Current 漏电流 | initial specified value or less 不大于规范值 |    |                     |        |                    |      |      |      |      |      |                    |           |      |      |      |      |      |               |           |                  |   |   |   |   |   |   |                    |    |   |   |   |   |   |
| Capacitance Change 静电容量变化率          | Within ± 30% of initialvalue 初始值的 ±30%以内  |                            |   |                          |   |                     |  |    |                     |        |                    |      |      |      |      |      |                    |           |      |      |      |      |      |               |           |                  |   |   |   |   |   |   |                    |    |   |   |   |   |   |
| Dissipation Factor 损耗角正切            | 200% or less of initial specified value 不大于规范值的200%   |                            |   |                          |   |                     |  |    |                     |        |                    |      |      |      |      |      |                    |           |      |      |      |      |      |               |           |                  |   |   |   |   |   |   |                    |    |   |   |   |   |   |
| Leakage Current 漏电流                 | initial specified value or less 不大于规范值  |                            |   |                          |   |                     |  |    |                     |        |                    |      |      |      |      |      |                    |           |      |      |      |      |      |               |           |                  |   |   |   |   |   |   |                    |    |   |   |   |   |   |
| Shelf Life 高温贮存特性                   | After leaving capacitors under no load at 105°C for 1000 hours, they meet the specified value for load life characteristics listed above. 在105°C 环境中无负荷放置1000 小时后, 电容器的特性符合高温负荷特性中所列的规定值。   |                            |   |                          |   |                     |  |    |                     |        |                    |      |      |      |      |      |                    |           |      |      |      |      |      |               |           |                  |   |   |   |   |   |   |                    |    |   |   |   |   |   |
| Resistance to Soldering Heat 耐焊接热特性 | After reflow soldering and restored at room temperature, they meet the characteristics listed below.<br>经过回流焊并冷却至室温后, 电容器的特性符合下表的要求。<br><table border="1"> <tr> <td>Capacitance Change 静电容量变化率</td> <td>Within ± 10% of initial value 初始值的 ±10%以内</td> </tr> <tr> <td>Dissipation Factor 损耗角正切</td> <td>initial specified value or less 不大于规范值</td> </tr> <tr> <td>Leakage Current 漏电流</td> <td>initial specified value or less 不大于规范值</td> </tr> </table>  | Capacitance Change 静电容量变化率 | Within ± 10% of initial value 初始值的 ±10%以内 | Dissipation Factor 损耗角正切 | initial specified value or less 不大于规范值              | Leakage Current 漏电流 | initial specified value or less 不大于规范值 |    |                     |        |                    |      |      |      |      |      |                    |           |      |      |      |      |      |               |           |                  |   |   |   |   |   |   |                    |    |   |   |   |   |   |
| Capacitance Change 静电容量变化率          | Within ± 10% of initial value 初始值的 ±10%以内   |                            |   |                          |   |                     |  |    |                     |        |                    |      |      |      |      |      |                    |           |      |      |      |      |      |               |           |                  |   |   |   |   |   |   |                    |    |   |   |   |   |   |
| Dissipation Factor 损耗角正切            | initial specified value or less 不大于规范值  |                            |   |                          |   |                     |  |    |                     |        |                    |      |      |      |      |      |                    |           |      |      |      |      |      |               |           |                  |   |   |   |   |   |   |                    |    |   |   |   |   |   |
| Leakage Current 漏电流                 | initial specified value or less 不大于规范值  |                            |   |                          |   |                     |  |    |                     |        |                    |      |      |      |      |      |                    |           |      |      |      |      |      |               |           |                  |   |   |   |   |   |   |                    |    |   |   |   |   |   |
| Marking 标识                          | Black print on the case top. 铝壳顶部黑字印刷。  |                            |   |                          |   |                     |  |    |                     |        |                    |      |      |      |      |      |                    |           |      |      |      |      |      |               |           |                  |   |   |   |   |   |   |                    |    |   |   |   |   |   |

Diagram of Dimensions 尺寸图



ΦD=4~10 适用

Φ12.5 以上适用

DIMENSIONS (Unit: mm) 尺寸表

| DXL   | 4X5.4   | 5X5.4   | 6.3X5.4 | 6.3X7.7 | 8X10.5   | 10X10.5  | 10X13.5  | 12.5X13.5 | 12.5X16 | 16X16.5  |
|-------|---------|---------|---------|---------|----------|----------|----------|-----------|---------|----------|
| A     | 4.3     | 5.3     | 6.6     | 6.6     | 8.3      | 10.3     | 10.3     | 13.0      | 13.0    | 17.0     |
| B     | 4.3     | 5.3     | 6.6     | 6.6     | 8.3      | 10.3     | 10.3     | 13.0      | 13.0    | 17.0     |
| C     | 5.1     | 5.9     | 7.2     | 7.2     | 9.2      | 11.2     | 11.2     | 13.7      | 13.7    | 18.0     |
| P±0.2 | 1.0     | 1.5     | 2.0     | 2.0     | 3.1      | 4.4      | 4.4      | 4.4       | 4.4     | 6.4      |
| L     | 5.4±0.3 | 5.4±0.3 | 5.4±0.3 | 7.7±0.3 | 10.5±0.5 | 10.5±0.5 | 13.5±0.5 | 13.5±0.5  | 16±0.5  | 16.5±0.5 |

□ DRAWING (Unit: mm) 外形图



□ DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT & IMPEDANCE 规格尺寸及最大允许纹波电流及阻抗值

| μF   | WV<br>Code<br>代码 | 6.3                        |                |              | 10                         |                |              | 16                       |                |               |
|------|------------------|----------------------------|----------------|--------------|----------------------------|----------------|--------------|--------------------------|----------------|---------------|
|      |                  | 0J                         |                |              | 1A                         |                |              | 1C                       |                |               |
| 10   | 100              |                            |                |              |                            |                |              | 4 x 5.4                  | 3.0            | 60            |
| 15   | 150              |                            |                |              |                            |                |              | 5 x 5.4<br>(4 x 5.4)     | 1.8<br>(3.0)   | 95<br>(60)    |
| 22   | 220              | 4 x 5.4                    | 3.0            | 60           | 5 x 5.4<br>(4 x 5.4)       | 1.8<br>(3.0)   | 95<br>(60)   | 5 x 5.4<br>(4 x 5.4)     | 1.8<br>(3.0)   | 95<br>(60)    |
| 33   | 330              | 5 x 5.4<br>(4 x 5.4)       | 1.8<br>(3.0)   | 95<br>(60)   | 5 x 5.4<br>(4 x 5.4)       | 1.8<br>(3.0)   | 95<br>(60)   | 6.3 x 5.4<br>(5 x 5.4)   | 1.0<br>(1.8)   | 140<br>(95)   |
| 47   | 470              | 5 x 5.4<br>(4 x 5.4)       | 1.8<br>(3.0)   | 95<br>(60)   | 6.3 x 5.4<br>(5 x 5.4)     | 1.0<br>(1.8)   | 140<br>(95)  | 6.3 x 5.4<br>(5 x 5.4)   | 1.0<br>(1.8)   | 140<br>(95)   |
| 68   | 680              | 6.3 x 5.4<br>(5 x 5.4)     | 1.0<br>(1.8)   | 140<br>(95)  | 6.3 x 5.4                  | 1.0            | 140          | 6.3 x 7.7<br>(6.3 x 5.4) | 0.6<br>(1.0)   | 230<br>(140)  |
| 100  | 101              | 6.3 x 5.4<br>(5 x 5.4)     | 1.0<br>(1.8)   | 140<br>(95)  | 6.3 x 7.7<br>(6.3 x 5.4)   | 0.6<br>(1.0)   | 230<br>(140) | 6.3 x 7.7<br>(6.3 x 5.4) | 0.6<br>(1.0)   | 230<br>(140)  |
| 150  | 151              | 6.3 x 7.7<br>(6.3 x 5.4)   | 0.6<br>(1.0)   | 230<br>(140) | 6.3 x 7.7<br>(6.3 x 5.4)   | 0.6<br>(1.0)   | 230<br>(140) | 6.3 x 7.7                | 0.6            | 230           |
| 220  | 221              | 6.3 x 7.7<br>(6.3 x 5.4)   | 0.6<br>(1.0)   | 230<br>(140) | 6.3 x 7.7                  | 0.6            | 230          | 8 x 10.5<br>(6.3 x 7.7)  | 0.30<br>(0.6)  | 450<br>(230)  |
| 330  | 331              | 6.3 x 7.7                  | 0.6            | 230          | 8 x 10.5                   | 0.30           | 450          | 10 x 10.5<br>(8 x 10.5)  | 0.15<br>(0.30) | 670<br>(450)  |
| 470  | 471              | 8 x 10.5<br>(6.3 x 7.7)    | 0.30<br>(0.60) | 450<br>(230) | 8 x 10.5                   | 0.30           | 450          | 10 x 10.5<br>(8 x 10.5)  | 0.15<br>(0.30) | 670<br>(450)  |
| 680  | 681              | 8 x 10.5                   | 0.30           | 450          | 10 x 10.5                  | 0.15           | 670          | 10 x 10.5                | 0.15           | 670           |
| 1000 | 102              | 10 x 10.5<br>(8 x 10.5)    | 0.15<br>(0.30) | 670<br>(450) | 10 x 10.5                  | 0.15           | 670          | 10 x 10.5                | 0.15           | 670           |
| 1500 | 152              | 10 x 13.5<br>(10 x 10.5)   | 0.13<br>(0.15) | 750<br>(670) | 12.5 x 13.5<br>(10 x 13.5) | 0.11<br>(0.13) | 820<br>(750) | 12.5 x 13.5              | 0.11           | 820           |
| 2200 | 222              | 12.5 x 13.5<br>(10 x 13.5) | 0.11<br>(0.13) | 820<br>(750) | 12.5 x 16                  | 0.09           | 950          | 16 x 16.5<br>(12.5 x 16) | 0.08<br>(0.09) | 1260<br>(950) |
| 3300 | 332              | 12.5 x 16<br>(12.5 x 13.5) | 0.09<br>(0.11) | 950<br>(820) | 16 x 16.5                  | 0.08           | 1260         | 16 x 16.5                | 0.08           | 1260          |
| 4700 | 472              | 16 x 16.5                  | 0.08           | 1260         | 16 x 16.5                  | 0.08           | 1260         |                          |                |               |

| μF  | WV<br>Code<br>代码 | 25                       |               |              | 35                       |                |              | 50                          |  |  |
|-----|------------------|--------------------------|---------------|--------------|--------------------------|----------------|--------------|-----------------------------|--|--|
|     |                  | 1E                       |               |              | 1V                       |                |              | 1H                          |  |  |
| 1   | 010              |                          |               |              | 4 x 5.4                  | 3.0            | 60           | 4 x 5.4                     | 5.0  | 30   |
| 1.5 | 1R5              |                          |               |              | 4 x 5.4                  | 3.0            | 60           | 4 x 5.4                     | 5.0  | 30   |
| 2.2 | 2R2              |                          |               |              | 4 x 5.4                  | 3.0            | 60           | 4 x 5.4                     | 5.0  | 30   |
| 3.3 | 3R3              |                          |               |              | 4 x 5.4                  | 3.0            | 60           | 4 x 5.4                     | 5.0  | 30   |
| 4.7 | 4R7              | 4 x 5.4                  | 3.0           | 60           | 4 x 5.4                  | 3.0            | 60           | 5 x 5.4                     | 3.0  | 50   |
| 6.8 | 6R8              | 4 x 5.4                  | 3.0           | 60           | 5 x 5.4                  | 1.8            | 95           | 6.3 x 5.4                   | 2.0  | 70   |
| 10  | 100              | 5 x 5.4<br>(4 x 5.4)     | 1.8<br>(3.0)  | 95<br>(60)   | 5 x 5.4<br>(4 x 5.4)     | 1.8<br>(3.0)   | 95<br>(60)   | 6.3 x 5.4                   | 2.0  | 70   |
| 15  | 150              | 6.3 x 5.4                | 1.8           | 95           | 5 x 5.4                  | 1.8            | 95           | 6.3 x 5.4                   | 2.0  | 70   |
| 22  | 220              | 6.3 x 5.4<br>(5 x 5.4)   | 1.0<br>(1.8)  | 140<br>(95)  | 6.3 x 5.4<br>(5 x 5.4)   | 1.0<br>(1.8)   | 140<br>(95)  | 6.3 x 7.7<br>(6.3 x 5.4)    | 1.0<br>(2.0)                               | 120<br>(70)  |
| 33  | 330              | 6.3 x 5.4<br>(5 x 5.4)   | 1.0<br>(1.8)  | 140<br>(95)  | 6.3 x 7.7<br>(6.3 x 5.4) | 0.60<br>(1.0)  | 230<br>(140) | 6.3 x 7.7                   | 1.0  | 120  |
| 47  | 470              | 6.3 x 7.7<br>(6.3 x 5.4) | 0.6<br>(1.0)  | 230<br>(140) | 6.3 x 7.7<br>(6.3 x 5.4) | 0.60<br>(1.0)  | 230<br>(140) | 6.3 x 7.7                   | 1.0  | 120  |
| 68  | 680              | 6.3 x 7.7                | 0.6           | 230          | 6.3 x 7.7                | 0.60           | 230          | 8 x 10.5                    | 0.60                                       | 300  |
| 100 | 101              | 6.3 x 7.7                | 0.6           | 230          | 8 x 10.5<br>(6.3 x 7.7)  | 0.30<br>(0.60) | 450<br>(230) | 8 x 10.5                    | 0.60                                       | 300  |
| 150 | 151              | 8 x 10.5<br>(6.3 x 7.7)  | 0.30<br>(0.6) | 450<br>(230) | 8 x 10.5                 | 0.30           | 450          | 10 x 10.5                   | 0.30                                       | 500  |
|     |                  |                          |               |              |                          |                |              | Case size<br>∅D×L(mm)<br>尺寸 | Impedance (Ω)<br>at 20°C,<br>100KHz<br>阻抗值 | Ripple current<br>(mA rms) at<br>105°C, 100KHz<br>纹波电流 |

•Case size ∅D×L(mm), ripple current (mA rms) at 105°C, 100KHz, Impedance (Ω) at 20°C 100KHz •尺寸∅D×L(mm), 纹波电流(mA rms)于105°C, 100KHz, 阻抗值(Ω)于20°C 100KHz

□ DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT & IMPEDANCE 规格尺寸及最大允许纹波电流及阻抗值

| μF   | WV Code 代码 | 25                         |                |               | 35                         |                |               | 50  |  |  |
|------|------------|----------------------------|----------------|---------------|----------------------------|----------------|---------------|---|--|--|
|      |            | 1E                         |                |               | 1V                         |                |               | 1H  |  |  |
| 220  | 221        | 8 × 10.5                   | 0.30           | 450           | 10 × 10.5<br>(8 × 10.5)    | 0.15<br>(0.30) | 670<br>(450)  | 10 × 10.5                                 | 0.30                                       | 500  |
| 330  | 331        | 10 × 10.5<br>(8 × 10.5)    | 0.15<br>(0.30) | 670<br>(450)  | 10 × 10.5                  | 0.15           | 670           | 16 × 16.5<br>(12.5 × 13.5)<br>(10 × 13.5) | 0.12<br>(0.20)<br>(0.25)                   | 1060<br>(650)<br>(580)                                 |
| 470  | 471        | 10 × 10.5                  | 0.15           | 670           | 10 × 13.5<br>(10 × 10.5)   | 0.13<br>(0.15) | 750<br>(670)  | 16 × 16.5<br>(12.5 × 16)                  | 0.12<br>(0.15)                             | 1060<br>(700)  |
| 680  | 681        | 10 × 13.5                  | 0.13           | 750           | 12.5 × 13.5<br>(10 × 13.5) | 0.11<br>(0.13) | 820<br>(750)  | 16 × 16.5                                 | 0.12                                       | 1060   |
| 1000 | 102        | 16 × 16.5<br>(12.5 × 13.5) | 0.08<br>(0.11) | 1260<br>(820) | 16 × 16.5<br>(12.5 × 16)   | 0.08<br>(0.09) | 1260<br>(950) |   |  |  |
| 1500 | 152        | 12.5 × 16                  | 0.09           | 950           | 16 × 16.5                  | 0.08           | 1260          | Case size<br>∅D×L(mm)<br>尺寸               | Impedance (Ω)<br>at 20°C,<br>100KHz<br>阻抗值 | Ripple current<br>(mA rms) at<br>105°C, 100KHz<br>纹波电流 |
| 2200 | 222        | 16 × 16.5                  | 0.08           | 1260          |                            |                |               |   |  |  |

• Case size ∅D×L(mm), ripple current (mA rms) at 105°C, 100KHz, Impedance (Ω) at 20°C 100KHz    • 尺寸∅D×L(mm), 纹波电流(mA rms)于105°C, 100KHz, 阻抗值(Ω)于20°C 100KHz

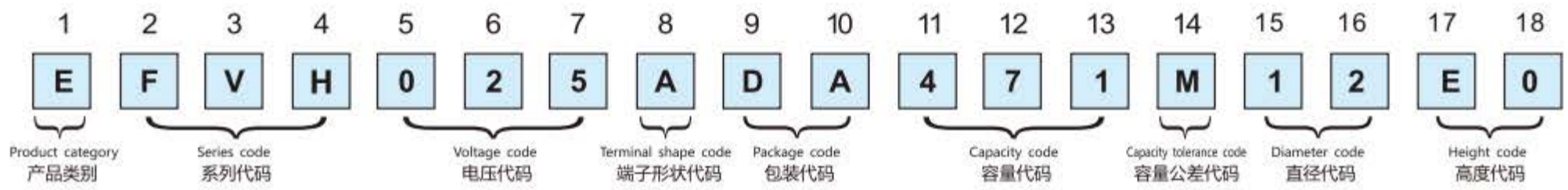
□ FREQUENCY COEFFICIENT OF ALLOWABLE RIPPLE CURRENT 纹波电流频率补偿系数

| Frequency 频率   |             | 50Hz          | 120Hz | 300Hz | 1KHz | 10KHz~ |      |
|----------------|-------------|---------------|-------|-------|------|--------|------|
| Coefficient 系数 | ∅4 ~ ∅10    | 1 ~ 68μF      | 0.35  | 0.50  | 0.64 | 0.83   | 1.00 |
|                |             | 100 ~ 2200μF  | 0.40  | 0.55  | 0.70 | 0.85   | 1.00 |
|                | ∅12.5 ~ ∅16 | ~ 680μF       | 0.45  | 0.65  | 0.80 | 0.90   | 1.00 |
|                |             | 1000 ~ 4700μF | 0.65  | 0.85  | 0.95 | 1.00   | 1.00 |

- The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 10°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.
- 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，每升温10°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。

- Taping specifications are given in page 17 "Taping Specifications". 编带标准请参阅第 17 页“编带标准”。
- Please refer to page 18 "Package Quantity" for the minimum package quantity. 最小包装数量请参阅第 18 页“包装数量”。

## SMD EXPLANATION OF PART NUMBERS 贴片产品编码规则

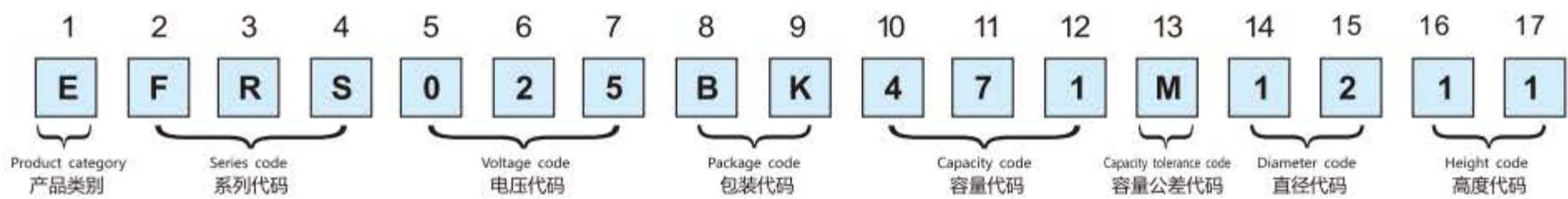


| (2, 3, 4) |                  |         | (5, 6, 7)             |         | (11, 12, 13)           |         | (14)                      |  | (8)     |                  | (15, 16) |                | (17, 18) |  |
|-----------|------------------|---------|-----------------------|---------|------------------------|---------|---------------------------|--|---------|------------------|----------|----------------|----------|--|
| Series 系列 | Voltage (w.v) 电压 | Code 代码 | Capacitance (uF) 静电容量 | Code 代码 | Cap.Tolerance (%) 容量允许 | Code 代码 | Tape 端子类型                 |  | Code 代码 | Diameter (mm) 直径 | Code 代码  | Length (mm) 高度 | Code 代码  |  |
| FVE       | 4                | 4R0     | 0.1                   | 0R1     | ±10                    | K       | No dummy terminal 无辅助端子   |  | A       | 4                | 04       | 4.5            | 45       |  |
| FVH       | 6.3              | 6R3     | 0.22                  | R22     | ±20                    | M       | With dummy terminal 有辅助端子 |  | G       | 5                | 05       | 5.4            | 54       |  |
| FVA       | 10               | 010     | 1                     | 010     |                        |         |                           |  |         | 6.3              | 06       | 5.8            | 58       |  |
| FVZ       | 16               | 016     | 4.7                   | 4R7     |                        |         |                           |  |         | 8                | 08       | 6.5            | 65       |  |
| FVR       | 25               | 025     | 10                    | 100     |                        |         |                           |  |         | 10               | 10       | 7.7            | 77       |  |
| FVL       | 35               | 035     | 47                    | 470     |                        |         |                           |  |         | 12.5             | 12       | 10.2           | A0       |  |
| FVM       | 50               | 050     | 100                   | 101     |                        |         |                           |  |         | 16               | 16       | 10.5           | B0       |  |
| FVU       | 63               | 063     | 470                   | 471     |                        |         |                           |  |         | 18               | 18       | 13.5           | E0       |  |
| FVG       | 100              | 100     | 1000                  | 102     |                        |         |                           |  |         |                  |          | 16             | G5       |  |
| FVB       | 160              | 160     | 4700                  | 472     |                        |         |                           |  |         |                  |          | 16.5           | H0       |  |
| FVN       | 250              | 250     | 10000                 | 103     |                        |         |                           |  |         |                  |          | 21.5           | N0       |  |
| FVD       | 350              | 350     |                       |         |                        |         |                           |  |         |                  |          |                |          |  |
| FVC       | 400              | 400     |                       |         |                        |         |                           |  |         |                  |          |                |          |  |

| (9, 10)         |                        | External diameter 纸盘外径 | Fit size 适合尺寸 | Code 代码 |        |    |
|-----------------|------------------------|------------------------|---------------|---------|--------|----|
| Packaging 包装要求  | External diameter 纸盘外径 | □(mm)                  |               | Code 代码 |        |    |
|                 |                        | □D(mm)                 |               |         |        |    |
|                 |                        | Paper tray 纸盘          | 380           |         | ∅D4~18 | DA |
|                 |                        | Glue tray 胶盘           | 330           |         | ∅D4~18 | DB |
| Blister box 吸塑盒 | -                      | 380                    | ∅D4~10        | RA      |        |    |
|                 |                        | -                      | ∅D12.5~18     | TR      |        |    |

## Radial EXPLANATION OF PART NUMBERS 插件产品编码规则



| (2, 3, 4) |                  |         | (5, 6, 7)             |         | (10, 11, 12)           |         | (13)                    |  | (8, 9)  |                  | (14, 15) |                | (16, 17) |  |
|-----------|------------------|---------|-----------------------|---------|------------------------|---------|-------------------------|--|---------|------------------|----------|----------------|----------|--|
| Series 系列 | Voltage (w.v) 电压 | Code 代码 | Capacitance (uF) 静电容量 | Code 代码 | Cap.Tolerance (%) 容量允许 | Code 代码 | Packaging 包装形式          |  | Code 代码 | Diameter (mm) 直径 | Code 代码  | Length (mm) 高度 | Code 代码  |  |
| FRA       | 4                | 4R0     | 0.1                   | 0R1     | ±10                    | K       | Long-legged bulk 长脚散装   |  | BK      | 4                | 04       | 4.5            | 04       |  |
| FRS       | 6.3              | 6R3     | 0.22                  | R22     | ±20                    | M       | Long-legged taping 长脚编带 |  | BA      | 5                | 05       | 5.5            | 05       |  |
| FRU       | 10               | 010     | 1                     | 010     |                        |         |                         |  |         | 6.3              | 06       | 6.0            | 06       |  |
| FRK       | 16               | 016     | 4.7                   | 4R7     |                        |         |                         |  |         | 8                | 08       | 6.5            | 06       |  |
| FBR       | 25               | 025     | 10                    | 100     |                        |         |                         |  |         | 10               | 10       | 7.0            | 07       |  |
| FBU       | 35               | 035     | 47                    | 470     |                        |         |                         |  |         | 12.5             | 12       | 8.0            | 08       |  |
|           | 50               | 050     | 100                   | 101     |                        |         |                         |  |         | 16               | 16       | 10             | 10       |  |
|           | 63               | 063     | 470                   | 471     |                        |         |                         |  |         | 18               | 18       | 11             | 11       |  |
|           | 100              | 100     | 1000                  | 102     |                        |         |                         |  |         |                  |          | 11.5           | 11       |  |
|           | 160              | 160     | 4700                  | 472     |                        |         |                         |  |         |                  |          | 12             | 12       |  |
|           | 250              | 250     | 10000                 | 103     |                        |         |                         |  |         |                  |          | 16             | 16       |  |
|           | 350              | 350     |                       |         |                        |         |                         |  |         |                  |          |                |          |  |
|           | 400              | 400     |                       |         |                        |         |                         |  |         |                  |          |                |          |  |

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