# ELNA — Vertical Chip Type Aluminum Electrolytic Capacitors VVV, VTV series

Code in front of series have been extracted from product code, which describes the segment of products, such as type and features.

- Compatible with surface mounting, low ESR capacitors.
- Environmental : GREEN CAP™ , RoHS compliance.
- Supplied with carrier taping.
- Guaranteed 2000 hours at 105℃.

Vibration resistance ⇦ Low ESR

VTV ⇦ VVV ⇦ VVD

Marking color : Black print

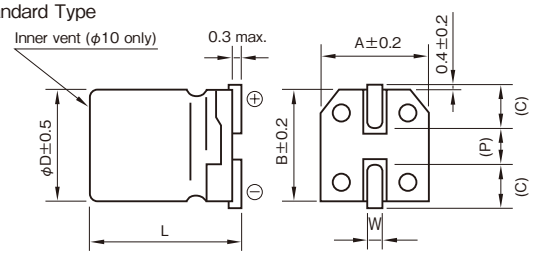
## Specifications

| Item | Performance |
|---|---|
| Category temperature range (℃) | −55 to +105 |
| Tolerance at rated capacitance (%) | ±20 (20℃,120Hz) |
| Leakage current (μA) (max.) | 0.01CV or 3 whichever is larger (after 2 minutes) C : Rated capacitance (μF) , V : Rated voltage (V) (20℃) |
| Tangent of loss angle (tanδ) | Rated voltage (V): 6.3 / 10 / 16 / 25 / 35 / 50<br>tanδ (max.): 0.26 / 0.19 / 0.16 / 0.14 / 0.12 / 0.10 (20℃,120Hz) |
| Characteristics at high and low temperature | Rated voltage (V): 6.3 / 10 / 16 / 25 / 35 / 50<br>Impedance ratio (max.) Z−25℃/Z+20℃: 2 / 2 / 2 / 2 / 2 / 2<br>Z−40℃/Z+20℃: 3 / 3 / 3 / 3 / 3 / 3<br>Z−55℃/Z+20℃: 4 / 4 / 4 / 3 / 3 / 3 (120Hz) |
| Endurance (105℃) (Applied ripple current) | Test time: 2000 hours<br>Leakage current: The initial specified value or less<br>Percentage of capacitance change: Within ±30% of initial value<br>Tangent of the loss angle: 200% or less of initial specified value |
| Shelf life (105℃) | Test time : 1000hours ; other items are same as the endurance. Voltage application treatment : According to JIS C5101-4 4.1 |
| Applicable standards | JIS C5101 - 1,- 18 (IEC 60384 - 1,- 18) |

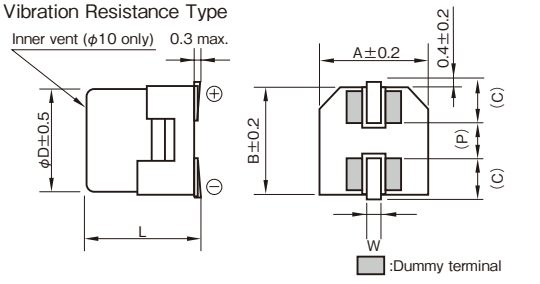
## Outline Drawing

Unit : mm

Standard Type




For Vibration Resistance Type




( ): Reference size

| ϕD | L | A | B | C | W | P | Size code |
|---|---|---|---|---|---|---|---|
| 6.3 | 5.8±0.3 | 6.6 | 6.6 | 2.7 | 0.5 to 0.8 | 2.0 | DC8 |
| 6.3 | 7.7±0.3 | 6.6 | 6.6 | 2.7 | 0.5 to 0.8 | 2.0 | DE7 |
| 8 | 10±0.5 | 8.4 | 8.4 | 3.0 | 0.7 to 1.1 | 3.1 | EH0 |
| 10 | 10±0.5 | 10.4 | 10.4 | 3.3 | 0.7 to 1.1 | 4.7 | FH0 |

Refer to individual page.
(Soldering conditions, Land pattern size, The taping specifications)

## Coefficient of Frequency for Rated Ripple Current

| Rated voltage (V) \ Frequency (Hz) | 50・60 | 120 | 1k | 10k・100k |
|---|---|---|---|---|
| 6.3 to 50 | 0.50 | 0.50 | 0.75 | 1 |

## Product code system (*For general product)

Standard Type (example : 16V100μF)

| RS* | VVV | 101 | M | 1E | DC8 | 002 | U |
|---|---|---|---|---|---|---|---|
| Category code | Series code | capacitance code | Cap tol. code | Voltage code | Size code | Taping and packing code | Additional code |

For Vibration Resistance Type (example : 25V470μF)

| RS* | VTV | 471 | M | 1T | FH0 | 002 | U |
|---|---|---|---|---|---|---|---|
| Category code | Series code | capacitance code | Cap tol. code | Voltage code | Size code | Taping and packing code | Additional code |

For details, refer to the various "Product Code System" pages.

NOTE : Design, Specifications are subject to change without notice.
It is recommended that you shall obtain technical specifications from ELNA to ensure that the component is suitable for your use.

# Vertical Chip Type Aluminum Electrolytic Capacitors VVV, VTV series

Code in front of series have been extracted from product code, which describes the segment of products, such as type and features.

## Standard Ratings

| Rated voltage (V) / Item / Rated capacitance (μF) | 6.3 (1J) | | | | 10 (1L) | | | | 16 (1E) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Case φD × L (mm) | Size code | ESR (Ω max.) | Rated ripple current (mArms) | Case φD × L (mm) | Size code | ESR (Ω max.) | Rated ripple current (mArms) | Case φD × L (mm) | Size code | ESR (Ω max.) | Rated ripple current (mArms) |
| 47 | — | — | — | — | — | — | — | — | 6.3 × 5.8 | DC8 | 0.26 | 300 |
| 100 | 6.3 × 5.8 | DC8 | 0.26 | 300 | — | — | — | — | 6.3 × 5.8 | DC8 | 0.26 | 300 |
| | | | | | | | | | 6.3 × 7.7 | DE7 | 0.16 | 600 |
| 220 | 6.3 × 5.8 | DC8 | 0.26 | 300 | 6.3 × 7.7 | DE7 | 0.16 | 600 | 6.3 × 7.7 | DE7 | 0.16 | 600 |
| 330 | 6.3 × 7.7 | DE7 | 0.16 | 600 | 8 × 10 | EH0 | 0.09 | 850 | 8 × 10 | EH0 | 0.09 | 850 |
| 470 | 8 × 10 | EH0 | 0.09 | 850 | 8 × 10 | EH0 | 0.09 | 850 | 8 × 10 | EH0 | 0.09 | 850 |
| 680 | — | — | — | — | 8 × 10 | EH0 | 0.09 | 850 | 10 × 10 | FH0 | 0.07 | 1190 |
| 1000 | 8 × 10 | EH0 | 0.09 | 850 | 10 × 10 | FH0 | 0.07 | 1190 | — | — | — | — |
| 1500 | 10 × 10 | FH0 | 0.07 | 1190 | — | — | — | — | — | — | — | — |

| Rated voltage (V) / Item / Rated capacitance (μF) | 25 (1T) | | | | 35 (1G) | | | | 50 (1U) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Case φD × L (mm) | Size code | ESR (Ω max.) | Rated ripple current (mArms) | Case φD × L (mm) | Size code | ESR (Ω max.) | Rated ripple current (mArms) | Case φD × L (mm) | Size code | ESR (Ω max.) | Rated ripple current (mArms) |
| 33 | 6.3 × 5.8 | DC8 | 0.26 | 300 | 6.3 × 5.8 | DC8 | 0.26 | 300 | — | — | — | — |
| 47 | 6.3 × 5.8 | DC8 | 0.26 | 300 | 6.3 × 5.8 | DC8 | 0.26 | 300 | — | — | — | — |
| 100 | 6.3 × 7.7 | DE7 | 0.16 | 600 | 6.3 × 7.7 | DE7 | 0.16 | 600 | 8 × 10 | EH0 | 0.18 | 670 |
| | | | | | 8 × 10 | EH0 | 0.09 | 850 | | | | |
| 220 | 8 × 10 | EH0 | 0.09 | 850 | 8 × 10 | EH0 | 0.09 | 850 | 10 × 10 | FH0 | 0.12 | 900 |
| 330 | 8 × 10 | EH0 | 0.09 | 850 | 10 × 10 | FH0 | 0.07 | 1190 | — | — | — | — |
| 470 | 10 × 10 | FH0 | 0.07 | 1190 | — | — | — | — | — | — | — | — |

(Note) Rated ripple current : 105℃ , 100kHz
ESR : 20℃ , 100kHz

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