



# NPA SERIES

## Non-Polarized Axial 105°C 2000HR

## 無極性臥式品 105°C

### Features

- NP Series for crossover networks of high-pitched, mean and low-pitched sounds in high-fidelity sound systems, have excellent frequency characteristics and small deviation of capacitance.

### Specifications

| Items   | Performance Characteristics  |      |      |      |      |      |      |      |                     |                     |     |     |             |                    |      |      |      |             |                    |      |      |      |      |      |      |      |             |             |   |   |   |   |   |   |   |   |                     |     |     |     |             |   |   |   |
|---|--|------|------|------|------|------|------|------|---------------------|---------------------|-----|-----|-------------|--------------------|------|------|------|-------------|--------------------|------|------|------|------|------|------|------|-------------|-------------|---|---|---|---|---|---|---|---|---------------------|-----|-----|-----|-------------|---|---|---|
| Operating Temperature Range   | -40 to +105°C  |      |      |      |      |      |      |      |                     |                     |     |     |             |                    |      |      |      |             |                    |      |      |      |      |      |      |      |             |             |   |   |   |   |   |   |   |   |                     |     |     |     |             |   |   |   |
| Rated Working Voltage Range   | 6.3 to 250V DC   |      |      |      |      |      |      |      |                     |                     |     |     |             |                    |      |      |      |             |                    |      |      |      |      |      |      |      |             |             |   |   |   |   |   |   |   |   |                     |     |     |     |             |   |   |   |
| Nominal Capacitance Range   | 0.47 to 2200 $\mu$ F   |      |      |      |      |      |      |      |                     |                     |     |     |             |                    |      |      |      |             |                    |      |      |      |      |      |      |      |             |             |   |   |   |   |   |   |   |   |                     |     |     |     |             |   |   |   |
| Capacitance Tolerance   | $\pm 20^\circ$ C (120Hz, +20°C)  |      |      |      |      |      |      |      |                     |                     |     |     |             |                    |      |      |      |             |                    |      |      |      |      |      |      |      |             |             |   |   |   |   |   |   |   |   |                     |     |     |     |             |   |   |   |
| Leakage Current   | 1 $\leq$ 0.03CV or 0.3( $\mu$ A) after 5 minutes application of rated working voltage at +20°C   |      |      |      |      |      |      |      |                     |                     |     |     |             |                    |      |      |      |             |                    |      |      |      |      |      |      |      |             |             |   |   |   |   |   |   |   |   |                     |     |     |     |             |   |   |   |
| Dissipation Factor (tan $\delta$ )<br><br>(120Hz, +20°C)  | <table border="1"> <tr> <td>Working voltage (v)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>100</td> </tr> <tr> <td>tan <math>\delta</math> (max)</td> <td>0.25</td> <td>0.25</td> <td>0.20</td> <td>0.15</td> <td>0.15</td> <td>0.13</td> <td>0.10</td> <td>0.12</td> </tr> </table>  |      |      |      |      |      |      |      |                     | Working voltage (v) | 6.3 | 10  | 16          | 25                 | 35   | 50   | 63   | 100         | tan $\delta$ (max) | 0.25 | 0.25 | 0.20 | 0.15 | 0.15 | 0.13 | 0.10 | 0.12        |             |   |   |   |   |   |   |   |   |                     |     |     |     |             |   |   |   |
|   | Working voltage (v)  | 6.3  | 10   | 16   | 25   | 35   | 50   | 63   | 100                 |                     |     |     |             |                    |      |      |      |             |                    |      |      |      |      |      |      |      |             |             |   |   |   |   |   |   |   |   |                     |     |     |     |             |   |   |   |
|   | tan $\delta$ (max)   | 0.25 | 0.25 | 0.20 | 0.15 | 0.15 | 0.13 | 0.10 | 0.12                |                     |     |     |             |                    |      |      |      |             |                    |      |      |      |      |      |      |      |             |             |   |   |   |   |   |   |   |   |                     |     |     |     |             |   |   |   |
|   | <table border="1"> <tr> <td>Working voltage (v)</td> <td>160</td> <td>200</td> <td>250</td> </tr> <tr> <td>tan <math>\delta</math> (max)</td> <td>0.15</td> <td>0.15</td> <td>0.20</td> </tr> </table>   |      |      |      |      |      |      |      |                     | Working voltage (v) | 160 | 200 | 250         | tan $\delta$ (max) | 0.15 | 0.15 | 0.20 |             |                    |      |      |      |      |      |      |      |             |             |   |   |   |   |   |   |   |   |                     |     |     |     |             |   |   |   |
| Working voltage (v)   | 160  | 200  | 250  |      |      |      |      |      |                     |                     |     |     |             |                    |      |      |      |             |                    |      |      |      |      |      |      |      |             |             |   |   |   |   |   |   |   |   |                     |     |     |     |             |   |   |   |
| tan $\delta$ (max)  | 0.15   | 0.15 | 0.20 |      |      |      |      |      |                     |                     |     |     |             |                    |      |      |      |             |                    |      |      |      |      |      |      |      |             |             |   |   |   |   |   |   |   |   |                     |     |     |     |             |   |   |   |
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| Working voltage (v)   | 6.3  | 10   | 16   | 25   | 35   | 50   | 63   | 100  |                     |                     |     |     |             |                    |      |      |      |             |                    |      |      |      |      |      |      |      |             |             |   |   |   |   |   |   |   |   |                     |     |     |     |             |   |   |   |
| -25°C/+20°C   | 4  | 3    | 2    | 2    | 2    | 2    | 2    | 2    |                     |                     |     |     |             |                    |      |      |      |             |                    |      |      |      |      |      |      |      |             |             |   |   |   |   |   |   |   |   |                     |     |     |     |             |   |   |   |
| -40°C/+20°C   | 8  | 6    | 4    | 4    | 3    | 3    | 3    | 3    |                     |                     |     |     |             |                    |      |      |      |             |                    |      |      |      |      |      |      |      |             |             |   |   |   |   |   |   |   |   |                     |     |     |     |             |   |   |   |
| <table border="1"> <tr> <td>Working voltage (v)</td> <td>160</td> <td>200</td> <td>250</td> </tr> <tr> <td>-25°C/+20°C</td> <td>2</td> <td>2</td> <td>3</td> </tr> </table>   |  |      |      |      |      |      |      |      | Working voltage (v) | 160                 | 200 | 250 | -25°C/+20°C | 2                  | 2    | 3    |      |             |                    |      |      |      |      |      |      |      |             |             |   |   |   |   |   |   |   |   |                     |     |     |     |             |   |   |   |
| Working voltage (v)   | 160  | 200  | 250  |      |      |      |      |      |                     |                     |     |     |             |                    |      |      |      |             |                    |      |      |      |      |      |      |      |             |             |   |   |   |   |   |   |   |   |                     |     |     |     |             |   |   |   |
| -25°C/+20°C   | 2  | 2    | 3    |      |      |      |      |      |                     |                     |     |     |             |                    |      |      |      |             |                    |      |      |      |      |      |      |      |             |             |   |   |   |   |   |   |   |   |                     |     |     |     |             |   |   |   |
| Characteristics at Low Temperature  | Impedance ratio max. at 120 Hz <table border="1"> <tr> <td>Working voltage (v)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>100</td> </tr> <tr> <td>-25°C/+20°C</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>-40°C/+20°C</td> <td>8</td> <td>6</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </table> <table border="1"> <tr> <td>Working voltage (v)</td> <td>160</td> <td>200</td> <td>250</td> </tr> <tr> <td>-25°C/+20°C</td> <td>2</td> <td>2</td> <td>3</td> </tr> </table> |      |      |      |      |      |      |      |                     | Working voltage (v) | 6.3 | 10  | 16          | 25                 | 35   | 50   | 63   | 100         | -25°C/+20°C        | 4    | 3    | 2    | 2    | 2    | 2    | 2    | 2           | -40°C/+20°C | 8 | 6 | 4 | 4 | 3 | 3 | 3 | 3 | Working voltage (v) | 160 | 200 | 250 | -25°C/+20°C | 2 | 2 | 3 |
| Working voltage (v)   | 6.3  | 10   | 16   | 25   | 35   | 50   | 63   | 100  |                     |                     |     |     |             |                    |      |      |      |             |                    |      |      |      |      |      |      |      |             |             |   |   |   |   |   |   |   |   |                     |     |     |     |             |   |   |   |
| -25°C/+20°C   | 4  | 3    | 2    | 2    | 2    | 2    | 2    | 2    |                     |                     |     |     |             |                    |      |      |      |             |                    |      |      |      |      |      |      |      |             |             |   |   |   |   |   |   |   |   |                     |     |     |     |             |   |   |   |
| -40°C/+20°C   | 8  | 6    | 4    | 4    | 3    | 3    | 3    | 3    |                     |                     |     |     |             |                    |      |      |      |             |                    |      |      |      |      |      |      |      |             |             |   |   |   |   |   |   |   |   |                     |     |     |     |             |   |   |   |
| Working voltage (v)   | 160  | 200  | 250  |      |      |      |      |      |                     |                     |     |     |             |                    |      |      |      |             |                    |      |      |      |      |      |      |      |             |             |   |   |   |   |   |   |   |   |                     |     |     |     |             |   |   |   |
| -25°C/+20°C   | 2  | 2    | 3    |      |      |      |      |      |                     |                     |     |     |             |                    |      |      |      |             |                    |      |      |      |      |      |      |      |             |             |   |   |   |   |   |   |   |   |                     |     |     |     |             |   |   |   |
| High Temperature Loading  | Test conditions<br>Duration : 2000 hours<br>Ambient temperature : +105°C<br>Applied Voltage : Rated DC working voltage to each polarity for 1000 hours<br><br>Post test requirements at +20°C<br>Leakage current : $\leq$ initial specified value<br>Capacitance change : $\leq$ +20% of initial measured value<br>tan $\delta$ : $\leq$ 150% of initial specified value   |      |      |      |      |      |      |      |                     |                     |     |     |             |                    |      |      |      |             |                    |      |      |      |      |      |      |      |             |             |   |   |   |   |   |   |   |   |                     |     |     |     |             |   |   |   |
| Shelf Life  | Test conditions<br>Duration : 1000 hours<br>Ambient temperature : +105°C<br>Applied voltage : (None)<br><br>Post test requirements at +20°C<br>Same limits for high temperature loading.   |      |      |      |      |      |      |      |                     |                     |     |     |             |                    |      |      |      |             |                    |      |      |      |      |      |      |      |             |             |   |   |   |   |   |   |   |   |                     |     |     |     |             |   |   |   |

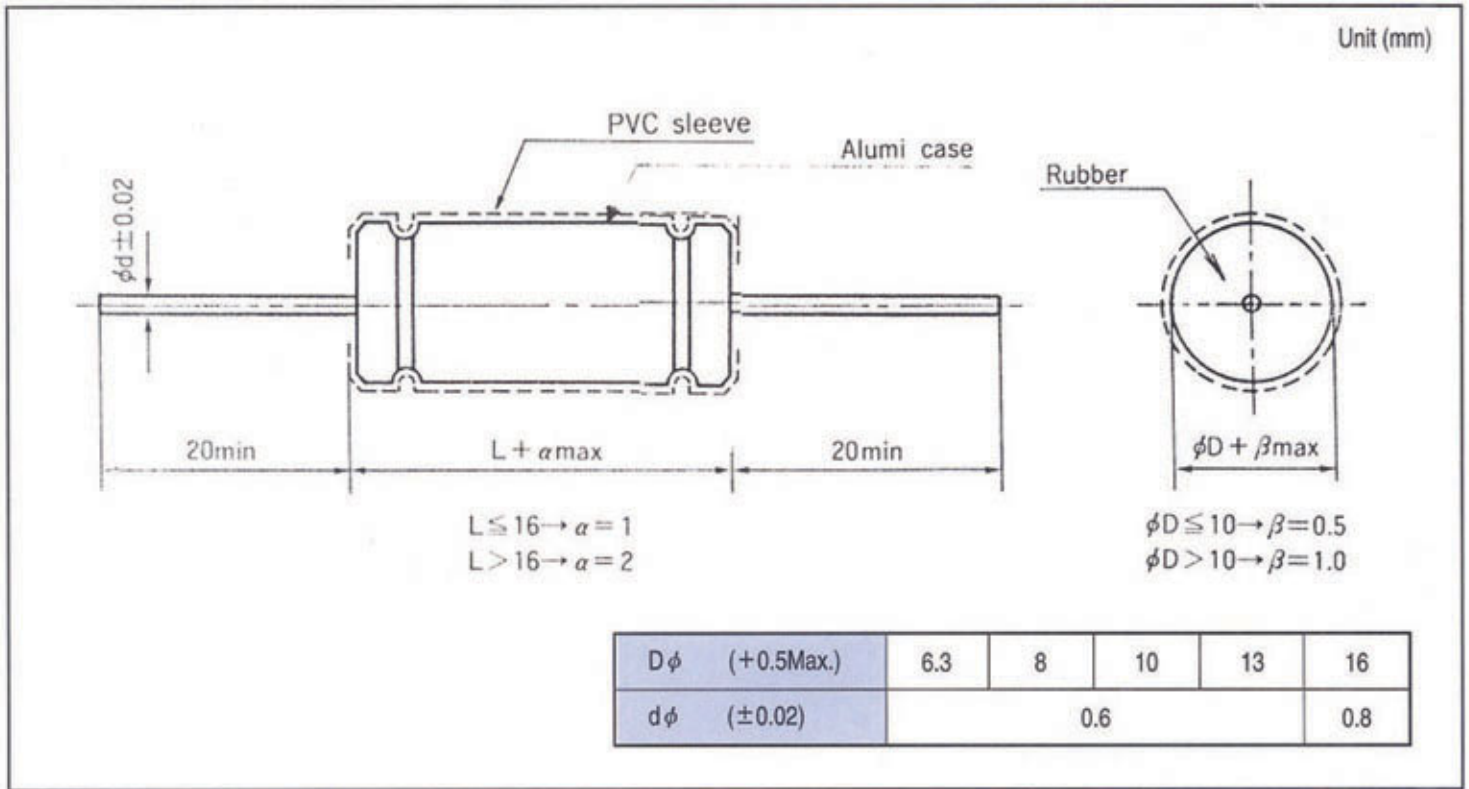


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Non-Polarized Axial 105°C 2000HR

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## Diagram of Dimensions



## Case Size Table

|         |           | $\phi D \times L$ (mm) |            |            |            |            |            |            |              |
|---------|-----------|------------------------|------------|------------|------------|------------|------------|------------|--------------|
| $\mu F$ | W.V. (SV) | 6.3<br>(8)             | 10<br>(13) | 16<br>(20) | 25<br>(32) | 35<br>(44) | 50<br>(63) | 63<br>(79) | 100<br>(125) |
| 0.47    |           |                        |            |            |            | →          | 6.3×16     | →          | 6.3×16       |
| 1.0     |           |                        |            |            |            | →          | 6.3×16     | →          | 6.3×16       |
| 2.2     |           |                        |            |            |            | →          | 6.3×16     | →          | 6.3×16       |
| 3.3     |           |                        |            |            |            | →          | 6.3×16     | 6.3×16     | 8×16         |
| 4.7     |           |                        |            | →          | 6.3×16     | 5×11       | 6.3×16     | 6.3×16     | 8×16         |
| 10      |           |                        | →          | 6.3×16     | 6.3×16     | 6.3×11     | 8×16       | 8×16       | 10×26        |
| 22      |           | →                      | 6.3×16     | 6.3×16     | 6.3×11     | 8×11       | 10×21      | 10×21      | 13×27        |
| 33      |           | 6.3×16                 | 6.3×16     | 8×16       | 8×16       | 10×13      | 10×26      | 10×26      | 13×32        |
| 47      |           | 6.3×16                 | 6.3×16     | 8×16       | 8×16       | 10×16      | 13×27      | 13×27      |              |
| 100     |           | 8×16                   | 8×16       | 10×21      | 10×21      | 13×21      |            |            |              |
| 220     |           | 10×21                  | 10×21      | 10×26      | 10×26      | 13×26      |            |            |              |
| 330     |           | 10×21                  | 10×26      | 13×27      | 13×27      | 16×26      |            |            |              |
| 470     |           | 10×26                  | 10×26      | 13×32      |            | 16×32      |            |            |              |
| 1,000   |           | 13×32                  |            |            |            |            |            |            |              |

※ All blank dimensions is the same dimensions as "→" point to.