

- Standard.
- 標準品

■ SPECIFICATIONS 規格表

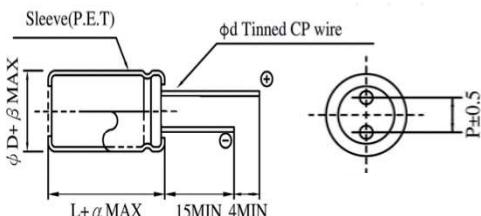
| Item | Performance Characteristics 特性 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|------|------|------|------|------|------|------|----|-------------------------------|--|----|-----|----|----|----|----|-----|---|--|------------------------|---|------|------|------|------|------|------------------------|---|---|---|---------------|---|--|--|---|---|---|---|---|---|---|
| Operating Temperature Range 工作溫度範圍 | -40 ~ +105°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Voltage Range 額定電壓範圍 | 6.3 ~ 100V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Tolerance 靜電容量容許差 | $\pm 20\%$ at 120Hz, 20°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage Current 漏電流 | <p>After 1 minute application of rated voltage, leakage current is lower than 0.03CV or 4(μA), whichever is greater. $I = 0.03CV$或$4(\mu A)$以下(1分鐘) After 2 minutes application of rated voltage, leakage current is lower than 0.01CV or 3(μA), whichever is greater. $I = 0.01CV$或$3(\mu A)$以下(2分鐘) $I = \text{Leakage Current (漏電流)} C = \text{Capacitance (靜電容量)} V = \text{Rated Voltage (額定電壓)}$</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tangent of loss angle 損失角正切值 | <p>For capacitance of more than 1000 μF, add 0.02 for every increase of 1000 μF 對於超過1000 μF產品，每增加1000 μF，其值增加0.02</p> <table border="1"> <tr> <td>Rated voltage (V) 額定電壓</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>100</td></tr> <tr> <td>Tanδ (MAX)</td><td>0.22</td><td>0.19</td><td>0.16</td><td>0.14</td><td>0.12</td><td>0.10</td><td>0.09</td><td>0.08</td></tr> </table> <p>(Frequency : 120Hz, Temperature : 20°C)</p> | | | | | | | | | Rated voltage (V) 額定電壓 | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | Tanδ (MAX) | 0.22 | 0.19 | 0.16 | 0.14 | 0.12 | 0.10 | 0.09 | 0.08 | | | | | | | | | | | | | | | |
| Rated voltage (V) 額定電壓 | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tanδ (MAX) | 0.22 | 0.19 | 0.16 | 0.14 | 0.12 | 0.10 | 0.09 | 0.08 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stability at Low Temperature 溫度特性 | <table border="1"> <tr> <td colspan="3">Rated voltage (V)</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>100</td></tr> <tr> <td>Impedance Ratio 阻抗比</td><td colspan="3">$Z-25^\circ\text{C}/Z+20^\circ\text{C}$</td><td>4</td><td>3</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td></tr> <tr> <td>ZT/Z 20 (MAX)</td><td colspan="3">$Z-40^\circ\text{C}/Z+20^\circ\text{C}$</td><td>8</td><td>6</td><td>6</td><td>3</td><td>3</td><td>3</td><td>3</td></tr> </table> <p>(Frequency:120Hz)</p> | | | | | | | | | Rated voltage (V) | | | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | Impedance Ratio 阻抗比 | $Z-25^\circ\text{C}/Z+20^\circ\text{C}$ | | | 4 | 3 | 2 | 2 | 2 | 2 | 2 | ZT/Z 20 (MAX) | $Z-40^\circ\text{C}/Z+20^\circ\text{C}$ | | | 8 | 6 | 6 | 3 | 3 | 3 | 3 |
| Rated voltage (V) | | | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Impedance Ratio 阻抗比 | $Z-25^\circ\text{C}/Z+20^\circ\text{C}$ | | | 4 | 3 | 2 | 2 | 2 | 2 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZT/Z 20 (MAX) | $Z-40^\circ\text{C}/Z+20^\circ\text{C}$ | | | 8 | 6 | 6 | 3 | 3 | 3 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Endurance 耐久性 | <p>After applying rated voltage with rated ripple current for 2000 hours at 105°C, the capacitors shall meet the following requirements. 在105°C環境中，不超過額定電壓的範圍內疊加額定紋波電流，連續加載2000小時後，滿足下列各項要求</p> <table border="1"> <tr> <td>Capacitance Change 靜電容量變化率</td><td colspan="8">Within $\pm 20\%$ of initial Value 初期值的$\pm 20\%$以內</td></tr> <tr> <td>Tangent of loss angle (Tanδ) 損失角正切值</td><td colspan="8">Not exceeding 200% of initial specified value 規格值200%以下</td></tr> <tr> <td>Leakage current 漏電流</td><td colspan="8">Not exceeding of initial specified value 規格值以下</td></tr> </table> | | | | | | | | | Capacitance Change 靜電容量變化率 | Within $\pm 20\%$ of initial Value 初期值的 $\pm 20\%$ 以內 | | | | | | | | Tangent of loss angle (Tanδ) 損失角正切值 | Not exceeding 200% of initial specified value 規格值200%以下 | | | | | | | | Leakage current 漏電流 | Not exceeding of initial specified value 規格值以下 | | | | | | | | | | | | | |
| Capacitance Change 靜電容量變化率 | Within $\pm 20\%$ of initial Value 初期值的 $\pm 20\%$ 以內 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tangent of loss angle (Tanδ) 損失角正切值 | Not exceeding 200% of initial specified value 規格值200%以下 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage current 漏電流 | Not exceeding of initial specified value 規格值以下 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shelf Life 高溫無負荷 | <p>After storing the capacitors under no load at 105 °C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20 °C, they shall meet the specified values for the endurance characteristics listed above 在105°C下無負荷放置1000小時後，在20 °C下依據JIS C 5101-4 4.1項進行電壓處理後，將滿足以上耐久性的特性值</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

■ Frequency Coefficient of Allowable Ripple Current 容許紋波電流的頻率係數

| V | Frequency Cap(μF) | 50Hz | 120Hz | 300Hz | 1KHz | 10KHz ~ |
|---------|----------------------|---------|-------|-------|------|---------|
| | | 0.47~47 | 0.75 | 1.00 | 1.35 | 1.57 |
| 6.3~100 | 100~470 | 0.80 | 1.00 | 1.23 | 1.34 | 1.50 |
| | 1000~15000 | 0.85 | 1.00 | 1.10 | 1.13 | 1.15 |
| | | | | | | |

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■ RADIAL LEAD TYPE 尺寸圖



| ΦD | 5 | 6.3 | 8 | 10 | 12.5 | 16 | 18 |
|-------------------|-----|-----|-----|-----|------|-----|-----|
| P | 2.0 | 2.5 | 3.5 | 5.0 | 5.0 | 7.5 | 7.5 |
| Φd | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.8 | 0.8 |
| β | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| $L < 20 : 1.5$ | | | | | | | |
| $L \geq 20 : 2.0$ | | | | | | | |

*In case $L \geq 35$ for the $\phi 12.5$ dia. unit, lead dia. $\phi d = 0.8$ mm

■ DIMENSIONS 尺寸

| Cap(μF) | W.V | | 6.3V | | 10V | | 16V | | 25V | |
|---------|------|-----------|----------------|-----------|----------------|-----------|----------------|-----------|----------------|--------|
| | Item | S.V | 8V | | 13V | | 20V | | 32V | |
| | | | Size D x L(mm) | Ripple | Size D x L(mm) | Ripple | Size D x L(mm) | Ripple | Size D x L(mm) | Ripple |
| 10 | | | | | | | 5 x 11 | 35 | 5 x 11 | 39 |
| 22 | | 5 x 11 | 34 | 5 x 11 | 45 | 5 x 11 | 55 | 5 x 11 | 60 | |
| 33 | | 5 x 11 | 50 | 5 x 11 | 60 | 5 x 11 | 70 | 5 x 11 | 75 | |
| 47 | | 5 x 11 | 65 | 5 x 11 | 75 | 5 x 11 | 85 | 5 x 11 | 90 | |
| 100 | | 5 x 11 | 100 | 5 x 11 | 110 | 6.3 x 11 | 135 | 6.3 x 11 | 145 | |
| 220 | | 6.3 x 11 | 165 | 6.3 x 11 | 180 | 8 x 11.5 | 235 | 8 x 11.5 | 250 | |
| 330 | | 6.3 x 11 | 200 | 8 x 11.5 | 225 | 8 x 11.5 | 285 | 10 x 12.5 | 355 | |
| 470 | | 8 x 11.5 | 280 | 8 x 11.5 | 305 | 10 x 12.5 | 395 | 10 x 16 | 470 | |
| 1000 | | 10 x 12.5 | 470 | 10 x 16 | 570 | 10 x 20 | 700 | 12.5 x 20 | 855 | |
| 2200 | | 12.5 x 20 | 930 | 12.5 x 20 | 1010 | 12.5 x 25 | 1150 | 16 x 25 | 1230 | |
| 3300 | | 12.5 x 20 | 1100 | 12.5 x 25 | 1220 | 16 x 25 | 1350 | 16 x 30.5 | 1450 | |
| 4700 | | 16 x 25 | 1320 | 16 x 25 | 1410 | 16 x 30.5 | 1560 | 18 x 35.5 | 1660 | |
| 10000 | | 16 x 30.5 | 1830 | 18 x 35.5 | 1980 | 18 x 40 | 2170 | | | |
| 15000 | | 18 x 35.5 | 2280 | 18 x 40 | 2470 | | | | | |

■ DIMENSIONS 尺寸

Rated Ripple Current(mA r.m.s. at 105°C,120Hz)

| Cap(μF) | W.V | | 35V | | 50V | | 63V | | 100V | |
|---------|------|-----------|----------------|-----------|----------------|-----------|----------------|-----------|----------------|--------|
| | Item | S.V | 44V | | 63V | | 79V | | 125V | |
| | | | Size D x L(mm) | Ripple | Size D x L(mm) | Ripple | Size D x L(mm) | Ripple | Size D x L(mm) | Ripple |
| 0.47 | | | | | 5 x 11 | 7 | | | 5 x 11 | 10 |
| 1 | | | | | 5 x 11 | 12 | | | 5 x 11 | 15 |
| 2.2 | | | | | 5 x 11 | 18 | | | 5 x 11 | 22 |
| 3.3 | | | | | 5 x 11 | 25 | | | 5 x 11 | 29 |
| 4.7 | | 5 x 11 | 27 | 5 x 11 | 30 | 5 x 11 | 34 | 5 x 11 | 37 | |
| 10 | | 5 x 11 | 44 | 5 x 11 | 50 | 5 x 11 | 55 | 6.3 x 11 | 65 | |
| 22 | | 5 x 11 | 65 | 5 x 11 | 75 | 6.3 x 11 | 90 | 8 x 11.5 | 115 | |
| 33 | | 5 x 11 | 85 | 6.3 x 11 | 105 | 6.3 x 11 | 110 | 10 x 12.5 | 160 | |
| 47 | | 6.3 x 11 | 115 | 6.3 x 11 | 125 | 8 x 11.5 | 155 | 10 x 16 | 210 | |
| 100 | | 8 x 11.5 | 190 | 8 x 11.5 | 210 | 10 x 12.5 | 260 | 12.5 x 20 | 385 | |
| 220 | | 10 x 12.5 | 325 | 10 x 16 | 400 | 10 x 20 | 465 | 16 x 25 | 590 | |
| 330 | | 10 x 16 | 440 | 10 x 20 | 535 | 12.5 x 20 | 650 | 16 x 25 | 720 | |
| 470 | | 10 x 20 | 580 | 12.5 x 20 | 730 | 12.5 x 25 | 800 | 16 x 30.5 | 875 | |
| 1000 | | 12.5 x 25 | 995 | 16 x 25 | 1110 | 16 x 30.5 | 1200 | 18 x 40 | 1320 | |
| 2200 | | 16 x 30.5 | 1450 | 18 x 35.5 | 1530 | 18 x 40 | 1840 | | | |
| 3300 | | 18 x 35.5 | 1660 | | | | | | | |
| 4700 | | 18 x 40 | 2030 | | | | | | | |