

## E2 Series

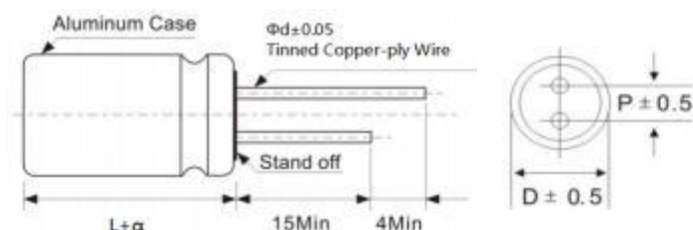
- Low ESR, high ripple current
- Load life of 2000 hours at 105°C
- RoHS Compliant

## ◆ 规格表 Specifications



| 项目Items                                                            | 特性参数Characteristics                                                                                                                                                                                                                                                                                                                                   |                               |   |     |     |          |      |    |    |    |    |                |
|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---|-----|-----|----------|------|----|----|----|----|----------------|
| 使用温度范围<br>Category<br>Temperture Range                             | -55 ~ +105℃                                                                                                                                                                                                                                                                                                                                           |                               |   |     |     |          |      |    |    |    |    |                |
| 额定工作电压范围<br>Rated Voltage Range                                    | 2.5 ~ 25V                                                                                                                                                                                                                                                                                                                                             |                               |   |     |     |          |      |    |    |    |    |                |
| 静电容量允许偏差<br>Capacitance tolerance                                  | ±20%(M) (at 20℃,120Hz)                                                                                                                                                                                                                                                                                                                                |                               |   |     |     |          |      |    |    |    |    |                |
| 漏电流<br>Leakage Current                                             | 施加额定工作电压2分钟后读数, 小于或等于规格值 (at 20℃)<br>I≤0.2CV 或500μA (取大值)<br>Less than or equal to the specified value. After 2 minutes application of rated Voltage at 20℃                                                                                                                                                                                           |                               |   |     |     |          |      |    |    |    |    |                |
| 损耗角正切值tanδ<br>Dissipation Factor                                   | Rated voltage (V)                                                                                                                                                                                                                                                                                                                                     | 2.5                           | 4 | 6.3 | 6.8 | 7.5      | 10   | 12 | 16 | 20 | 25 | (at 20℃,120Hz) |
|                                                                    | tanδ (Max.)                                                                                                                                                                                                                                                                                                                                           | 0.08                          |   |     |     |          | 0.12 |    |    |    |    |                |
| 温度特性<br>Low Temperture<br>Characteristics<br>(Max.Impedance Ratio) | Z(-25℃)/Z(+20℃)                                                                                                                                                                                                                                                                                                                                       | ≤ 1.25                        |   |     |     | (100KHz) |      |    |    |    |    |                |
|                                                                    | Z(-55℃)/Z(+20℃)                                                                                                                                                                                                                                                                                                                                       | ≤ 1.25                        |   |     |     |          |      |    |    |    |    |                |
| 耐久性<br>Endurance                                                   | 105℃施加额定工作电压2000小时, 恢复到20℃后, 产品性能应满足以下要求<br>The specifications listed below shall be satisfied when the capacitors are restored to 20℃ after application of rated voltage for 2000 hours at 105℃.                                                                                                                                                     |                               |   |     |     |          |      |    |    |    |    |                |
|                                                                    | Appearance                                                                                                                                                                                                                                                                                                                                            | No significant damage         |   |     |     |          |      |    |    |    |    |                |
|                                                                    | Capacitance change                                                                                                                                                                                                                                                                                                                                    | ≤ ±20% of the initial value   |   |     |     |          |      |    |    |    |    |                |
|                                                                    | D.F.(tanδ)                                                                                                                                                                                                                                                                                                                                            | ≤ 150% of the specified value |   |     |     |          |      |    |    |    |    |                |
|                                                                    | ESR                                                                                                                                                                                                                                                                                                                                                   | ≤ 150% of the specified value |   |     |     |          |      |    |    |    |    |                |
|                                                                    | Leakage current                                                                                                                                                                                                                                                                                                                                       | ≤ The specified value         |   |     |     |          |      |    |    |    |    |                |
| 耐湿负荷特性<br>Damp Heat<br>(Steady State)                              | 在60℃ 温度, 湿度90%~95%RH的环境中, 施加额定电压1000小时后, 恢复到20℃后, 产品性能应满足以下要求<br>The specifications listed below shall be satisfied when the capacitors are restored to 20℃after application of rated voltage for 1000 hours at 60℃,90%~ 95% RH.                                                                                                                      |                               |   |     |     |          |      |    |    |    |    |                |
|                                                                    | Appearance                                                                                                                                                                                                                                                                                                                                            | No significant damage         |   |     |     |          |      |    |    |    |    |                |
|                                                                    | Capacitance change                                                                                                                                                                                                                                                                                                                                    | ≤ ±20% of the initial value   |   |     |     |          |      |    |    |    |    |                |
|                                                                    | D.F.(tanδ)                                                                                                                                                                                                                                                                                                                                            | ≤ 150% of the specified value |   |     |     |          |      |    |    |    |    |                |
|                                                                    | ESR                                                                                                                                                                                                                                                                                                                                                   | ≤ 150% of the specified value |   |     |     |          |      |    |    |    |    |                |
|                                                                    | Leakage current                                                                                                                                                                                                                                                                                                                                       | ≤ The specified value         |   |     |     |          |      |    |    |    |    |                |
| 浪涌电压特性<br>(Surge Voltage)                                          | 浪涌电压=额定电压× 1.15(V)<br>Surge Voltage=Rated voltage × 1.15(V)<br>在105℃环境中, 按充电30秒; 放电5分30秒, 连续施加浪涌电压1000次(Rc=1kΩ), 待恢复后测试, 应满足以下要求<br>The capacitors shall be subjected to 1000 cycles each consisting of charge with the surge voltages specified at 105℃ for 30 seconds through a protective resistor (Rc=1kΩ) and discharge for 5 minutes 30 seconds |                               |   |     |     |          |      |    |    |    |    |                |
|                                                                    | Appearance                                                                                                                                                                                                                                                                                                                                            | No significant damage         |   |     |     |          |      |    |    |    |    |                |
|                                                                    | Capacitance change                                                                                                                                                                                                                                                                                                                                    | ≤ ±20% of the initial value   |   |     |     |          |      |    |    |    |    |                |
|                                                                    | D.F.(tanδ)                                                                                                                                                                                                                                                                                                                                            | ≤ 150% of the specified value |   |     |     |          |      |    |    |    |    |                |
|                                                                    | ESR                                                                                                                                                                                                                                                                                                                                                   | ≤ 150% of the specified value |   |     |     |          |      |    |    |    |    |                |
|                                                                    | Leakage current                                                                                                                                                                                                                                                                                                                                       | ≤ The specified value         |   |     |     |          |      |    |    |    |    |                |

## ◆ 外形图 Dimensions (mm)

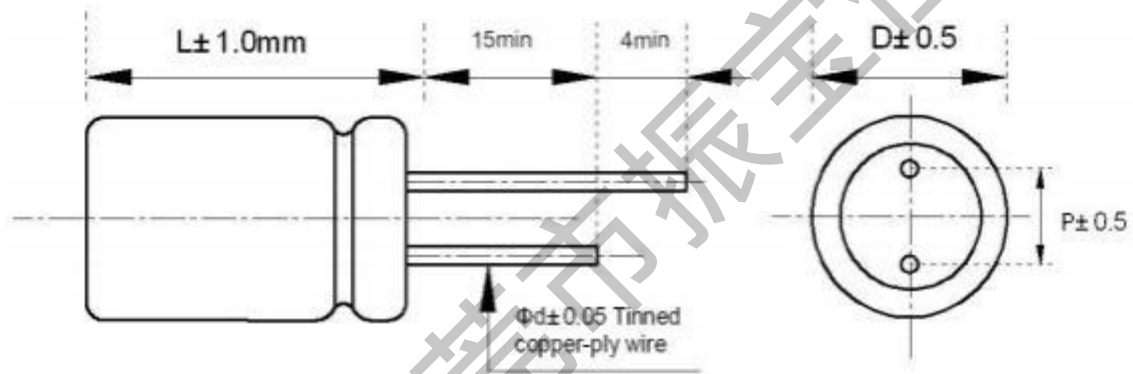


|    |     |     |     |     |
|----|-----|-----|-----|-----|
| ΦD | 5   | 6.3 | 8   | 10  |
| P  | 2.0 | 2.5 | 3.5 | 5.0 |
| Φd | 0.5 | 0.6 | 0.6 | 0.6 |

|   |                  |
|---|------------------|
| α | (L < 16)1.0      |
|   | (16 ≤ L < 22)1.5 |
|   | (L ≥ 22)2.0      |

基本特性参数表 Characteristics

| Part No/ Ruilong | Capacitance.<br>(uF)<br>120Hz/+20℃ | Capacitance<br>Tolerance.<br>(%)<br>120Hz/+20℃ | Rated<br>Voltage<br>(VDC) | Surge<br>Voltage<br>(VDC) | tanδ<br>120Hz/+<br>20℃ | Leakage<br>Current<br>2 min( uA)<br>+20℃ | ESR<br>100KHz<br>+20℃<br>(mΩ ) | Ripple<br>Current.<br>100KHz<br>( mArms) | Load<br>Life<br>(Hrs) | Categoty<br>Temperture<br>Range | Dimensions( mm) |    | Colour |
|------------------|------------------------------------|------------------------------------------------|---------------------------|---------------------------|------------------------|------------------------------------------|--------------------------------|------------------------------------------|-----------------------|---------------------------------|-----------------|----|--------|
|                  |                                    |                                                |                           |                           |                        |                                          |                                |                                          |                       |                                 | ΦD              | L  |        |
| E2471M016D120RL  | 470                                | ±20                                            | 16                        | 18.4                      | 0.12                   | 1504                                     | 15                             | 4100                                     | 2000                  | -55~+105℃                       | 8               | 12 | 红色     |



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

| 频率 Frequency( Hz) | $120\text{Hz} \leq F < 1\text{KHz}$ | $1\text{KHz} \leq F < 10\text{KHz}$ | $10\text{KHz} \leq F < 100\text{KHz}$ | $100\text{KHz} \leq F < 500\text{KHz}$ |
|-------------------|-------------------------------------|-------------------------------------|---------------------------------------|----------------------------------------|
| 系数 Case code      | 0.05                                | 0.30                                | 0.70                                  | 1.00                                   |