

# jb® Aluminum Electrolytic Capacitor – JNJ



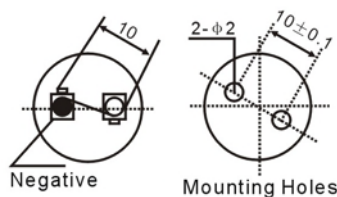
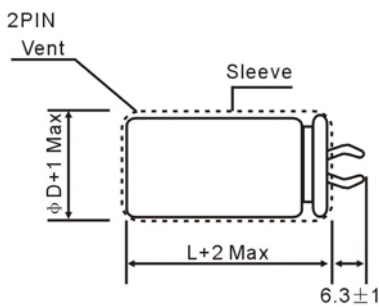
## ■ FEATURES

- Load life of 3000 hours at 105°C, equal to 96000 hours (11 years) at 55°C
- High ripple current
- Smaller size
- PCB Mounting

## ■ SPECIFICATIONS

| Items                               | Performance Characteristics  |                                    |           |                 |                                    |                    |                                 |                    |  |           |               |      |      |      |      |      |      |      |       |               |    |    |   |   |   |   |    |
|-------------------------------------|--|------------------------------------|-----------|-----------------|------------------------------------|--------------------|---------------------------------|--------------------|--|-----------|---------------|------|------|------|------|------|------|------|-------|---------------|----|----|---|---|---|---|----|
| Operating Temperature Range (°C)    | -40°C~+105°C (250V~400V:-25°C~+105°C)  |                                    |           |                 |                                    |                    |                                 |                    |  |           |               |      |      |      |      |      |      |      |       |               |    |    |   |   |   |   |    |
| Capacitance Tolerance (25°C, 120Hz) | ±20%   |                                    |           |                 |                                    |                    |                                 |                    |  |           |               |      |      |      |      |      |      |      |       |               |    |    |   |   |   |   |    |
| Leakage Current (µA)                | 0.01CV or 1.5mA whichever is smaller. (25°C, after 5 minutes)<br>C: Nominal Capacitance (µF) V: Rated Voltage (V)  |                                    |           |                 |                                    |                    |                                 |                    |  |           |               |      |      |      |      |      |      |      |       |               |    |    |   |   |   |   |    |
| Dissipation Factor (25°C, 120Hz)    | <table border="1"> <thead> <tr> <th>Rated Voltage (V)</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63~100</th> <th>160~200</th> <th>250~400</th> </tr> </thead> <tbody> <tr> <td>Tan δ</td> <td>0.45</td> <td>0.35</td> <td>0.30</td> <td>0.25</td> <td>0.20</td> <td>0.15</td> <td>0.12</td> <td>0.15</td> </tr> </tbody> </table>  | Rated Voltage (V)                  | 10        | 16              | 25                                 | 35                 | 50                              | 63~100             | 160~200                                    | 250~400   | Tan δ         | 0.45 | 0.35 | 0.30 | 0.25 | 0.20 | 0.15 | 0.12 | 0.15  |               |    |    |   |   |   |   |    |
|                                     | Rated Voltage (V)  | 10                                 | 16        | 25              | 35                                 | 50                 | 63~100                          | 160~200            | 250~400                                    |           |               |      |      |      |      |      |      |      |       |               |    |    |   |   |   |   |    |
| Tan δ                               | 0.45   | 0.35                               | 0.30      | 0.25            | 0.20                               | 0.15               | 0.12                            | 0.15               |  |           |               |      |      |      |      |      |      |      |       |               |    |    |   |   |   |   |    |
| Temperature Stability (120Hz)       | <table border="1"> <thead> <tr> <th>Rated Voltage (V)</th> <th>10,16</th> <th>25</th> <th>35</th> <th>50,63</th> <th>80,100</th> <th>160~200</th> <th>250~400</th> </tr> </thead> <tbody> <tr> <td>Impedance</td> <td>Z-25°C/Z+20°C</td> <td>4</td> <td>3</td> <td>3</td> <td>2</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>Ratio</td> <td>Z-40°C/Z+20°C</td> <td>15</td> <td>10</td> <td>8</td> <td>6</td> <td>5</td> <td>6</td> <td>--</td> </tr> </tbody> </table> | Rated Voltage (V)                  | 10,16     | 25              | 35                                 | 50,63              | 80,100                          | 160~200            | 250~400                                    | Impedance | Z-25°C/Z+20°C | 4    | 3    | 3    | 2    | 2    | 3    | 4    | Ratio | Z-40°C/Z+20°C | 15 | 10 | 8 | 6 | 5 | 6 | -- |
|                                     | Rated Voltage (V)  | 10,16                              | 25        | 35              | 50,63                              | 80,100             | 160~200                         | 250~400            |  |           |               |      |      |      |      |      |      |      |       |               |    |    |   |   |   |   |    |
|                                     | Impedance  | Z-25°C/Z+20°C                      | 4         | 3               | 3                                  | 2                  | 2                               | 3                  | 4  |           |               |      |      |      |      |      |      |      |       |               |    |    |   |   |   |   |    |
| Ratio                               | Z-40°C/Z+20°C  | 15                                 | 10        | 8               | 6                                  | 5                  | 6                               | --                 |  |           |               |      |      |      |      |      |      |      |       |               |    |    |   |   |   |   |    |
| Load Life (+105°C)                  | <table border="1"> <tbody> <tr> <td>Time</td> <td>3000hours</td> </tr> <tr> <td>Leakage Current</td> <td>Not more than the specified value.</td> </tr> <tr> <td>Capacitance Change</td> <td>Within±20% of the initial value</td> </tr> <tr> <td>Dissipation Factor</td> <td>Not more than 200% of the specified value.</td> </tr> </tbody> </table>  | Time                               | 3000hours | Leakage Current | Not more than the specified value. | Capacitance Change | Within±20% of the initial value | Dissipation Factor | Not more than 200% of the specified value. |           |               |      |      |      |      |      |      |      |       |               |    |    |   |   |   |   |    |
|                                     | Time   | 3000hours                          |           |                 |                                    |                    |                                 |                    |  |           |               |      |      |      |      |      |      |      |       |               |    |    |   |   |   |   |    |
|                                     | Leakage Current  | Not more than the specified value. |           |                 |                                    |                    |                                 |                    |  |           |               |      |      |      |      |      |      |      |       |               |    |    |   |   |   |   |    |
|                                     | Capacitance Change   | Within±20% of the initial value    |           |                 |                                    |                    |                                 |                    |  |           |               |      |      |      |      |      |      |      |       |               |    |    |   |   |   |   |    |
| Dissipation Factor                  | Not more than 200% of the specified value.   |                                    |           |                 |                                    |                    |                                 |                    |  |           |               |      |      |      |      |      |      |      |       |               |    |    |   |   |   |   |    |
| Shelf Life (+105°C)                 | *After storage for 500hours at 105°C with no voltage applied, the capacitor shall meet the specified limits for "Load Life". After test: U <sub>R</sub> to be applied for 60 minutes, 24 to 48 hours before measurement.   |                                    |           |                 |                                    |                    |                                 |                    |  |           |               |      |      |      |      |      |      |      |       |               |    |    |   |   |   |   |    |

## ■ DIMENSIONS (mm)



## ■ MULTIPLIER FOR RIPPLE CURRENT

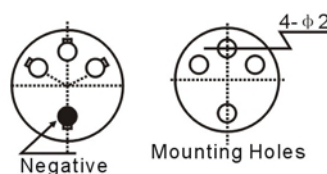
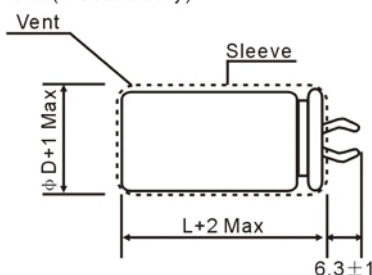
### Frequency coefficient

| Frequency(Hz)    | 50   | 120 | 1K   | 10K  | 20K  |
|------------------|------|-----|------|------|------|
| Rated Voltage(V) |      |     |      |      |      |
| ≤50              | 0.95 | 1   | 1.10 | 1.15 | 1.15 |
| 63~100           | 0.95 | 1   | 1.16 | 1.30 | 1.33 |
| ≥160             | 0.90 | 1   | 1.20 | 1.50 | 1.55 |

### Temperature coefficient

| Temperature(°C) | +40 | +55 | +70 | +85 | +105 |
|-----------------|-----|-----|-----|-----|------|
| Factor          | 2.7 | 2.5 | 2.1 | 1.7 | 1.0  |

## 4PIN(φ35mm only)



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## ■ STANDARD RATINGS

| WV(V)<br>/<br>□DxL<br>(mm) | 10    |        | 16    |        | 25    |        | 35    |        | 50    |        | 63   |        | 80   |        | 100  |        |
|----------------------------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|------|--------|------|--------|------|--------|
|                            | Cap   | Ripple | Cap   | Ripple | Cap   | Ripple | Cap   | Ripple | Cap   | Ripple | Cap  | Ripple | Cap  | Ripple | Cap  | Ripple |
|                            | uF    | mArms  | uF    | mArms  | uF    | mArms  | uF    | mArms  | uF    | mArms  | uF   | mArms  | uF   | mArms  | uF   | mArms  |
| 22x25                      | 6800  | 1.5    | 4700  | 1.4    | 3300  | 1.3    | 2200  | 1.1    | 1200  | 0.96   | 820  | 0.92   | 560  | 0.76   | 390  | 0.64   |
| 22x30                      | 10000 | 1.9    | 6800  | 1.8    | 4700  | 1.6    | 2700  | 1.3    | 1800  | 1.2    | 1200 | 1.2    | 820  | 0.96   | 560  | 0.80   |
| 22x35                      | 12000 | 2.1    | 8200  | 2.0    | 5600  | 1.8    | 3900  | 1.6    | 2200  | 1.4    | 1500 | 1.3    | 1000 | 1.1    | 680  | 0.92   |
| 22x40                      | 15000 | 2.5    | 10000 | 2.3    | 6800  | 2.0    | 4700  | 1.9    | 2700  | 1.6    | 1800 | 1.5    | 1200 | 1.2    | 820  | 1.0    |
| 22x50                      | 18000 | 2.8    | 15000 | 2.9    | 10000 | 2.6    | 6800  | 2.4    | --    | --     | 2200 | 1.7    | 1800 | 1.6    | 1200 | 1.3    |
| 25x25                      | 8200  | 1.7    | 6800  | 1.8    | 4700  | 1.6    | 3300  | 1.3    | 1800  | 1.2    | 1200 | 1.1    | 820  | 0.96   | 560  | 0.80   |
| 25x30                      | 12000 | 2.1    | 10000 | 2.2    | 5600  | 1.8    | 3900  | 1.6    | 2700  | 1.5    | 1500 | 1.3    | 1000 | 1.1    | 680  | 0.92   |
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| 25x40                      | 18000 | 2.8    | 15000 | 2.9    | 10000 | 2.6    | 6800  | 2.3    | --    | --     | --   | --     | 1800 | 1.6    | --   | --     |
| 25x50                      | --    | --     | 18000 | 3.3    | 12000 | 2.9    | 8200  | 2.7    | 5600  | 2.5    | 3300 | 2.2    | 2200 | 1.8    | 1500 | 1.5    |
| 30x25                      | 12000 | 2.2    | 10000 | 2.3    | 6800  | 2.0    | 4700  | 1.9    | 2700  | 1.6    | 1500 | 1.4    | 1200 | 1.3    | 820  | 1.0    |
| 30x30                      | 18000 | 2.8    | 12000 | 2.6    | 8200  | 2.3    | 5600  | 2.1    | 3300  | 1.8    | 2200 | 1.7    | 1500 | 1.5    | 1000 | 1.2    |
| 30x35                      | 22000 | 3.2    | 18000 | 3.3    | 12000 | 2.9    | 8200  | 2.9    | 4700  | 2.3    | 2700 | 2.0    | 1800 | 1.6    | 1200 | 1.4    |
| 30x40                      | --    | --     | 22000 | 3.7    | 15000 | 3.3    | 10000 | 3.0    | 5600  | 2.5    | 3300 | 2.3    | 2200 | 1.9    | 1500 | 1.6    |
| 30x50                      | --    | --     | --    | --     | 18000 | 3.8    | 12000 | 3.4    | 6800  | 2.9    | 4700 | 2.8    | 3300 | 2.3    | 2200 | 2.0    |
| 35x25                      | 15000 | 2.6    | 12000 | 2.7    | 8200  | 2.4    | 5600  | 2.2    | 3300  | 1.8    | 2200 | 1.8    | 1500 | 1.5    | 1000 | 1.3    |
| 35x30                      | 22000 | 3.3    | 18000 | 3.4    | 12000 | 3.0    | 8200  | 2.8    | 4700  | 2.4    | 2700 | 2.1    | 2200 | 1.9    | 1200 | 1.4    |
| 35x35                      | --    | --     | 22000 | 3.9    | 15000 | 3.5    | 10000 | 3.1    | 5600  | 2.7    | --   | --     | 2700 | 2.2    | 1800 | 1.8    |
| 35x40                      | --    | --     | --    | --     | 18000 | 3.9    | 12000 | 3.5    | 6800  | 3.0    | 4700 | 2.9    | 3300 | 2.4    | 2200 | 2.0    |
| 35x50                      | --    | --     | --    | --     | --    | --     | 18000 | 4.5    | 10000 | 3.8    | 6800 | 3.6    | 4700 | 3.2    | 2700 | 2.3    |

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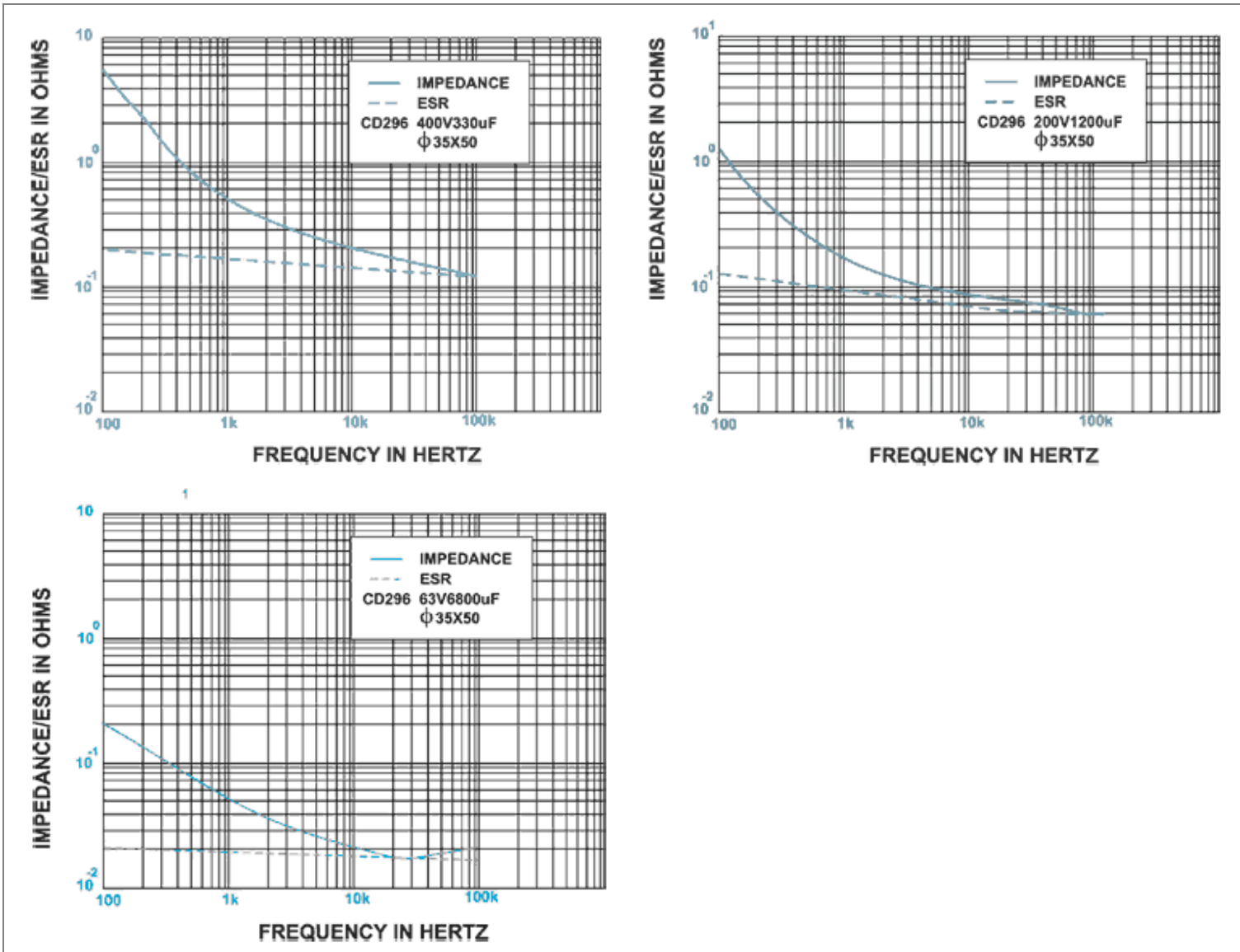
## ■ STANDARD RATINGS

| WV(V)<br>/<br>□DxL<br>(mm) | 160  |        | 180  |        | 200  |        | 250 |        | 315 |        | 350 |        | 400 |        |
|----------------------------|------|--------|------|--------|------|--------|-----|--------|-----|--------|-----|--------|-----|--------|
|                            | Cap  | Ripple | Cap  | Ripple | Cap  | Ripple | Cap | Ripple | Cap | Ripple | Cap | Ripple | Cap | Ripple |
|                            | uF   | mArms  | uF   | mArms  | uF   | mArms  | uF  | mArms  | uF  | mArms  | uF  | mArms  | uF  | mArms  |
| 22x25                      | 180  | 0.65   | 180  | 0.65   | 150  | 0.60   | 100 | 0.45   | 56  | 0.34   | 56  | 0.37   | 39  | 0.32   |
| 22x30                      | 270  | 0.83   | 220  | 0.75   | 220  | 0.76   | 150 | 0.58   | 82  | 0.43   | 82  | 0.47   | 56  | 0.39   |
| 22x35                      | 330  | 0.94   | 270  | 0.86   | 270  | 0.87   | 180 | 0.65   | 120 | 0.53   | 100 | 0.53   | 68  | 0.45   |
| 22x40                      | 390  | 1.1    | 390  | 1.1    | 330  | 0.99   | 220 | 0.75   | 150 | 0.61   | 120 | 0.60   | 82  | 0.51   |
| 22x50                      | 560  | 1.3    | 470  | 1.5    | 470  | 1.2    | 330 | 0.96   | 180 | 0.71   | 180 | 0.78   | 120 | 0.64   |
| 25x25                      | 270  | 0.82   | 220  | 0.75   | 220  | 0.76   | 150 | 0.58   | 82  | 0.42   | 68  | 0.43   | 56  | 0.40   |
| 25x30                      | 390  | 1.0    | 330  | 0.96   | 270  | 0.87   | 220 | 0.73   | 120 | 0.53   | 100 | 0.54   | 68  | 0.46   |
| 25x35                      | 470  | 1.2    | 390  | 1.1    | 390  | 1.1    | 270 | 0.83   | 150 | 0.62   | 120 | 0.61   | 100 | 0.57   |
| 25x40                      | 560  | 1.3    | 470  | 1.2    | 470  | 1.3    | 330 | 0.95   | --  | --     | 180 | 0.77   | 120 | 0.63   |
| 25x50                      | 820  | 1.7    | 680  | 1.5    | 560  | 1.4    | 470 | 1.2    | 270 | 0.89   | 220 | 0.89   | 150 | 0.75   |
| 30x25                      | 390  | 1.1    | 330  | 1.0    | 270  | 0.92   | 220 | 0.77   | 120 | 0.56   | 100 | 0.57   | 82  | 0.53   |
| 30x30                      | 560  | 1.3    | 470  | 1.2    | 390  | 1.1    | 270 | 0.88   | 180 | 0.71   | 150 | 0.72   | 100 | 0.61   |
| 30x35                      | 680  | 1.5    | 560  | 1.4    | 560  | 1.4    | 390 | 1.1    | 220 | 0.80   | 180 | 0.82   | 150 | 0.77   |
| 30x40                      | 820  | 1.7    | 680  | 1.6    | 680  | 1.6    | 470 | 1.2    | 270 | 0.92   | 220 | 0.93   | 180 | 0.87   |
| 30x50                      | 1000 | 2.0    | 1000 | 2.0    | 820  | 1.8    | 560 | 1.4    | 390 | 1.2    | 330 | 1.2    | 220 | 1.0    |
| 35x25                      | 470  | 1.3    | 390  | 1.2    | 390  | 1.2    | 270 | 0.93   | 180 | 0.74   | 150 | 0.77   | 100 | 0.65   |
| 35x30                      | 680  | 1.6    | 560  | 1.5    | 560  | 1.5    | 390 | 1.2    | 220 | 0.84   | 220 | 0.97   | 150 | 0.83   |
| 35x35                      | 820  | 1.8    | 820  | 1.8    | 680  | 1.7    | 470 | 1.3    | 330 | 1.1    | 270 | 1.1    | 180 | 0.93   |
| 35x40                      | 1000 | 2.0    | 1000 | 2.1    | 820  | 1.9    | 560 | 1.5    | 390 | 1.2    | 330 | 1.3    | 220 | 1.1    |
| 35x50                      | 1500 | 2.6    | 1200 | 2.4    | 1200 | 2.4    | 820 | 1.9    | 470 | 1.4    | 470 | 1.6    | 330 | 1.3    |

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## ◆ TYPICAL CURVES



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