

☆UPGRADE

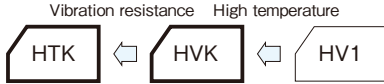
Code in front of series have been extracted from product code, which describes the segment of products, such as type and features.

- Low ESR and high ripple current are realized.
- HTK is resist to vibration. (30G guaranteed)
- Equivalent to conductive polymer type Aluminum Electrolytic Capacitor. (There are little characteristics change by temperature and frequency)
- Environmental : GREEN CAP™, RoHS compliance.

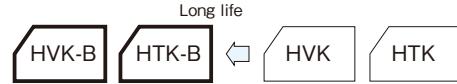


Marking color : Blue print

Guaranteed 4000h



Guaranteed 6000h



Specifications

| Item | Performance | | | | | | | | | | | | | | | | | | | | |
|---|--|---|------------|-------------------------------------|-----------------|-------------------------------------|-------------------------------------|----------------------------------|------------------------------|------------------------------|---------------------------|---|---|------------|---|---|------|------|------|------|------|
| Category temperature range (°C) | -55 to +125 | | | | | | | | | | | | | | | | | | | | |
| Tolerance at rated capacitance (%) | ±20 (20°C, 120Hz) | | | | | | | | | | | | | | | | | | | | |
| Leakage current (µA) (max.) | 6.3V to 80V : 0.01CV or 3 whichever is larger (after 2 minutes) 100V : 0.05CV or 15 whichever is larger (after 2 minutes), : Rated capacitance (µF) ; V : Rated voltage (V) (20°C) | | | | | | | | | | | | | | | | | | | | |
| Tangent of loss angle (tanδ) | <table border="1"> <thead> <tr> <th>Rated voltage (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>80</th> <th>100</th> </tr> </thead> <tbody> <tr> <td>tanδ (max.)</td> <td>0.20</td> <td>0.18</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.08</td> <td>0.08</td> <td>0.08</td> </tr> </tbody> </table> <p>(20°C, 120Hz)</p> | Rated voltage (V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 80 | 100 | tanδ (max.) | 0.20 | 0.18 | 0.16 | 0.14 | 0.12 | 0.10 | 0.08 | 0.08 | 0.08 |
| Rated voltage (V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 80 | 100 | | | | | | | | | | | | |
| tanδ (max.) | 0.20 | 0.18 | 0.16 | 0.14 | 0.12 | 0.10 | 0.08 | 0.08 | 0.08 | | | | | | | | | | | | |
| Characteristics at high and low temperature | <p>Impedance ratio (max.)</p> <table border="1"> <thead> <tr> <th>Z-25°C/Z+20°C</th> <th>1.5</th> </tr> </thead> <tbody> <tr> <th>Z-55°C/Z+20°C</th> <th>2.0</th> </tr> </tbody> </table> <p>(100kHz)</p> | Z-25°C/Z+20°C | 1.5 | Z-55°C/Z+20°C | 2.0 | | | | | | | | | | | | | | | | |
| Z-25°C/Z+20°C | 1.5 | | | | | | | | | | | | | | | | | | | | |
| Z-55°C/Z+20°C | 2.0 | | | | | | | | | | | | | | | | | | | | |
| Endurance (125°C) (Applied ripple current) | <table border="1"> <thead> <tr> <th>Test time</th> <th>4000 hours</th> <th>6000 hours (25V~63V : φ6.3 or more)</th> </tr> </thead> <tbody> <tr> <td>Leakage current</td> <td>The initial specified value or less</td> <td>The initial specified value or less</td> </tr> <tr> <td>Percentage of capacitance change</td> <td>Within ±30% of initial value</td> <td>Within ±30% of initial value</td> </tr> <tr> <td>Tangent of the loss angle</td> <td>200% or less of the initial specified value</td> <td>200% or less of the initial specified value</td> </tr> <tr> <td>ESR change</td> <td>200% or less of the initial specified value</td> <td>200% or less of the initial specified value</td> </tr> </tbody> </table> | Test time | 4000 hours | 6000 hours (25V~63V : φ6.3 or more) | Leakage current | The initial specified value or less | The initial specified value or less | Percentage of capacitance change | Within ±30% of initial value | Within ±30% of initial value | Tangent of the loss angle | 200% or less of the initial specified value | 200% or less of the initial specified value | ESR change | 200% or less of the initial specified value | 200% or less of the initial specified value | | | | | |
| Test time | 4000 hours | 6000 hours (25V~63V : φ6.3 or more) | | | | | | | | | | | | | | | | | | | |
| Leakage current | The initial specified value or less | The initial specified value or less | | | | | | | | | | | | | | | | | | | |
| Percentage of capacitance change | Within ±30% of initial value | Within ±30% of initial value | | | | | | | | | | | | | | | | | | | |
| Tangent of the loss angle | 200% or less of the initial specified value | 200% or less of the initial specified value | | | | | | | | | | | | | | | | | | | |
| ESR change | 200% or less of the initial specified value | 200% or less of the initial specified value | | | | | | | | | | | | | | | | | | | |
| Shelf life (125°C) | Test time : 1000hours ; other items are same as the endurance. Voltage application treatment : According to JIS C5101-4 4.1. | | | | | | | | | | | | | | | | | | | | |

Outline Drawing

Unit : mm

Standard type

For vibration resistance type

() : Reference size

| φD | L | A | B | C | W | P | M | Size code |
|------|----------|------|------|-----|------------|-----|---------|-----------|
| 5 | 5.8±0.3 | 5.3 | 5.3 | 2.3 | 0.5 to 0.8 | 1.5 | 0.4±0.2 | CC8 |
| 6.3 | 5.8±0.3 | 6.6 | 6.6 | 2.7 | 0.5 to 0.8 | 2.0 | 0.4±0.2 | DC8♦ |
| 6.3 | 7.7±0.3 | 6.6 | 6.6 | 2.7 | 0.5 to 0.8 | 2.0 | 0.4±0.2 | DE7♦ |
| 8 | 8.7±0.3 | 8.4 | 8.4 | 3.0 | 0.5 to 0.8 | 3.1 | 0.4±0.2 | EF7 |
| 8 | 10±0.5 | 8.4 | 8.4 | 3.0 | 0.7 to 1.1 | 3.1 | 0.4±0.2 | EH0♦ |
| 10 | 8.7±0.3 | 10.4 | 10.4 | 3.3 | 0.7 to 1.1 | 4.7 | 0.4±0.2 | FF7 |
| 10 | 10±0.5 | 10.4 | 10.4 | 3.3 | 0.7 to 1.1 | 4.7 | 0.4±0.2 | FH0♦ |
| 10 | 12.5±0.5 | 10.4 | 10.4 | 3.3 | 0.7 to 1.1 | 4.7 | 0.4±0.2 | FK5♦ |
| 12.5 | 13.5±0.5 | 13.0 | 13.0 | 4.9 | 1.0 to 1.4 | 4.6 | 0.7±0.3 | GL5♦ |

♦ mark size also deals with vibration resistant type.

Coefficient of Frequency for Rated Ripple Current

| Frequency (Hz) | 120 | 1k | 10k | 100k or more |
|------------------------------|------|------|------|--------------|
| Rated voltage (V) 6.3 to 100 | 0.10 | 0.30 | 0.60 | 1 |

Product code system (*For general product)

φ10x8.7L or less (example : 35V150µF, Standard type)

| RS* | HVK | 151 | M | 1G | EH0 | 002 | E |
|---------------|-------------|------------------|---------------|--------------|-----------|-------------------------|-----------------|
| Category code | Series code | capacitance code | Cap tol. code | Voltage code | Size code | Taping and packing code | Additional code |

φ10x10L, φ10x12.5L (example : 35V270µF, Standard type)

| RS* | HVK | 271 | M | 1G | FH0 | 002 | EX |
|---------------|-------------|------------------|---------------|--------------|-----------|-------------------------|-----------------|
| Category code | Series code | capacitance code | Cap tol. code | Voltage code | Size code | Taping and packing code | Additional code |

φ12.5 (example : 35V560µF, Standard type)

| RS* | HVK | 561 | M | 1G | GL5 | 005 | E |
|---------------|-------------|------------------|---------------|--------------|-----------|-------------------------|-----------------|
| Category code | Series code | capacitance code | Cap tol. code | Voltage code | Size code | Taping and packing code | Additional code |

• For vibration resistance type should change Series code "HVK" into "HTK".
• 6000 hours guaranteed product should change additional code "E" into "B".
• For details, refer to the various "Product Code System" pages.

Refer to individual page.

(Soldering conditions, Land pattern size, The taping specifications)

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.

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

Standard ratings (◆Marked: It supports vibration resistance type / ●Marked: It also supports 6000 hours guaranteed)

| Rated voltage (V) Rated capacitance (μF) | 6.3 (1J) | | | 10 (1L) | | | 16 (1E) | | | 25 (1T) | | | |
|---|-----------|------------------|------------------|----------------------------------|------------------|------------------|----------------------------------|------------------|------------------|----------------------------------|------------------|------------------|----------------------------------|
| | Item | Case φD×L(mm) | ESR (mΩ max.) | Rated ripple current (mA rms) | Case φD×L(mm) | ESR (mΩ max.) | Rated ripple current (mA rms) | Case φD×L(mm) | ESR (mΩ max.) | Rated ripple current (mA rms) | Case φD×L(mm) | ESR (mΩ max.) | Rated ripple current (mA rms) |
| 33 | — | — | — | — | — | — | — | — | — | — | 5×5.8 | 80 | 550 |
| 47 | — | — | — | — | — | — | — | 5×5.8 | 70 | 600 | — | — | — |
| 56 | — | — | — | — | — | — | — | — | — | — | ◆● 6.3×5.8 | 50 | 900 |
| 82 | — | — | — | — | — | — | — | ◆ 6.3×5.8 | 45 | 950 | — | — | — |
| 100 | — | — | — | ◆ 6.3×5.8 | 45 | 950 | — | — | — | — | ◆● 6.3×7.7 | 30 | 1400 |
| 150 | — | — | — | — | — | — | ◆ 6.3×7.7 | 27 | 1450 | — | ● 8×8.7 | 27 | 1500 |
| 220 | ◆ 6.3×5.8 | 45 | 950 | ◆ 6.3×7.7 | 24 | 1450 | — | — | — | ◆● 8×10 | 27 | 1600 | |
| 270 | — | — | — | — | — | — | ◆ 8×10 | 22 | 1700 | — | ● 10×8.7 | 25 | 1700 |
| 330 | ◆ 6.3×7.7 | 24 | 1450 | ◆ 8×10 | 22 | 1700 | — | — | — | ◆● 10×10 | 20 | 2000 | |
| 470 | — | — | — | ◆ 10×10 | 18 | 2100 | ◆ 10×10 | 18 | 2100 | — | — | — | — |
| 560 | ◆ 8×10 | 22 | 1700 | — | — | — | — | — | — | — | ◆● 10×12.5 | 18 | 3000 |
| 820 | ◆ 10×10 | 18 | 2100 | — | — | — | — | — | — | — | ◆● 12.5×13.5 | 15 | 4000 |

| Rated voltage (V) Rated capacitance (μF) | 35 (1G) | | | 50 (1U) | | | 63 (4E) | | | 80 (1R) | | | |
|---|--------------|------------------|------------------|----------------------------------|------------------|------------------|----------------------------------|------------------|------------------|----------------------------------|------------------|------------------|----------------------------------|
| | Item | Case φD×L(mm) | ESR (mΩ max.) | Rated ripple current (mA rms) | Case φD×L(mm) | ESR (mΩ max.) | Rated ripple current (mA rms) | Case φD×L(mm) | ESR (mΩ max.) | Rated ripple current (mA rms) | Case φD×L(mm) | ESR (mΩ max.) | Rated ripple current (mA rms) |
| 10 | — | — | — | — | 5×5.8 | 120 | 500 | ◆● 6.3×5.8 | 120 | 700 | — | — | — |
| 22 | — | 5×5.8 | 100 | 550 | ◆● 6.3×5.8 | 80 | 750 | ◆● 6.3×7.7 | 80 | 900 | ◆ 8×10 | 45 | 1100 |
| 27 | — | — | — | — | — | — | — | ● 8×8.7 | 50 | 1000 | — | — | — |
| 33 | — | — | — | — | ◆● 6.3×7.7 | 40 | 1100 | ◆● 8×10 | 40 | 1100 | ◆ 10×10 | 36 | 1200 |
| 47 | ◆● 6.3×5.8 | 60 | 900 | ● 8×8.7 | 35 | 1200 | ● 10×8.7 | 35 | 1200 | — | — | — | — |
| 56 | — | — | — | — | — | — | — | ◆● 10×10 | 30 | 1400 | — | — | — |
| 68 | ◆● 6.3×7.7 | 35 | 1400 | ◆● 8×10 | 30 | 1250 | — | — | — | — | — | — | — |
| 82 | — | — | — | ● 10×8.7 | 28 | 1400 | — | — | — | — | — | — | — |
| 100 | ● 8×8.7 | 30 | 1500 | ◆● 10×10 | 28 | 1600 | ◆● 10×12.5 | 26 | 2000 | — | — | — | — |
| 120 | — | — | — | — | — | — | ◆● 12.5×13.5 | 22 | 3000 | — | — | — | — |
| 150 | ◆● 8×10 | 27 | 1600 | ◆● 10×12.5 | 24 | 2500 | — | — | — | — | — | — | — |
| 220 | ● 10×8.7 | 25 | 1700 | — | — | — | — | — | — | — | — | — | — |
| 270 | ◆● 10×10 | 20 | 2000 | — | — | — | — | — | — | — | — | — | — |
| 330 | — | — | — | ◆● 12.5×13.5 | 20 | 3500 | — | — | — | — | — | — | — |
| 390 | ◆● 10×12.5 | 18 | 3000 | — | — | — | — | — | — | — | — | — | — |
| 560 | ◆● 12.5×13.5 | 15 | 4000 | — | — | — | — | — | — | — | — | — | — |

| Rated voltage (V) Rated capacitance (μF) | 100 (1H) | | | |
|---|----------|------------------|------------------|----------------------------------|
| | Item | Case φD×L(mm) | ESR (mΩ max.) | Rated ripple current (mA rms) |
| 15 | ◆ | 10×10 | 45 | 1000 |

(Note) Rated ripple current : 125°C , 100kHz ; ESR : 20°C , 100kHz