

VA series

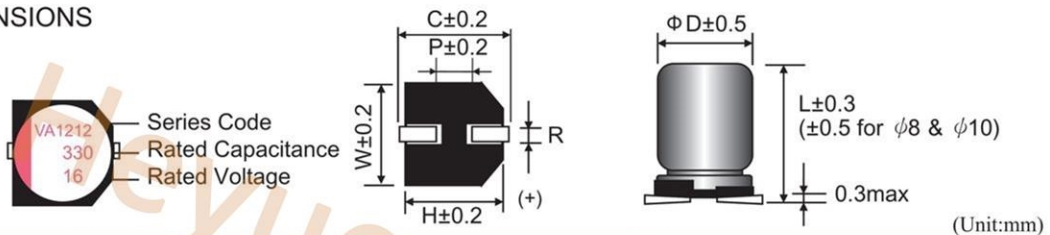
- Standard SMD type
- Rated voltage : 2.5~25V
- Endurance : 2,000 hours at 105°C
- Applications : motherboards, server, VGA, etc.
- RoHS compliance
- Halogen Free compliant

SPECIFICATIONS

| Items | Conditions | Characteristics |
|---|---|--|
| Category Temperature Range | — | -55 to +105°C |
| Rated Voltage Range | — | 2.5 ~ 25V |
| Capacitance Tolerance | at 20°C, 120Hz | ±20%(M) |
| Surge Voltage | at 105°C | Rated voltage × 1.15V |
| Leakage Current | at 20°C after 2 minutes | $I \leq 0.2CV$ or $300(\mu A)$ Whichever is greater measured, after 2 minutes application of rated working voltage at +20°C. Please see the attached characteristics list |
| Dissipation Factor (tan δ) | at 20°C, 120Hz | Please see the attached characteristics list |
| Characteristics of Impedance at low, high temperature | at -55°C, 100kHz | $Z(-55^\circ C)/Z(+20^\circ C) \leq 1.25$ |
| | at -25°C, 100kHz | $Z(-25^\circ C)/Z(+20^\circ C) \leq 1.15$ |
| Endurance | The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 2,000 hours at 105°C. | Appearance NO significant damage. |
| | | Capacitance change $\leq \pm 20\%$ of the initial value. |
| | | DF (tan δ) $\leq 150\%$ of the initial specified value. |
| | | ESR $\leq 150\%$ of the initial specified value. |
| | | Leakage current \leq The initial specified value. |
| Damp Heag (Steady State) | The following specifications shall be satisfied when the capacitors are restored to 20°C after subjecting them to store at 60°C, 90 to 95% RH for 1,000 hours ,without DC applied. | Appearance NO significant damage. |
| | | Capacitance change $\leq \pm 20\%$ of the initial value. |
| | | DF (tan δ) $\leq 150\%$ of the initial specified value. |
| | | ESR $\leq 150\%$ of the initial specified value. |
| | | Leakage current \leq The initial specified value. |
| Surge Voltage | The capacitors shall be subjected to 1,000 cycles each consisting of charge with the surge voltages specified at 105°C for 30 seconds through a protective resistor (R=1kΩ) and discharge for 5 minutes 30 seconds. | Appearance NO significant damage. |
| | | Capacitance change $\leq \pm 20\%$ of the initial value. |
| | | DF (tan δ) $\leq 150\%$ of the initial specified value. |
| | | ESR $\leq 150\%$ of the initial specified value. |
| | | Leakage current \leq The initial specified value. |

※ Note: If any doubt arises, measure the leakage current after following voltage treatment.
Voltage treatment : DC rated voltage are applied to the capacitors for 120 minutes at 105°C.

MARKING AND DIMENSIONS



| $\phi D \times L$ | ϕD | L | W | H | C | R | P |
|-------------------|----------|------|------|------|------|---------|-----|
| 5×6 | 5.0 | 6.0 | 5.3 | 5.3 | 6.0 | 0.5~0.8 | 1.4 |
| 6.3×6 | 6.3 | 6.0 | 6.6 | 6.6 | 7.3 | 0.5~0.8 | 2.1 |
| 6.3×7 | 6.3 | 7.0 | 6.6 | 6.6 | 7.3 | 0.5~0.8 | 2.1 |
| 6.3×9.5 | 6.3 | 9.5 | 6.6 | 6.6 | 7.3 | 0.5~0.8 | 2.1 |
| 8×7 | 8.0 | 7.0 | 8.3 | 8.3 | 9.0 | 0.5~0.8 | 3.2 |
| 8×9.5 | 8.0 | 9.5 | 8.3 | 8.3 | 9.0 | 0.8~1.1 | 3.2 |
| 8×12 | 8.0 | 12.0 | 8.3 | 8.3 | 9.0 | 0.8~1.1 | 3.2 |
| 10×10.5 | 10.0 | 10.5 | 10.3 | 10.3 | 11.0 | 0.8~1.1 | 4.6 |
| 10×12.5 | 10.0 | 12.5 | 10.3 | 10.3 | 11.0 | 0.8~1.1 | 4.6 |

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，如有使用上任何疑问，请在采购前与我们联系，以便提供技术上的协助。

VA SERIES STANDARD CHARACTERISTICS LIST

| Rated Voltage (S.V.) | Cap (μF) | Size DxL | Leakage current (μA) max. ×2 | ESR (mΩ) max. 100k to 300kHz / 20°C | Rated Ripple Current (mA rms) 100kHz / 105°C | D.F. (tanδ) max. 120Hz / 20°C |
|----------------------|----------|----------|------------------------------|-------------------------------------|--|-------------------------------|
| 2.5 (2.9) | 220 | 6.3×6 | 300 | 25 | 2,390 | 0.12 |
| | 330 | 6.3×6 | 300 | 25 | 2,390 | 0.12 |
| | 560 | 6.3×7 | 300 | 25 | 2,390 | 0.12 |
| | 820 | 6.3×9.5 | 410 | 20 | 3,000 | 0.12 |
| | 1,200 | 8×9.5 | 600 | 20 | 4,520 | 0.12 |
| | 1,500 | 8×9.5 | 750 | 20 | 4,520 | 0.12 |
| | 1,800 | 8×12 | 900 | 13 | 4,520 | 0.12 |
| | 2,200 | 10×10.5 | 1,100 | 18 | 4,520 | 0.12 |
| | 2,700 | 10×12.5 | 1,350 | 15 | 5,200 | 0.12 |
| 4 (4.6) | 220 | 6.3×6 | 300 | 25 | 2,000 | 0.12 |
| | 560 | 6.3×9.5 | 448 | 20 | 4,500 | 0.12 |
| | 820 | 8×9.5 | 656 | 20 | 4,500 | 0.12 |
| | 1,000 | 8×9.5 | 800 | 20 | 4,500 | 0.12 |
| | 1,200 | 8×12 | 960 | 15 | 4,820 | 0.12 |
| | 1,500 | 10×10.5 | 1,200 | 15 | 4,820 | 0.12 |
| | 2,200 | 10×12.5 | 1,760 | 15 | 5,200 | 0.12 |
| 6.3 (7.2) | 100 | 6.3×6 | 300 | 25 | 2,400 | 0.12 |
| | 220 | 6.3×6 | 300 | 25 | 2,400 | 0.12 |
| | 220 | 8×7 | 300 | 25 | 3,020 | 0.12 |
| | 560 | 6.3×9.5 | 705 | 20 | 3,020 | 0.12 |
| | 820 | 8×9.5 | 1,033 | 20 | 4,500 | 0.12 |
| | 1,000 | 8×9.5 | 1,260 | 20 | 4,500 | 0.12 |
| | 1,200 | 8×12 | 1,512 | 15 | 4,800 | 0.12 |
| | 1,500 | 10×10.5 | 1,890 | 15 | 4,950 | 0.12 |
| | 2,200 | 10×12.5 | 2,772 | 15 | 5,200 | 0.12 |
| 10 (11.5) | 33 | 5×6 | 300 | 45 | 1,100 | 0.12 |
| | 100 | 6.3×6 | 300 | 30 | 1,700 | 0.12 |
| | 150 | 6.3×6 | 300 | 45 | 1,700 | 0.12 |
| | 330 | 6.3×9.5 | 660 | 45 | 2,050 | 0.12 |
| | 560 | 8×9.5 | 1,120 | 35 | 2,560 | 0.12 |
| | 680 | 8×9.5 | 1,360 | 35 | 2,560 | 0.12 |
| | 820 | 8×12 | 1,640 | 17 | 3,950 | 0.12 |
| | 1,000 | 10×10.5 | 2,000 | 15 | 3,950 | 0.12 |
| | 1,500 | 10×12.5 | 3,000 | 13 | 5,230 | 0.12 |
| 16 (18.4) | 22 | 5×6 | 300 | 40 | 1,000 | 0.12 |
| | 100 | 6.3×6 | 320 | 35 | 1,620 | 0.12 |
| | 270 | 6.3×9.5 | 864 | 20 | 2,500 | 0.12 |
| | 270 | 8×9.5 | 864 | 20 | 3,200 | 0.12 |
| | 330 | 8×9.5 | 1,056 | 20 | 3,690 | 0.12 |
| | 470 | 8×9.5 | 1,504 | 20 | 3,890 | 0.12 |
| | 560 | 8×12 | 1,792 | 20 | 3,940 | 0.12 |
| | 680 | 10×10.5 | 2,176 | 20 | 4,220 | 0.12 |
| | 820 | 10×12.5 | 2,624 | 16 | 4,720 | 0.12 |
| 1,000 | 10×12.5 | 3,200 | 16 | 5,200 | 0.12 | |

※ 1. Capacitance tolerance : ±20% (M)

※ 2. After 2 minutes

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VA SERIES STANDARD CHARACTERISTICS LIST

| Rated Voltage (S.V.) | Cap (μF) | Size DxL | Leakage current (μA) max. ※2 | ESR (mΩ) max. 100k to 300kHz / 20°C | Rated Ripple Current (mA rms) 100kHz / 105°C | D.F. (tanδ) max. 120Hz / 20°C |
|----------------------|----------|----------|------------------------------|-------------------------------------|--|-------------------------------|
| 20 (23.0) | 68 | 6.3x6 | 300 | 38 | 1,450 | 0.12 |
| | 180 | 6.3x9.5 | 720 | 30 | 2,450 | 0.12 |
| | 330 | 8x9.5 | 1,320 | 30 | 3,000 | 0.12 |
| | 470 | 8x12 | 1,880 | 28 | 3,320 | 0.12 |
| | 560 | 10x10.5 | 2,240 | 28 | 3,320 | 0.12 |
| | 680 | 10x12.5 | 2,720 | 28 | 4,220 | 0.12 |
| 25 (28.8) | 47 | 6.3x6 | 300 | 40 | 1,200 | 0.12 |
| | 100 | 6.3x9.5 | 500 | 30 | 2,000 | 0.12 |
| | 100 | 8x7 | 500 | 40 | 2,000 | 0.12 |
| | 150 | 8x9.5 | 750 | 35 | 3,000 | 0.12 |
| | 220 | 8x12 | 1,100 | 28 | 3,500 | 0.12 |
| | 330 | 10x10.5 | 1,650 | 30 | 3,800 | 0.12 |
| 470 | 10x12.5 | 2,350 | 28 | 4,000 | 0.12 | |

※ 1. Capacitance tolerance : ±20% (M)

※ 2. After 2 minutes

FREQUENCY COEFFICIENT FOR RIPPLE CURRENT

| Frequency | 120Hz ≤ f < 1kHz | 1kHz ≤ f < 10kHz | 10kHz ≤ f < 100kHz | 100kHz ≤ f < 500kHz |
|-------------|------------------|------------------|--------------------|---------------------|
| Coefficient | 0.05 | 0.3 | 0.7 | 1.0 |

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