

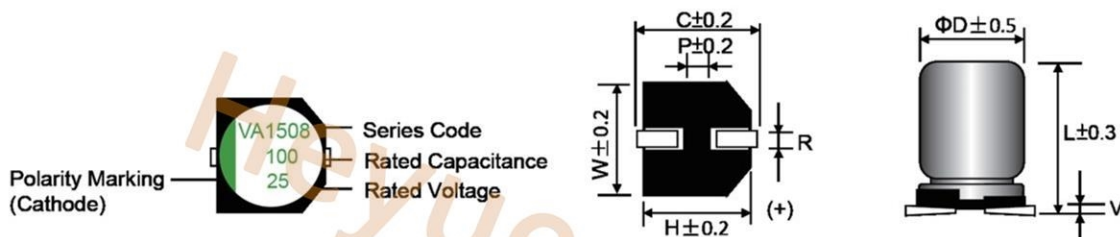
# HVA series

- Low ESR.
- High Voltage, Long Life.
- 105°C, 5,000 to 10,000hrs.
- RoHS compliant
- For high reliability applications.(Automotive equipment, Base station equipment,etc.)

## SPECIFICATIONS

| Items                                | Conditions                                                                                                                                                                                                                        | Characteristics                                                                                                                                                            |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Category Temperature Range           | —                                                                                                                                                                                                                                 | -55 to +105°C                                                                                                                                                              |
| Rated Voltage Range                  | —                                                                                                                                                                                                                                 | 16 ~ 125V                                                                                                                                                                  |
| Capacitance Tolerance                | at 20°C,120Hz                                                                                                                                                                                                                     | ±20%(M)                                                                                                                                                                    |
| Surge Voltage                        | at 15 ~ 35°C                                                                                                                                                                                                                      | Rated voltage ×1.25V                                                                                                                                                       |
| Leakage Current                      | at 20°C after 2 minutes                                                                                                                                                                                                           | $I \leq 0.01CV$ or $3(\mu A)$ Whichever is greater measured,after 2 minutes application of rated working voltage at +20°C.<br>Please see the attached characteristics list |
| Dissipation Factor ( $\tan \delta$ ) | at 20°C,120Hz                                                                                                                                                                                                                     | Please see the attached characteristics list                                                                                                                               |
| Endurance                            | The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 5,000 to 10,000 hours at 105°C.<br>$\Phi 6.3=5,000\text{hrs}, D \geq \Phi 8=10,000\text{hrs}.$    | Appearance NO significant damage.                                                                                                                                          |
|                                      |                                                                                                                                                                                                                                   | Capacitance change $\leq \pm 30\%$ of the initial value.                                                                                                                   |
|                                      |                                                                                                                                                                                                                                   | DF ( $\tan \delta$ ) $\leq 200\%$ of the initial specified value.                                                                                                          |
|                                      |                                                                                                                                                                                                                                   | ESR $\leq 200\%$ 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 $\leq \pm 30\%$ of the initial value.                                                                                                                   |
|                                      |                                                                                                                                                                                                                                   | DF ( $\tan \delta$ ) $\leq 200\%$ of the initial specified value.                                                                                                          |
|                                      |                                                                                                                                                                                                                                   | ESR $\leq 200\%$ 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 15~35°C for 30 seconds through a protective resistor (R = 1 k $\Omega$ ) and discharge for 5 minutes 30 seconds. | Appearance NO significant damage.                                                                                                                                          |
|                                      |                                                                                                                                                                                                                                   | Capacitance change $\leq \pm 30\%$ of the initial value.                                                                                                                   |
|                                      |                                                                                                                                                                                                                                   | DF ( $\tan \delta$ ) $\leq 200\%$ of the initial specified value.                                                                                                          |
|                                      |                                                                                                                                                                                                                                   | ESR $\leq 200\%$ 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 treatmen : DC rated voltage are applied to the capacitors for 120 minutes at 105°C.



(Unit:mm)

| Size    | $\phi D$ | L    | W    | H    | C    | R       | P   | V max |
|---------|----------|------|------|------|------|---------|-----|-------|
| 6.3×7.7 | 6.3      | 7.7  | 6.6  | 6.6  | 7.3  | 0.5~0.8 | 2.1 | 0.3   |
| 8×10    | 8.0      | 10.5 | 8.3  | 8.3  | 9.0  | 0.7~1.1 | 3.2 | 0.3   |
| 10×10   | 10.0     | 10.5 | 10.3 | 10.3 | 11.0 | 0.7~1.3 | 4.5 | 0.3   |
| 10×12   | 10.0     | 12.5 | 10.3 | 10.3 | 11.0 | 0.7~1.3 | 4.5 | 0.3   |

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。

## HVA SERIES STANRD CHARACTERISITICS LIST

| Rated voltage (S.V.) | Cap (μF) | Size Code DxL | Leakage current (μA) max. | ESR (mΩ) max. 100k to 300kHz / 20°C | Rated Ripple Current (mA rms) 100kHz / 105°C | D.F. (tanδ) max. 120Hz / 20°C |
|----------------------|----------|---------------|---------------------------|-------------------------------------|----------------------------------------------|-------------------------------|
| 16 (20)              | 120      | 6.3×7.7       | 19                        | 40                                  | 1,500                                        | 0.16                          |
|                      | 270      | 8x10          | 43                        | 26                                  | 2,000                                        | 0.16                          |
|                      | 470      | 10x10         | 75                        | 21                                  | 2,600                                        | 0.16                          |
|                      | 560      | 10x12         | 90                        | 15                                  | 3,000                                        | 0.16                          |
| 25 (32)              | 68       | 6.3x7.7       | 17                        | 45                                  | 1,400                                        | 0.16                          |
|                      | 150      | 8x10          | 38                        | 27                                  | 1,900                                        | 0.16                          |
|                      | 270      | 10x10         | 68                        | 22                                  | 2,500                                        | 0.16                          |
|                      | 330      | 10x12         | 83                        | 16                                  | 2,900                                        | 0.16                          |
| 35 (44)              | 47       | 6.3x7.7       | 16                        | 60                                  | 1,300                                        | 0.16                          |
|                      | 100      | 8x10          | 35                        | 30                                  | 1,800                                        | 0.16                          |
|                      | 150      | 10x10         | 53                        | 23                                  | 2,400                                        | 0.16                          |
|                      | 220      | 10x12         | 77                        | 17                                  | 2,800                                        | 0.16                          |
| 40 (50)              | 27       | 6.3x7.7       | 11                        | 70                                  | 1,200                                        | 0.16                          |
|                      | 56       | 8x10          | 22                        | 32                                  | 1,700                                        | 0.16                          |
|                      | 100      | 10x10         | 40                        | 24                                  | 2,400                                        | 0.16                          |
|                      | 120      | 10x12         | 48                        | 18                                  | 2,700                                        | 0.16                          |
| 50 (63)              | 15       | 6.3x7.7       | 8                         | 80                                  | 1,200                                        | 0.16                          |
|                      | 33       | 8x10          | 17                        | 35                                  | 1,600                                        | 0.16                          |
|                      | 56       | 10x10         | 28                        | 25                                  | 2,300                                        | 0.16                          |
|                      | 82       | 10x12         | 41                        | 19                                  | 2,600                                        | 0.16                          |
| 63 (79)              | 10       | 6.3x7.7       | 6                         | 100                                 | 1,000                                        | 0.16                          |
|                      | 22       | 8x10          | 14                        | 40                                  | 1,500                                        | 0.16                          |
|                      | 33       | 8x10          | 21                        | 40                                  | 1,500                                        | 0.16                          |
|                      |          | 10x10         | 21                        | 30                                  | 2,100                                        | 0.16                          |
|                      | 47       | 10x10         | 30                        | 30                                  | 2,100                                        | 0.16                          |
|                      | 56       | 10x12         | 35                        | 22                                  | 2,400                                        | 0.16                          |
| 80 (100)             | 12       | 10x10         | 10                        | 70                                  | 1,600                                        | 0.16                          |
|                      | 15       | 10x10         | 12                        | 70                                  | 1,600                                        | 0.16                          |
|                      | 18       | 10x12         | 14                        | 50                                  | 1,800                                        | 0.16                          |
| 100 (125)            | 10       | 10x10         | 10                        | 80                                  | 1,400                                        | 0.16                          |
|                      | 12       | 10x10         | 12                        | 80                                  | 1,400                                        | 0.16                          |
|                      | 15       | 10x12         | 15                        | 60                                  | 1,600                                        | 0.16                          |
| 125 (157)            | 10       | 10x10         | 13                        | 90                                  | 1,200                                        | 0.16                          |

## Frequency Coefficient of Permissible Ripple Current

| Frequency (Hz)   | 100 ≤ F < 1K | 1K ≤ F < 10K | 10K ≤ F < 100K | 100K ≤ F |
|------------------|--------------|--------------|----------------|----------|
| Capacitance (μF) |              |              |                |          |
| 4.7 < C ≤ 33     | 0.05         | 0.32         | 0.67           | 1.00     |
| 33 < C           | 0.10         | 0.35         | 0.70           | 1.00     |

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。