

VCS Series

Features

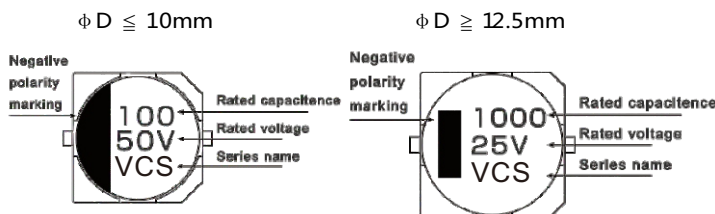
- 105°C Standard, Load life 2000 hours
- Designed for reflow soldering
- Designed for surface mounting on high density PC board
- Compliant to the RoHS directive
- 105°C 宽温通用品，寿命2000小时
- 适合回流焊
- 专为高密度PC板表面安装而设计
- RoHS指令对策品



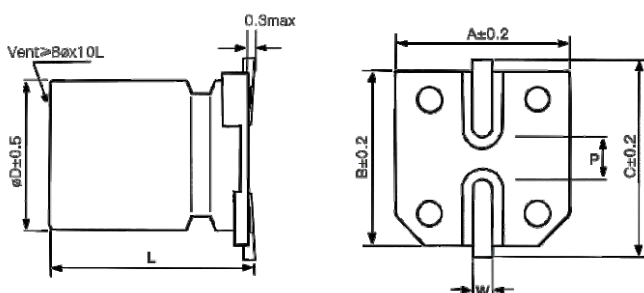
Marking color : Black

| Specifications | | | | | | | | | | |
|--|--|--|-------|------|--------------|----|----|----|-----|---------------------------|
| Category temp. range | -55°C to +105°C | | | | | | | | | |
| Capacitance tolerance | ±20% (120 Hz / +20 °C) | | | | | | | | | |
| Leakage current | $I \leq 0.01 CV$ or 3 μA whichever is greater (after 2 minutes) | | | | | | | | | |
| Tan δ | Please see the attached characteristics list | | | | | | | | | |
| Characteristics at low temperature | Rated voltage (V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | Impedance ratio at 120 Hz |
| | Z (-25 °C) / Z (+20 °C) | 4 | 4 | 3 | 2 | 2 | 2 | 2 | 3 | |
| | Z (-55 °C) / Z (+20 °C) | 12 | 8 | 6 | 4 | 3 | 3 | 3 | 4 | |
| Endurance | After applying rated working voltage for 2000 hours at +105 °C ± 2 °C, and then being stabilized at +20 °C , capacitors shall meet the following limits. | | | | | | | | | |
| | Capacitance change | $\phi D \leq 6.3mm$: Within ±25% of the initial value $\phi D \geq 8mm$: Within ±20% of the initial value | | | | | | | | |
| | Dissipation factor (tan δ) | $\phi D \leq 6.3mm$: Less than 300% of the initial value $\phi D \geq 8mm$: Less than 200% of the initial value | | | | | | | | |
| | Leakage current | Within the initial limit | | | | | | | | |
| Shelf life | After storage for 1000 h at +105 °C ± 2 °C with no voltage applied and then being stabilized at +20 °C, capacitors shall meet the limits specified in endurance. | | | | | | | | | |
| Resistance to soldering heat | After reflow soldering and then being stabilized at +20 °C, capacitors shall meet the following limits. | | | | | | | | | |
| | Capacitance change | Within ±10% of the initial value | | | | | | | | |
| | Dissipation factor (tan δ) | Within the initial limit | | | | | | | | |
| | Leakage current | Within the initial limit | | | | | | | | |
| Frequency correction factor for ripple current | Frequency | 50Hz | 120Hz | 1kHz | 10kHz \leq | | | | | |
| | $C \leq 1000\mu F$ | 0.7 | 1.0 | 1.2 | 1.3 | | | | | |
| | $C > 1000\mu F$ | 0.8 | 1.0 | 1.1 | 1.2 | | | | | |

Marking :



Dimensions :



| Dimensions | | | | | | Unit : mm |
|------------|----------------|------|------|------|---------|-------------|
| ϕD | L | A | B | C | W | P \pm 0.2 |
| 4 | 5.7 \pm 0.3 | 4.3 | 4.3 | 5.1 | 0.5~0.8 | 1.0 |
| 5 | 5.7 \pm 0.3 | 5.3 | 5.3 | 6.1 | 0.5~0.8 | 1.3 |
| 6.3 | 5.7 \pm 0.3 | 6.6 | 6.6 | 7.3 | 0.5~0.8 | 2.2 |
| 6.3 | 7.7 \pm 0.3 | 6.6 | 6.6 | 7.3 | 0.5~0.8 | 2.2 |
| 8 | 6.5 \pm 0.3 | 8.3 | 8.3 | 9.2 | 0.7~1.2 | 3.1 |
| 8 | 10.5 \pm 0.5 | 8.3 | 8.3 | 9.2 | 0.7~1.2 | 3.1 |
| 10 | 7.7 \pm 0.3 | 10.3 | 10.3 | 11.2 | 0.7~1.2 | 4.4 |
| 10 | 10.5 \pm 0.5 | 10.3 | 10.3 | 11.2 | 0.7~1.2 | 4.4 |
| 10 | 13 \pm 0.5 | 10.3 | 10.3 | 11.2 | 0.7~1.2 | 4.4 |
| 12.5 | 13.5 \pm 0.5 | 13.0 | 13.0 | 14.0 | 1.0~1.4 | 4.4 |
| 12.5 | 16 \pm 0.5 | 13.0 | 13.0 | 14.0 | 1.0~1.4 | 4.4 |

Characteristics list

| Rated voltage (V) | Capacitance (±20%) (μF) | Case size | | Specification | | Taping&Reel |
|------------------------|-----------------------------------|--------------|-------------|--|--------|---------------------|
| | | øD (mm) | L (mm) | Rated ripple current① (mA rms) | tan δ② | MPQ (pcs/reel) |
| 6.3 | 22 | 4 | 5.7 | 22 | 0.35 | 2000 |
| | 33 | 5 | 5.7 | 34 | 0.35 | 1000 |
| | 47 | 5 | 5.7 | 38 | 0.35 | 1000 |
| | 100 | 5 | 5.7 | 45 | 0.35 | 1000 |
| | | 6.3 | 5.7 | 69 | 0.35 | 1000 |
| | 220 | 6.3 | 5.7 | 95 | 0.35 | 1000 |
| | | 6.3 | 7.7 | 120 | 0.35 | 1000 |
| | 330 | 6.3 | 7.7 | 105 | 0.35 | 1000 |
| | | 8 | 6.5 | 120 | 0.35 | 1000 |
| | | 8 | 10.5 | 230 | 0.35 | 500 |
| 470 | 6.3 | 7.7 | 120 | 0.35 | 1000 | |
| | 8 | 10.5 | 230 | 0.35 | 500 | |
| 1000 | 10 | 10.5 | 315 | 0.37 | 500 | |
| 2200 | 12.5 | 13.5 | 620 | 0.42 | 200 | |
| 10 | 22 | 4 | 5.7 | 23 | 0.24 | 2000 |
| | 33 | 4 | 5.7 | 25 | 0.24 | 2000 |
| | | 5 | 5.7 | 35 | 0.24 | 1000 |
| | 47 | 5 | 5.7 | 38 | 0.24 | 1000 |
| | 100 | 5 | 5.7 | 45 | 0.24 | 1000 |
| | | 6.3 | 5.7 | 69 | 0.24 | 1000 |
| | 150 | 6.3 | 5.7 | 80 | 0.24 | 1000 |
| | 220 | 6.3 | 5.7 | 80 | 0.24 | 1000 |
| | | 6.3 | 7.7 | 120 | 0.24 | 1000 |
| | | 8 | 6.5 | 120 | 0.24 | 1000 |
| | 330 | 6.3 | 7.7 | 125 | 0.24 | 1000 |
| | | 8 | 10.5 | 290 | 0.24 | 500 |
| | 470 | 8 | 10.5 | 290 | 0.24 | 500 |
| | | 10 | 7.7 | 290 | 0.24 | 500 |
| 1000 | 10 | 10.5 | 400 | 0.26 | 500 | |
| 2200 | 12.5 | 13.5 | 680 | 0.38 | 200 | |

① Rated ripple current (120Hz / +105°C) ② tan δ (120Hz / +20°C) ③ For plastic reel packaging , the Part Number is appended with "PR" at the end.

※ Please refer to the page of reflow conditions for reflow profile.

Characteristics list

| Rated voltage (V) | Capacitance (±20%) (μF) | Case size | | Specification | | Taping&Reel |
|-------------------|-------------------------|-----------|--------|--------------------------------|--------|----------------|
| | | øD (mm) | L (mm) | Rated ripple current① (mA rms) | tan δ② | MPQ (pcs/reel) |
| 16 | 10 | 4 | 5.7 | 20 | 0.20 | 2000 |
| | 22 | 4 | 5.7 | 22 | 0.20 | 2000 |
| | | 5 | 5.7 | 30 | 0.20 | 1000 |
| | 33 | 5 | 5.7 | 35 | 0.20 | 1000 |
| | | 6.3 | 5.7 | 45 | 0.20 | 1000 |
| | 47 | 5 | 5.7 | 39 | 0.20 | 1000 |
| | | 6.3 | 5.7 | 55 | 0.20 | 1000 |
| | 100 | 6.3 | 5.7 | 70 | 0.20 | 1000 |
| | | 8 | 6.5 | 120 | 0.20 | 1000 |
| | 220 | 6.3 | 7.7 | 120 | 0.20 | 1000 |
| | | 8 | 6.5 | 120 | 0.20 | 1000 |
| | | 8 | 10.5 | 220 | 0.20 | 500 |
| | 330 | 8 | 10.5 | 220 | 0.20 | 500 |
| | | 10 | 7.7 | 200 | 0.20 | 500 |
| | 470 | 8 | 10.5 | 250 | 0.20 | 500 |
| 10 | | 10.5 | 340 | 0.20 | 500 | |
| 1000 | 10 | 10.5 | 340 | 0.22 | 500 | |
| | 10 | 13 | 390 | 0.22 | 400 | |
| | 12.5 | 13.5 | 500 | 0.32 | 200 | |
| 25 | 4.7 | 4 | 5.7 | 17 | 0.18 | 2000 |
| | 10 | 4 | 5.7 | 20 | 0.18 | 2000 |
| | | 5 | 5.7 | 27 | 0.18 | 1000 |
| | 22 | 5 | 5.7 | 30 | 0.18 | 1000 |
| | | 6.3 | 5.7 | 44 | 0.18 | 1000 |
| | 33 | 5 | 5.7 | 35 | 0.18 | 1000 |
| | | 6.3 | 5.7 | 46 | 0.18 | 1000 |
| | 47 | 6.3 | 5.7 | 48 | 0.18 | 1000 |
| | | 8 | 6.5 | 79 | 0.18 | 1000 |
| | 100 | 6.3 | 7.7 | 100 | 0.18 | 1000 |
| | | 8 | 6.5 | 100 | 0.18 | 1000 |
| | | 8 | 10.5 | 150 | 0.18 | 500 |
| | 220 | 8 | 10.5 | 200 | 0.18 | 500 |
| | | 10 | 7.7 | 190 | 0.18 | 500 |
| | 330 | 8 | 10.5 | 220 | 0.18 | 500 |
| 10 | | 10.5 | 240 | 0.18 | 500 | |
| 470 | 10 | 10.5 | 280 | 0.18 | 500 | |
| 1000 | 12.5 | 13.5 | 580 | 0.30 | 200 | |

① Rated ripple current (120Hz / +105°C) ② tan δ (120Hz / +20°C) ③ For plastic reel packaging, the Part Number is appended with "PR" at the end.

※ Please refer to the page of reflow conditions for reflow profile.

Characteristics list

| Rated voltage (V) | Capacitance (±20%) (μF) | Case size | | Specification | | Taping&Reel |
|------------------------|-----------------------------------|--------------|-------------|--|--------|---------------------|
| | | øD (mm) | L (mm) | Rated ripple current① (mA rms) | tan δ② | MPQ (pcs/reel) |
| 35 | 4.7 | 4 | 5.7 | 17 | 0.16 | 2000 |
| | 10 | 4 | 5.7 | 17 | 0.16 | 2000 |
| | | 5 | 5.7 | 25 | 0.16 | 1000 |
| | 22 | 5 | 5.7 | 30 | 0.16 | 1000 |
| | | 6.3 | 5.7 | 44 | 0.16 | 1000 |
| | 33 | 6.3 | 5.7 | 46 | 0.16 | 1000 |
| | | 8 | 6.5 | 76 | 0.16 | 1000 |
| | 47 | 6.3 | 5.7 | 50 | 0.16 | 1000 |
| | | 6.3 | 7.7 | 80 | 0.16 | 1000 |
| | | 8 | 6.5 | 80 | 0.16 | 1000 |
| | 100 | 6.3 | 7.7 | 85 | 0.16 | 1000 |
| | | 8 | 10.5 | 150 | 0.16 | 500 |
| | | 10 | 7.7 | 160 | 0.16 | 500 |
| | 150 | 8 | 10.5 | 185 | 0.16 | 500 |
| | 220 | 8 | 10.5 | 220 | 0.16 | 500 |
| | | 10 | 10.5 | 250 | 0.16 | 500 |
| 330 | 10 | 10.5 | 300 | 0.16 | 500 | |
| | 10 | 13 | 330 | 0.16 | 400 | |
| 470 | 10 | 10.5 | 310 | 0.16 | 500 | |
| | 10 | 13 | 375 | 0.16 | 400 | |
| | 12.5 | 13.5 | 520 | 0.22 | 200 | |
| 50 | 1 | 4 | 5.7 | 8 | 0.14 | 2000 |
| | 2.2 | 4 | 5.7 | 12 | 0.14 | 2000 |
| | 3.3 | 4 | 5.7 | 14 | 0.14 | 2000 |
| | 4.7 | 4 | 5.7 | 14 | 0.14 | 2000 |
| | | 5 | 5.7 | 20 | 0.14 | 1000 |
| | 10 | 5 | 5.7 | 20 | 0.14 | 1000 |
| | | 6.3 | 5.7 | 32 | 0.14 | 1000 |
| | 22 | 6.3 | 5.7 | 38 | 0.14 | 1000 |
| | | 6.3 | 7.7 | 50 | 0.14 | 1000 |
| | | 8 | 6.5 | 70 | 0.14 | 1000 |
| | 33 | 6.3 | 7.7 | 60 | 0.14 | 1000 |
| | | 8 | 6.5 | 70 | 0.14 | 1000 |
| | 47 | 6.3 | 7.7 | 63 | 0.14 | 1000 |
| | | 8 | 6.5 | 85 | 0.14 | 1000 |
| | | 8 | 10.5 | 100 | 0.14 | 500 |
| | 100 | 8 | 10.5 | 160 | 0.14 | 500 |
| | | 10 | 7.7 | 180 | 0.14 | 500 |
| | | 10 | 10.5 | 160 | 0.14 | 500 |
| 220 | 10 | 10.5 | 230 | 0.14 | 500 | |
| | 10 | 13 | 300 | 0.14 | 400 | |
| 330 | 12.5 | 13.5 | 420 | 0.18 | 200 | |

① Rated ripple current (120Hz / +105°C) ② tan δ (120Hz / +20°C) ③ For plastic reel packaging , the Part Number is appended with "PR" at the end.

※ Please refer to the page of reflow conditions for reflow profile.

Characteristics list

| Rated voltage (V) | Capacitance (±20%) (μF) | Case size | | Specification | | Taping&Reel |
|---------------------|-----------------------------|-----------|----------|----------------------------------|--------|------------------|
| | | øD (mm) | L (mm) | Rated ripple current① (mA rms) | tan δ② | MPQ (pcs/reel) |
| 63 | 1 | 4 | 5.7 | 8 | 0.14 | 2000 |
| | 2.2 | 4 | 5.7 | 11 | 0.14 | 2000 |
| | 3.3 | 5 | 5.7 | 14 | 0.14 | 1000 |
| | | 6.3 | 5.7 | 30 | 0.14 | 1000 |
| | 4.7 | 6.3 | 5.7 | 25 | 0.14 | 1000 |
| | 10 | 6.3 | 5.7 | 24 | 0.14 | 1000 |
| | | 8 | 6.5 | 25 | 0.14 | 1000 |
| | 22 | 6.3 | 7.7 | 49 | 0.14 | 1000 |
| | | 8 | 6.5 | 55 | 0.14 | 1000 |
| | | 8 | 10.5 | 98 | 0.14 | 500 |
| | 33 | 8 | 10.5 | 112 | 0.14 | 500 |
| | 47 | 8 | 10.5 | 119 | 0.14 | 500 |
| | | 10 | 10.5 | 160 | 0.14 | 500 |
| | 100 | 10 | 10.5 | 196 | 0.14 | 500 |
| 10 | | 13 | 210 | 0.14 | 400 | |
| 12.5 | | 13.5 | 270 | 0.16 | 200 | |
| 220 | 12.5 | 13.5 | 470 | 0.16 | 200 | |
| 100 | 4.7 | 5 | 5.7 | 15 | 0.14 | 1000 |
| | | 6.3 | 5.7 | 21 | 0.14 | 1000 |
| | | 6.3 | 7.7 | 35 | 0.14 | 1000 |
| | 10 | 6.3 | 7.7 | 35 | 0.14 | 1000 |
| | | 8 | 10.5 | 80 | 0.14 | 500 |
| | 22 | 8 | 10.5 | 90 | 0.14 | 500 |
| | | 10 | 10.5 | 130 | 0.14 | 500 |
| | 33 | 10 | 10.5 | 130 | 0.14 | 500 |
| | 47 | 10 | 10.5 | 140 | 0.14 | 500 |
| | | 10 | 13 | 160 | 0.14 | 400 |
| | | 12.5 | 13.5 | 250 | 0.16 | 200 |
| 100 | 12.5 | 13.5 | 380 | 0.16 | 200 | |

① Rated ripple current (120Hz / +105°C) ② tan δ (120Hz / +20°C) ③ For plastic reel packaging , the Part Number is appended with "PR" at the end.

※ Please refer to the page of reflow conditions for reflow profile.

Note: All design and specification are for reference only and is subject to change without prior notice. If any doubt about safety for your application, please contact KNSCHA immediately for technical assistance before purchase.

备注：以上所提供的设计及特性参数仅供参考，任何修改不作预先通知。如果在使用上有疑问，请再购买前与科尼盛联系，以便我们提供技术上的服务和协助。