

## VT 型片式铝电解电容

## VT Series Chip Type Aluminum Electrolytic Capacitors

## 特点 Features

- 产品直径 Case diameter:  $\Phi$  4mm –  $\Phi$  10mm.
- 适用于再流焊。 Reflow soldering is available.
- 适用于高密度表面组装。 Available for high density surface mounting.
- 工作温度范围宽 (-40 ~ +105℃) Operating over wide temperature range.
- ROHS 指令已对应完毕。 Adapted to the ROHS directive.

## 主要技术性能 Specifications

| 项目 Items  | 特性 Characteristics  |   |      |      |      |      |      |      |
|---|---|---|------|------|------|------|------|------|
| 工作温度范围<br>Operating Temperature Range                               | -40℃ ~ +105℃  |   |      |      |      |      |      |      |
| 额定电压范围<br>Rated Voltage Range                                       | 6.3V ~ 50V  |   |      |      |      |      |      |      |
| 标称容量范围<br>Nominal Capacitance Range                                 | 0.1 ~ 1500 $\mu$ F  |   |      |      |      |      |      |      |
| 标称容量允许偏差<br>Nominal Capacitance Tolerance                           | $\pm$ 20% (20℃, 120Hz)  |   |      |      |      |      |      |      |
| 漏电流<br>Leakage Current  | I $\leq$ 0.01C <sub>R</sub> V <sub>R</sub> or 3( $\mu$ A), 取较大者 (2分钟) C <sub>R</sub> : 标称容量 ( $\mu$ F) U <sub>R</sub> : 额定电压 (V)<br>I $\leq$ 0.01C <sub>R</sub> V <sub>R</sub> or 3( $\mu$ A) Whichever is greater(at 20℃,After 2 minutes)<br>C <sub>R</sub> : Nominal Capacitance ( $\mu$ F) U <sub>R</sub> : Rated voltages (V) |   |      |      |      |      |      |      |
| 损耗角正切 (tg $\delta$ )<br>Dissipation Factor (Max)<br>20℃, 120Hz      | U <sub>R</sub> (V)  | 4   | 6.3  | 10   | 16   | 25   | 35   | 50   |
|   | tg $\delta$   | 0.35  | 0.28 | 0.24 | 0.20 | 0.16 | 0.14 | 0.12 |
| 耐久性<br>Load Life  | +105℃施加额定电压 1000 小时后, 电容器应满足以下要求:<br>After 1000 hours' application of rated voltage at 105℃, the capacitor shall meet the following requirement:  |   |      |      |      |      |      |      |
|   | 容量变化率<br>Capacitance Change   | ±20%初始值以内<br>Within $\pm$ 20% of the initial value                    |      |      |      |      |      |      |
|   | 损耗角正切<br>Dissipation Factor   | $\leq$ 200%初始规定值<br>Not more than 200% of the initial specified value |      |      |      |      |      |      |
|   | 漏电流<br>Leakage Current  | $\leq$ 初始规定值<br>Not more than the initial specified value             |      |      |      |      |      |      |
| 高温贮存<br>Shelf Life  | +105℃贮存 1000 小时后, 电容器应满足以上耐久性要求<br>After storage for 1000 hours at +105℃, the capacitors shall meet the requirement of load life above  |   |      |      |      |      |      |      |
| 低温特性<br>Low Temperature Stability<br>阻抗比<br>Impedance Ratio (120Hz) | U <sub>R</sub> (V)  | 4   | 6.3  | 10   | 16   | 25   | 35   | 50   |
|   | Z(-25℃)/Z(+20℃)   | 7   | 4    | 3    | 2    | 2    | 2    | 2    |
|   | Z(-40℃)/Z(+20℃)   | 15  | 8    | 6    | 4    | 4    | 3    | 3    |
| 耐焊接热<br>Resistance to Soldering Heat                                | 在 250℃的条件下, 电容器在热板上保持 30 秒, 然后从热板上取出电容器, 让其在室温下恢复, 电容器应满足以下要求: The capacitors shall be kept on the hot plate maintained at 250℃ for 30 seconds. After removing from the hot plate and restored at room temperature, they meet the following requirement.  |   |      |      |      |      |      |      |
|   | 容量变化率<br>Capacitance Change   | ±10%初始值以内<br>Within $\pm$ 10% of the initial value                    |      |      |      |      |      |      |
|   | 损耗角正切 (tg $\delta$ )<br>Dissipation Factor  | $\leq$ 初始规定值<br>Not more than the initial specified value             |      |      |      |      |      |      |
|   | 漏电流<br>Leakage Current  | $\leq$ 初始规定值<br>Not more than the initial specified value             |      |      |      |      |      |      |

尺寸图 Dimensions



(mm)

|   | 4 × 5.4   | 5 × 5.4 | 6.3 × 5.4 | 6.3 × 7.7 | 8 × 6.5 | 8 × 10.5  | 10 × 10.5 |  |
|---|-----------|---------|-----------|-----------|---------|-----------|-----------|--|
| A | 1.8       | 2.1     | 2.4       | 2.4       | 2.9     | 2.9       | 3.2       |  |
| B | 4.3       | 5.3     | 6.6       | 6.6       | 8.3     | 8.3       | 10.3      |  |
| C | 4.3       | 5.3     | 6.6       | 6.6       | 8.3     | 8.3       | 10.3      |  |
| E | 1.0       | 1.3     | 2.2       | 2.2       | 2.3     | 3.1       | 4.5       |  |
| L | 5.4       | 5.4     | 5.4       | 7.7       | 6.5     | 10.5      | 10.5      |  |
| H | 0.5 ~ 0.8 |         |           |           |         | 0.8 ~ 1.1 |           |  |

■ 标称电容量、额定电压、额定纹波电流与外形尺寸对应表

Nominal capacitance, rated voltage, rated ripple current and case size table

| V<br>μF | 6.3       |       | 10        |       | 16        |       | 25        |       | 35        |       | 50        |       |
|---------|-----------|-------|-----------|-------|-----------|-------|-----------|-------|-----------|-------|-----------|-------|
|         | D×L<br>mm | I~ mA | D×L<br>mm | I~ mA | D×L<br>mm | I~ mA | D×L<br>mm | I~ mA | D×L<br>mm | I~ mA | D×L<br>mm | I~ mA |
| 0.1     |           |       |           |       |           |       |           |       |           |       | 4×5.4     | 2.3   |
| 0.22    |           |       |           |       |           |       |           |       |           |       | 4×5.4     | 3.4   |
| 0.33    |           |       |           |       |           |       |           |       |           |       | 4×5.4     | 4.1   |
| 0.47    |           |       |           |       |           |       |           |       |           |       | 4×5.4     | 5     |
| 1.0     |           |       |           |       |           |       |           |       |           |       | 4×5.4     | 10    |
| 2.2     |           |       |           |       |           |       |           |       |           |       | 4×5.4     | 16    |
| 3.3     |           |       |           |       |           |       |           |       | 4×5.4     | 13    | 4×5.4     | 16    |
| 4.7     |           |       |           |       |           |       | 4×5.4     | 22    | 4×5.4     | 22    | 5×5.4     | 23    |
| 10      |           |       |           |       | 4×5.4     | 28    | 5×5.4     | 28    | 5×5.4     | 30    | 6.3×5.4   | 32    |
| 22      | 4×5.4     | 29    | 5×5.4     | 30    | 5×5.4     | 39    | 6.3×5.4   | 55    | 6.3×5.4   | 60    | 6.3×7.7   | 51    |
| 33      | 5×5.4     | 34    | 5×5.4     | 34    | 5×5.4     | 35    | 6.3×5.4   | 65    | 8×6.5     | 84    | 6.3×7.7   | 70    |
| 47      | 5×5.4     | 46    | 6.3×5.4   | 48    | 6.3×5.4   | 70    | 6.3×5.4   | 70    | 6.3×7.7   | 80    | 6.3×7.7   | 80    |
| 100     | 6.3×5.4   | 71    | 6.3×5.4   | 69    | 6.3×5.4   | 70    | 6.3×7.7   | 100   | 8×10.5    | 296   | 8×10.5    | 230   |
| 220     | 6.3×7.7   | 120   | 6.3×7.7   | 120   | 6.3×7.7   | 120   | 8×10.5    | 320   | 10×10.5   | 435   | 10×10.5   | 375   |
| 330     | 8×10.5    | 290   | 8×10.5    | 305   | 8×10.5    | 425   | 10×10.5   | 450   | 10×10.5   | 450   |           |       |
| 470     | 8×10.5    | 330   | 8×10.5    | 340   | 8×10.5    | 340   | 10×10.5   | 490   |           |       |           |       |
| 1000    | 8×10.5    | 340   | 10×10.5   | 410   | 10×10.5   | 450   |           |       |           |       |           |       |
| 1500    | 10×10.5   | 475   |           |       |           |       |           |       |           |       |           |       |

└ I~ = Rated ripple current (mA) (105°C, 120Hz) I~ = 额定纹波电流 (mA) (105°C, 120Hz)

■ 额定纹波电流的频率系数 Frequency coefficient of ripple current

| Frequency 频率   | 50Hz | 120Hz | 300Hz | 1KHz | 10K~100Hz |
|----------------|------|-------|-------|------|-----------|
| Coefficient 系数 | 0.70 | 1.00  | 1.17  | 1.36 | 1.50      |

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