

LOW IMPEDANCE

低阻抗品

- Low impedance with temperature range -55 ~ +105°C
低阻抗和適用於 -55 ~ +105°C 的溫度範圍
- Load life of 1000 ~ 2000 hours
負荷壽命 1000 ~ 2000 小時
- Comply with the RoHS directive
符合 RoHS 指令

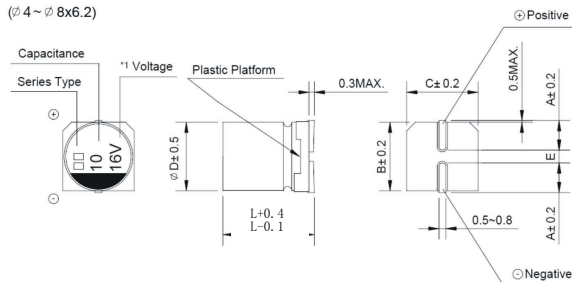


SPECIFICATIONS 特性表

| Items 項目 | Characteristics 主要特性 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------------|--|----------------------------|---|--------------------------|--|---------------------|--|----|---------------------|---------------------|--------|--------------------|------|------|------|-------------------|------|-----------|--------------------|------|------|------|---|---|---------------|--------------------|---|---|---|---|---|--------------------|----|---|---|---|---|
| Operation Temperature Range 使用溫度範圍 | -55 ~ +105°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Voltage Range 額定工作電壓範圍 | 6.3 ~ 50V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Range 靜電容量範圍 | 1 ~ 4700µF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Tolerance 靜電容量允許偏差 | ±20% at 120Hz, 20°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage Current 漏電流 | Leakage current (∅4~∅10) ≅ 0.01CV or 3µA, whichever is greater (after 2 minutes application of rated voltage) Leakage current (∅12.5~∅16) ≅ 0.03CV or 4µA, whichever is greater (after 1 minute application of rated voltage) 漏電流 (∅4~∅10) ≅ 0.01CV 或 3µA, 取較大值 (施加額定工作電壓 2 分鐘後) 漏電流 (∅12.5~∅16) ≅ 0.03CV 或 4µA, 取較大值 (施加額定工作電壓 1 分鐘後) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissipation Factor (tan δ) 損耗角正切 | Measurement frequency 測試頻率: 120Hz, Temperature 溫度: 20°C <table border="1"> <thead> <tr> <th>Rated Voltage (V) 額定工作電壓</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> </tr> </thead> <tbody> <tr> <td>tan δ (max.) ∅4~∅10</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.12</td> </tr> <tr> <td>最大損耗角正切 ∅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> </tbody> </table> | Rated Voltage (V) 額定工作電壓 | 6.3 | 10 | 16 | 25 | 35 | 50 | tan δ (max.) ∅4~∅10 | 0.22 | 0.19 | 0.16 | 0.14 | 0.12 | 0.12 | 最大損耗角正切 ∅12.5~∅16 | 0.26 | 0.22 | 0.18 | 0.16 | 0.14 | 0.12 | | | | | | | | | | | | | | | |
| Rated Voltage (V) 額定工作電壓 | 6.3 | 10 | 16 | 25 | 35 | 50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| tan δ (max.) ∅4~∅10 | 0.22 | 0.19 | 0.16 | 0.14 | 0.12 | 0.12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 最大損耗角正切 ∅12.5~∅16 | 0.26 | 0.22 | 0.18 | 0.16 | 0.14 | 0.12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stability at Low Temperature 低溫特性 | Measurement frequency 測試頻率: 120Hz <table border="1"> <thead> <tr> <th colspan="2">Rated Voltage (V) 額定工作電壓</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Impedance Ratio 阻抗比</td> <td>∅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 rowspan="2">∅12.5~∅16</td> <td>Z(-55°C) / Z(20°C)</td> <td>5</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> </tr> <tr> <td rowspan="2">ZT/Z20 (max.)</td> <td>Z(-25°C) / Z(20°C)</td> <td>3</td> <td>3</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> </tr> </tbody> </table> | Rated Voltage (V) 額定工作電壓 | | 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 | ∅12.5~∅16 | Z(-55°C) / Z(20°C) | 5 | 4 | 4 | 3 | 3 | ZT/Z20 (max.) | Z(-25°C) / Z(20°C) | 3 | 3 | 2 | 2 | 2 | Z(-55°C) / Z(20°C) | 10 | 8 | 6 | 4 | 3 |
| Rated Voltage (V) 額定工作電壓 | | 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 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | ∅12.5~∅16 | Z(-55°C) / Z(20°C) | 5 | 4 | 4 | 3 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZT/Z20 (max.) | | Z(-25°C) / Z(20°C) | 3 | 3 | 2 | 2 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Z(-55°C) / Z(20°C) | 10 | 8 | 6 | 4 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Load Life 高溫負荷特性 | After 2000 hrs. (1000 hrs. for ∅4~∅6.3×5.4) application of the rated voltage at 105°C, they meet the characteristics listed below. 在 105°C 環境中施加額定工作電壓 2000 小時 (∅4~∅6.3×5.4 為 1000 小時) 後, 電容器的特性符合下表的要求。 <table border="1"> <tbody> <tr> <td>Capacitance Change 靜電容量變化率</td> <td>Within ±20% of initial value 初始值的±20%以內</td> </tr> <tr> <td>Dissipation Factor 損耗角正切</td> <td>200% or less of initial specified value 不大於規範值的 200%</td> </tr> <tr> <td>Leakage Current 漏電流</td> <td>initial specified value or less 不大於規範值</td> </tr> </tbody> </table> | Capacitance Change 靜電容量變化率 | Within ±20% of initial value 初始值的±20%以內 | Dissipation Factor 損耗角正切 | 200% or less of initial specified value 不大於規範值的 200% | Leakage Current 漏電流 | initial specified value or less 不大於規範值 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Change 靜電容量變化率 | Within ±20% of initial value 初始值的±20%以內 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissipation Factor 損耗角正切 | 200% or less of initial specified value 不大於規範值的 200% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage Current 漏電流 | initial specified value or less 不大於規範值 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shelf Life 高溫貯存特性 | 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 環境中無負荷放置 1000 小時後, 電容器的特性符合高溫負荷特性中所列的規定值。 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Resistance to Soldering Heat 耐焊接熱特性 | After reflow soldering and restored at room temperature, they meet the characteristics listed below. <table border="1"> <tbody> <tr> <td>Capacitance Change 靜電容量變化率</td> <td>Within ±10% of initial value 初始值的±10%以內</td> </tr> <tr> <td>Dissipation Factor 損耗角正切</td> <td>initial specified value or less 不大於規範值</td> </tr> <tr> <td>Leakage Current 漏電流</td> <td>initial specified value or less 不大於規範值</td> </tr> </tbody> </table> | Capacitance Change 靜電容量變化率 | Within ±10% of initial value 初始值的±10%以內 | Dissipation Factor 損耗角正切 | initial specified value or less 不大於規範值 | Leakage Current 漏電流 | initial specified value or less 不大於規範值 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Change 靜電容量變化率 | Within ±10% of initial value 初始值的±10%以內 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissipation Factor 損耗角正切 | initial specified value or less 不大於規範值 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage Current 漏電流 | initial specified value or less 不大於規範值 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Humidity Life 恒濕特性 | After leaving capacitors under no load at 85°C and 85%RH for 500 hours, they meet the specified value for resistance to soldering heat characteristics listed above. 在 85°C 與 85%RH 環境中無負荷放置 500 小時後, 電容器的特性符合耐焊接熱特性中所列的規定值。 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Storage 儲存 | Storage conditions should be: Temperature: +5°C~+35°C; Humidity: lower than 75%; Place: indoor. 儲存環境應為: 溫度: +5°C~+35°C; 相對濕度<75%; 儲存場所: 室內。 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Working conditions 工作條件 | Make sure that no higher than the rated voltage and temperature is applied the capacitor. 確認不超過額定電壓和額定溫度通過電容器 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Marking 標示 | Black print on the case top. 鋁殼頂部黑字印刷。 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

DRAWING (Unit: mm) 外形圖

(∅ 4 ~ ∅ 8x6.2)



*1. Voltage mark for 6.3V is [6V]

6.3V 的產品標識為 [6V]

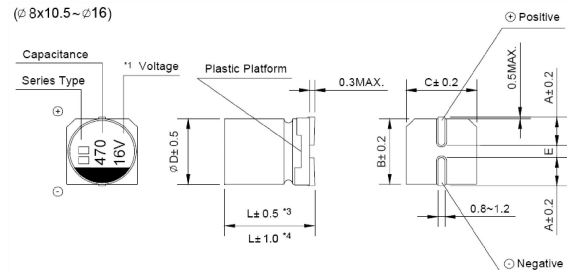
*3. Applicable to ∅8×10.5~∅10

適用於∅8×10.5~∅10

*4. Applicable to ∅12.5~∅16

適用於∅12.5~∅16

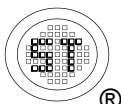
(∅ 8x10.5 ~ ∅ 16)



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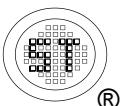
□ DIMENSIONS (Unit: mm) 尺寸表

| ∅D x L | 4 x 5.4 | 5 x 5.4 | 6.3 x 5.4 | 6.3 x 7.7 | 8 x 6.2 | 8 x 10.5 | 10 x 10.5 | 10 x 13.5 | 12.5 x 13.5 | 12.5 x 16 | 16 x 16.5 |
|---------|---------|---------|-----------|-----------|---------|----------|-----------|-----------|-------------|-----------|-----------|
| A | 1.8 | 2.1 | 2.4 | 2.4 | 3.3 | 2.9 | 3.2 | 3.2 | 4.7 | 4.7 | 5.5 |
| B | 4.3 | 5.3 | 6.6 | 6.6 | 8.3 | 8.3 | 10.3 | 10.3 | 13.0 | 13.0 | 17.0 |
| C | 4.3 | 5.3 | 6.6 | 6.6 | 8.3 | 8.3 | 10.3 | 10.3 | 13.0 | 13.0 | 17.0 |
| E ± 0.2 | 1.0 | 1.3 | 2.2 | 2.2 | 2.2 | 3.1 | 4.4 | 4.4 | 4.4 | 4.4 | 6.7 |
| L | 5.4 | 5.4 | 5.4 | 7.7 | 6.2 | 10.5 | 10.5 | 13.5 | 13.5 | 16.0 | 16.5 |

□ DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT & IMPEDANCE 規格尺寸及最大允許紋波電流及阻抗值

| WV Code 代碼 | μF | 6.3 | | | 10 | | | 16 | | | |
|------------------|-----|--------------------------------|---|---|--------------------------------|---|---|--------------------------------|---|---|------|
| | | 0J | | | 1A | | | 1C | | | |
| | | Case size ∅D x L (mm) 尺寸 | Impedance (Ω) at 20°C 100KHz 阻抗值 | Ripple current (mA rms) at 105°C 100KHz 紋波電流 | Case size ∅D x L (mm) 尺寸 | Impedance (Ω) at 20°C 100KHz 阻抗值 | Ripple current (mA rms) at 105°C 100KHz 紋波電流 | Case size ∅D x L (mm) 尺寸 | Impedance (Ω) at 20°C 100KHz 阻抗值 | Ripple current (mA rms) at 105°C 100KHz 紋波電流 | |
| 10 | 100 | | | | | | | | | | |
| 15 | 150 | | | | | | | | | | |
| 22 | 220 | 4 x 5.4 | 3.0 | 60 | 5 x 5.4 (4 x 5.4) | 1.8 (3.0) | 95 (60) | 5 x 5.4 (4 x 5.4) | 1.8 (3.0) | 95 (60) | 60 |
| 33 | 330 | 5 x 5.4 (4 x 5.4) | 1.8 (3.0) | 95 (60) | 5 x 5.4 (4 x 5.4) | 1.8 (3.0) | 95 (60) | 6.3 x 5.4 (5 x 5.4) | 1.0 (1.8) | 140 (95) | 140 |
| 47 | 470 | 5 x 5.4 (4 x 5.4) | 1.8 (3.0) | 95 (60) | 6.3 x 5.4 (5 x 5.4) | 1.0 (1.8) | 140 (95) | 6.3 x 5.4 (5 x 5.4) | 1.0 (1.8) | 140 (95) | 140 |
| 68 | 680 | 6.3 x 5.4 (5 x 5.4) | 1.0 (1.8) | 140 (95) | 6.3 x 5.4 | 1.0 | 140 | 6.3 x 7.7 (6.3 x 5.4) | 0.6 (1.0) | 230 (140) | 230 |
| 100 | 101 | 6.3 x 5.4 (5 x 5.4) | 1.0 (1.8) | 140 (95) | 6.3 x 7.7 (6.3 x 5.4) | 0.6 (1.0) | 230 (140) | 6.3 x 7.7 (8 x 6.2) | 0.6 (0.6) | 230 (230) | 230 |
| 150 | 151 | 6.3 x 7.7 (6.3 x 5.4) | 0.6 (1.0) | 230 (140) | 6.3 x 7.7 (6.3 x 5.4) | 0.6 (1.0) | 230 (140) | 6.3 x 7.7 | 0.6 | 230 | 230 |
| 220 | 221 | 6.3 x 7.7 (6.3 x 5.4) | 0.6 (1.0) | 230 (140) | 6.3 x 7.7 | 0.6 | 230 | 8 x 10.5 (6.3 x 7.7) | 0.30 (0.6) | 450 (230) | 450 |
| 330 | 331 | 6.3 x 7.7 | 0.6 | 230 | 8 x 10.5 | 0.30 | 450 | 10 x 10.5 (8 x 10.5) | 0.15 (0.30) | 670 (450) | 670 |
| 470 | 471 | 8 x 10.5 | 0.30 | 450 | 8 x 10.5 | 0.30 | 450 | 10 x 10.5 (8 x 10.5) | 0.15 (0.30) | 670 (450) | 670 |
| 680 | 681 | 8 x 10.5 | 0.30 | 450 | 10 x 10.5 | 0.15 | 670 | 10 x 10.5 | 0.15 | 670 | 670 |
| 1000 | 102 | 10 x 10.5 (8 x 10.5) | 0.15 (0.30) | 670 (450) | 10 x 10.5 | 0.15 | 670 | 10 x 10.5 | 0.15 | 670 | 670 |
| 1500 | 152 | 10 x 13.5 (10 x 10.5) | 0.13 (0.15) | 750 (670) | 12.5 x 13.5 (10 x 13.5) | 0.11 (0.13) | 820 (750) | 12.5 x 13.5 | 0.11 | 820 | 820 |
| 2200 | 222 | 12.5 x 13.5 (10 x 13.5) | 0.11 (0.13) | 820 (750) | 12.5 x 16 | 0.09 | 950 | 16 x 16.5 (12.5 x 16) | 0.08 (0.09) | 1260 (950) | 1260 |
| 3300 | 332 | 12.5 x 16 (12.5 x 13.5) | 0.09 (0.11) | 950 (820) | 16 x 16.5 | 0.08 | 1260 | 16 x 16.5 | 0.08 | 1260 | 1260 |
| 4700 | 472 | 16 x 16.5 | 0.08 | 1260 | 16 x 16.5 | 0.08 | 1260 | | | | |

| WV Code 代碼 | μF | 25 | | | 35 | | | 50 | | |
|------------------|-----|--------------------------------|---|---|--------------------------------|---|---|--------------------------------|---|---|
| | | 1E | | | 1V | | | 1H | | |
| | | Case size ∅D x L (mm) 尺寸 | Impedance (Ω) at 20°C 100KHz 阻抗值 | Ripple current (mA rms) at 105°C 100KHz 紋波電流 | Case size ∅D x L (mm) 尺寸 | Impedance (Ω) at 20°C 100KHz 阻抗值 | Ripple current (mA rms) at 105°C 100KHz 紋波電流 | Case size ∅D x L (mm) 尺寸 | Impedance (Ω) at 20°C 100KHz 阻抗值 | Ripple current (mA rms) at 105°C 100KHz 紋波電流 |
| 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 (4 x 5.4) | 1.8 (3.0) | 95 (60) | 5 x 5.4 (4 x 5.4) | 1.8 (3.0) | 95 (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 (5 x 5.4) | 1.0 (1.8) | 140 (95) | 6.3 x 5.4 (5 x 5.4) | 1.0 (1.8) | 140 (95) | 6.3 x 7.7 (6.3 x 5.4) | 1.0 (2.0) | 120 (70) |
| 33 | 330 | 6.3 x 5.4 (5 x 5.4) | 1.0 (1.8) | 140 (95) | 6.3 x 5.4 | 1.0 | 140 | 6.3 x 7.7 | 1.0 | 120 |
| 47 | 470 | 6.3 x 7.7 (6.3 x 5.4) | 0.6 (1.0) | 230 (140) | 6.3 x 7.7 (6.3 x 5.4) | 0.60 (1.0) | 230 (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 | 0.5 | 280 | 8 x 10.5 | 0.30 | 450 | 8 x 10.5 | 0.60 | 300 |
| 150 | 151 | 8 x 10.5 (6.3 x 7.7) | 0.30 (0.6) | 450 (230) | 8 x 10.5 | 0.30 | 450 | 10 x 10.5 | 0.30 | 500 |



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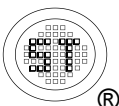
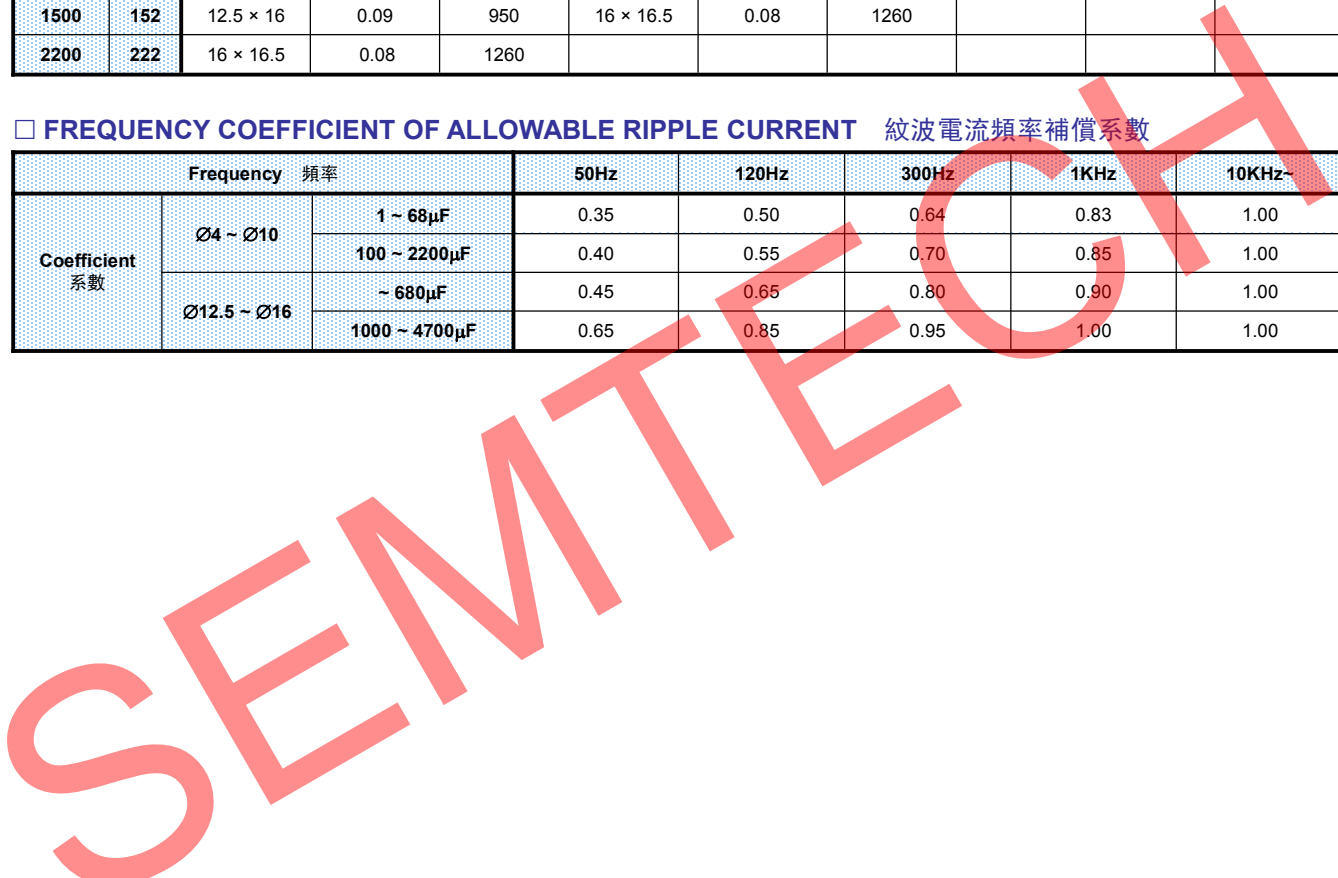


□ DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT & IMPEDANCE 規格尺寸及最大允許紋波電流及阻抗值

| WV Code 代碼 μF | | 25 | | | 35 | | | 50 | | |
|------------------------|-----|-----------------------------|---|---|-----------------------------|---|---|---|---|---|
| | | 1E | | | 1V | | | 1H | | |
| | | Case size ∅D×L(mm) 尺寸 | Impedance (Ω) at 20°C 100KHz 阻抗值 | Ripple current (mA rms) at 105°C 100KHz 紋波電流 | Case size ∅D×L(mm) 尺寸 | Impedance (Ω) at 20°C 100KHz 阻抗值 | Ripple current (mA rms) at 105°C 100KHz 紋波電流 | Case size ∅D×L(mm) 尺寸 | Impedance (Ω) at 20°C 100KHz 阻抗值 | Ripple current (mA rms) at 105°C 100KHz 紋波電流 |
| 220 | 221 | 8 x 10.5 | 0.30 | 450 | 10 x 10.5 (8 x 10.5) | 0.15 (0.30) | 670 (450) | 10 x 10.5 | 0.30 | 500 |
| 330 | 331 | 10 x 10.5 (8 x 10.5) | 0.15 (0.30) | 670 (450) | 10 x 10.5 | 0.15 | 670 | 16 x 16.5 (12.5 x 13.5) (10 x 13.5) | 0.12 (0.20) (0.25) | 1060 (650) (580) |
| 470 | 471 | 10 x 10.5 | 0.15 | 670 | 10 x 10.5 12.5 x 13.5 | 0.15 0.30 | 670 720 | 16 x 16.5 (12.5 x 16) | 0.12 (0.15) | 1060 (700) |
| 680 | 681 | 10 x 13.5 | 0.13 | 750 | 12.5 x 13.5 (10 x 13.5) | 0.11 (0.13) | 820 (750) | 16 x 16.5 | 0.12 | 1060 |
| 1000 | 102 | 16 x 16.5 (12.5 x 13.5) | 0.08 (0.11) | 1260 (820) | 16 x 16.5 (12.5 x 16) | 0.08 (0.09) | 1260 (950) | | | |
| 1500 | 152 | 12.5 x 16 | 0.09 | 950 | 16 x 16.5 | 0.08 | 1260 | | | |
| 2200 | 222 | 16 x 16.5 | 0.08 | 1260 | | | | | | |

□ FREQUENCY COEFFICIENT OF ALLOWABLE RIPPLE CURRENT 紋波電流頻率補償係數

| Frequency 頻率 | | 50Hz | 120Hz | 300Hz | 1KHz | 10KHz~ | |
|-------------------|-------------|---------------|-------|-------|------|--------|------|
| Coefficient 係數 | ∅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 |



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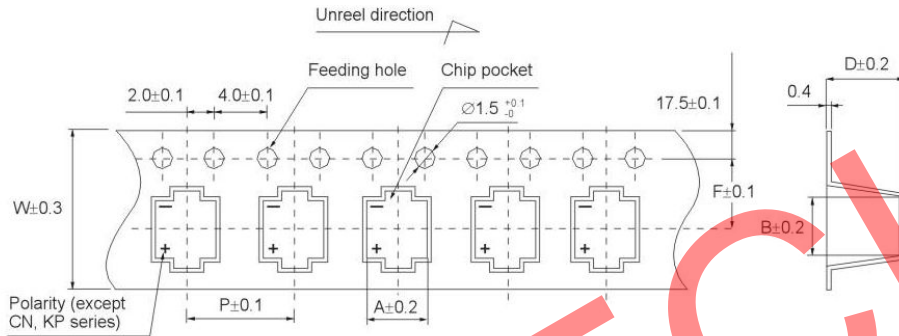


TAPING SPECIFICATIONS 編帶標準

□ For Chip Type Aluminum Electrolytic Capacitors 貼片式鋁電解電容器

■ **Carrier Tape 載帶**

● Drawing 1 (for $\varnothing 4 \sim \varnothing 10$) 外形圖 1

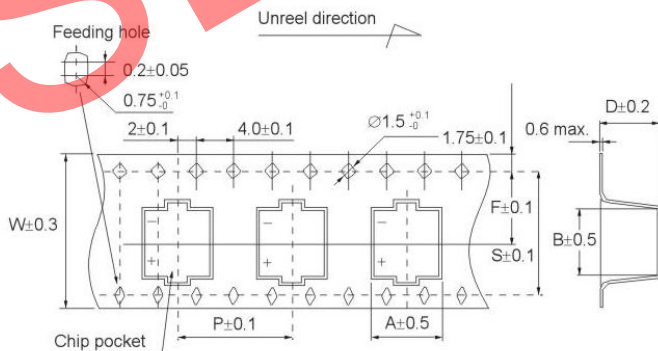


Dimension 尺寸表

(Unit: mm)

| $\varnothing D \times L$ | 4x5.4/5.8 | 5x5.4/5.8 | 6.3x5.4/5.8 | 6.3x7.7 | 8x6.2 | 8x10.5 | 10x10.5/13.5 |
|--------------------------|-----------|-----------|-------------|---------|-------|--------|--------------|
| W | 12.0 | 12.0 | 16.0 | 12.0 | 16.0 | 24.0 | 24.0 |
| P | 8.0 | 12.0 | 12.0 | 12.0 | 12.0 | 16.0 | 16.0 |
| F | 5.5 | 5.5 | 7.5 | 7.5 | 7.5 | 11.5 | 11.5 |
| A | 5.0 | 6.0 | 7.0 | 7.0 | 8.7 | 8.7 | 10.7 |
| B | 5.0 | 6.0 | 7.0 | 7.0 | 8.7 | 8.7 | 10.7 |
| D | 5.8/6.3 | 5.8/6.3 | 5.8/6.3 | 8.4 | 6.8 | 11.0 | 11.0/14.0 |

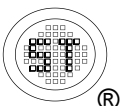
● Drawing 2 (for $\varnothing 12.5 \sim \varnothing 16$) 外形圖 2



Dimension 尺寸表

(Unit: mm)

| $\varnothing D \times L$ | 12.5x13.5 | 12.5x16 | 16x16.5/21.5 |
|--------------------------|-----------|---------|--------------|
| W | 32.0 | 32.0 | 44.0 |
| P | 24.0 | 24.0 | 28.0 |
| F | 14.2 | 14.2 | 20.2 |
| A | 14.0 | 14.0 | 17.5 |
| B | 14.0 | 14.0 | 17.5 |
| D | 14.0 | 16.5 | 17.5/22.5 |
| S | 28.4 | 28.4 | 40.4 |



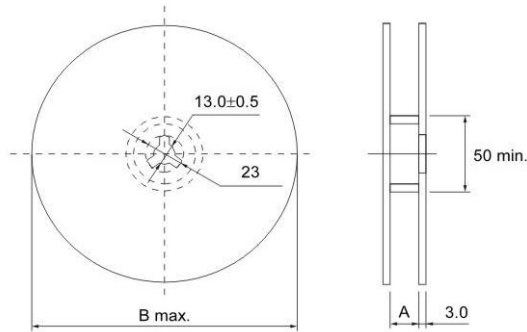
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■ Reel 卷盤

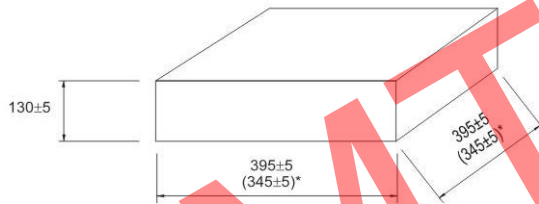


(Unit: mm)

| ∅D×L | 4×5.4/5.8 | 5×5.4/5.8 | 6.3×5.4/5.8/7.7 | 8×6.2/10.5 | 10×10.5 | 10×13.5 | 12.5×13.5/16 | 16×16.5 |
|------|-----------|-----------|-----------------|------------|---------|----------|--------------|---------|
| A | 14 | 14 | 18 | 26 | 26 | 26 | 34 | 46 |
| B | 382 | 382 | 382 | 382 | 382 | 382/332* | 382/332* | 332* |

*For a small package *為小盤包裝

■ In-box 內盒

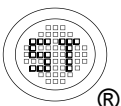


■ Package Quantity 包裝數量

(Unit: mm)

| Size (∅D×L) 尺寸 | Reel (pcs) 卷盤 (個) | In-box (reels) 內盒 (卷) | Quantity/In-box (pcs) 數量/內盒 (個) | 4 In-boxes/Carton (pcs) 4 個內盒/箱 (個) |
|----------------------|-------------------------|-----------------------------|---------------------------------------|---|
| 4 × 5.5/5.8 | 2,000 | 6 | 12,000 | 48,000 |
| 5 × 5.4/5.8 | 1,000 | 6 | 6,000 | 24,000 |
| 6.3 × 5.4/5.8 | 1,000 | 5 | 5,000 | 20,000 |
| 6.3 × 7.7 | 1,000 | 5 | 5,000 | 20,000 |
| 8 × 6.2 | 1,000 | 5 | 5,000 | 20,000 |
| 8 × 10.5 | 500 | 4 | 2,000 | 8,000 |
| 10 × 10.5 | 500 | 4 | 2,000 | 8,000 |
| 10 × 13.5 | 300/250* | 4 | 1,200/1,000* | 4,800/4000* |
| 12.5 × 13.5 | 200/150* | 3 | 600/450* | 2,400/1,800* |
| 12.5 × 16 | 200/150* | 3 | 600/450* | 2,400/1,800* |
| 16 × 16.5 | 125* | 2 | 250* | 1,000* |

*For a small package *為小盤包裝



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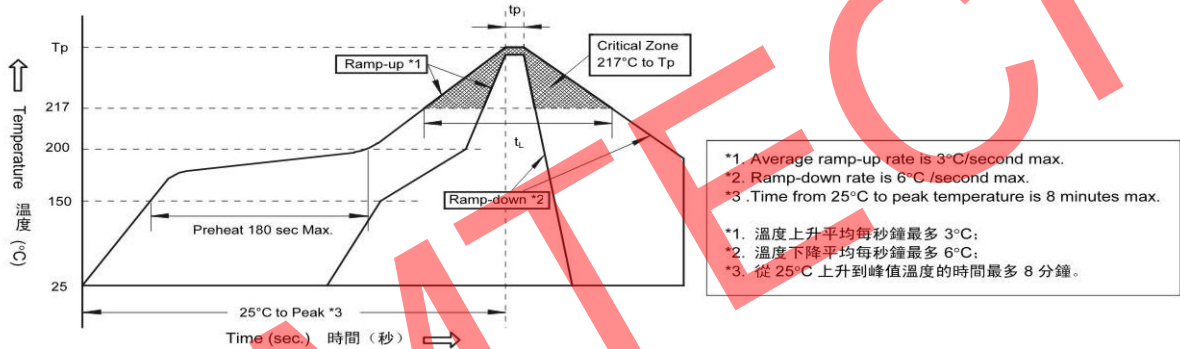
REFLOW SOLDERING CONDITIONS 回流焊條件

□ Applicable to Chip Type Aluminum Electrolytic Capacitors 適用於貼片式鋁電解電容器

■ Recommended Conditions for Reflow Soldering 推薦回流焊條件

- (1) A thermal condition system such as infrared radiation (IR) or hot blast shall be adopted, and vapor heat transfer systems(VPS) are not recommended.
應採用紅外線或熱風回流焊接，而不宜采用汽相加熱回流焊接。
- (2) Reflow soldering shall be done within 2 cycles. Please make sure that the parts have enough cooling time.
回流焊次數最多 2 次，請確保在第一次和第二次之間產品有足夠的冷卻時間。
- (3) ■ The time of preheating from 150°C to 200°C shall be within 180 seconds;
從 150°C 至 200°C 的預熱時間在 180 秒以內；
 - The time of soldering temperature at 217°C measured on capacitors' top shall not exceed t_L (second);
電容器頂部溫度超過 217°C 的焊接時間不得超過 t_L (秒)；
 - The peak temperature on capacitors' top shall not exceed T_p (°C), and the time within 5°C of actual peak temperature shall not exceed t_p (second).
電容器頂部的峰值溫度不得超過 T_p (°C)，在 5°C 範圍內的實際峰值溫度時間不得超過 t_p (秒)。

■ Classification Reflow Profile 回流焊曲線圖

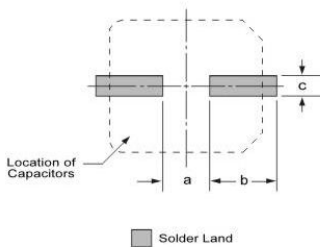


■ Classified at Temperature and Time Only for Standard Size without ()

溫度和時間分類只適用於沒有 () 的標準尺寸產品

| Size 尺寸 | Thickness(mm) 厚度 | Volume(mm ³) 體積 | Tp (°C) | tL (second 秒) | Tp (second 秒) |
|------------------|------------------|-----------------------------|---------|---------------|---------------|
| Ø4~Ø6.3, Ø8×6.2L | ≥2.5 | <350 | 250±0 | 60 | 5 |
| Ø8×10.5L | ≥2.5 | 350~2000 | 240±0 | 60 | 5 |
| Ø10×10.5L/13.5L | ≥2.5 | 350~2000 | 235±0 | 60 | 5 |
| Ø12.5, Ø16 | ≥2.5 | >2000 | 230±0 | 30 | 5 |

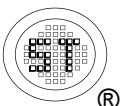
■ Recommended Solder Land Size no PC Board(Unit: mm) 推薦安裝尺寸



| Size 尺寸 | a | b | c |
|----------|-----|-----|-----|
| Ø4 | 1.0 | 2.6 | 1.6 |
| Ø5 | 1.4 | 3.0 | 1.6 |
| Ø6.3 | 2.1 | 3.5 | 1.6 |
| Ø8×6.2L | 2.1 | 4.5 | 1.6 |
| Ø8×10.5L | 3.0 | 3.5 | 2.5 |
| Ø10 | 4.0 | 4.0 | 2.5 |
| Ø12.5 | 4.0 | 5.7 | 3.0 |
| Ø16 | 6.0 | 6.5 | 3.5 |

NOTE: All designs and specifications are for reference only and are subject to change without prior notice. If any doubt about safety for your application, please contact us immediately for technical assistance before purchase.

注: 以上所提供的設計及特性參數僅供參考作用，任何修改不作預先通知。如果在使用上有疑問，請在採購前與我們聯絡，以便提供技術上的協助。



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