

RXB Series

Features

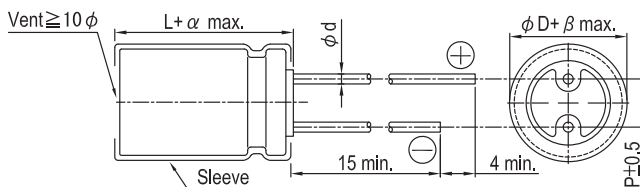
- 105°C, 5,000 hours assured
- Suitable for switching power supplies, UPS, Ballast
- Smaller size with large permissible ripple current
- RoHS compliance



Specifications

| Items | Performance | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|------------------------------|---------------|-----------------|--------------------|------------------------------|------------------------------|-----------------------------------|-----------------|------------------------|-----------------|---------------------|------|------|------|------|-------|------|---------------------|------|------|---|---|---|---|
| | 160 ~ 400V -40°C ~ +105°C | 450V -25°C ~ +105°C | | | | | | | | | | | | | | | | | | | | | | | |
| Category Temperature Range | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Tolerance | ±20% (at 120 Hz, 20°C) | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage Current (at 20°C) | <table border="1"> <thead> <tr> <th>Time</th> <th colspan="2">after 5 minutes</th> </tr> </thead> <tbody> <tr> <td>Leakage Current</td> <td>CV ≤ 1,000 I = 0.03CV(μA)</td> <td>CV > 1,000 I = 0.02CV(μA)</td> </tr> </tbody> </table> <p>Where, C = rated capacitance in μF, V = rated DC working voltage in V</p> | | Time | after 5 minutes | | Leakage Current | CV ≤ 1,000 I = 0.03CV(μA) | CV > 1,000 I = 0.02CV(μA) | | | | | | | | | | | | | | | | | |
| Time | after 5 minutes | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage Current | CV ≤ 1,000 I = 0.03CV(μA) | CV > 1,000 I = 0.02CV(μA) | | | | | | | | | | | | | | | | | | | | | | | |
| Tanδ (at 120 Hz, 20°C) | <table border="1"> <thead> <tr> <th>Rated Voltage</th> <th>160</th> <th>200</th> <th>250</th> <th>350</th> <th>400</th> <th>450</th> </tr> </thead> <tbody> <tr> <td>Tanδ (max)</td> <td>0.20</td> <td>0.20</td> <td>0.20</td> <td>0.24</td> <td>0.24</td> <td>0.24</td> </tr> </tbody> </table> | | Rated Voltage | 160 | 200 | 250 | 350 | 400 | 450 | Tanδ (max) | 0.20 | 0.20 | 0.20 | 0.24 | 0.24 | 0.24 | | | | | | | | | |
| Rated Voltage | 160 | 200 | 250 | 350 | 400 | 450 | | | | | | | | | | | | | | | | | | | |
| Tanδ (max) | 0.20 | 0.20 | 0.20 | 0.24 | 0.24 | 0.24 | | | | | | | | | | | | | | | | | | | |
| Low Temperature Characteristics (at 120 Hz) | <p>Impedance ratio shall not exceed the values given in the table below.</p> <table border="1"> <thead> <tr> <th colspan="2">Rated Voltage</th> <th>160</th> <th>200</th> <th>250</th> <th>350</th> <th>400</th> <th>450</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Impedance Ratio</td> <td>Z(-25°C) / Z(+20°C)</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>5</td> <td>6</td> </tr> <tr> <td>Z(-40°C) / Z(+20°C)</td> <td>4</td> <td>4</td> <td>4</td> <td>4</td> <td>6</td> <td>-</td> </tr> </tbody> </table> | | Rated Voltage | | 160 | 200 | 250 | 350 | 400 | 450 | Impedance Ratio | Z(-25°C) / Z(+20°C) | 3 | 3 | 3 | 3 | 5 | 6 | Z(-40°C) / Z(+20°C) | 4 | 4 | 4 | 4 | 6 | - |
| Rated Voltage | | 160 | 200 | 250 | 350 | 400 | 450 | | | | | | | | | | | | | | | | | | |
| Impedance Ratio | Z(-25°C) / Z(+20°C) | 3 | 3 | 3 | 3 | 5 | 6 | | | | | | | | | | | | | | | | | | |
| | Z(-40°C) / Z(+20°C) | 4 | 4 | 4 | 4 | 6 | - | | | | | | | | | | | | | | | | | | |
| Endurance | <table border="1"> <thead> <tr> <th>Test Time</th> <th>5,000 Hrs</th> </tr> </thead> <tbody> <tr> <td>Capacitance Change</td> <td>Within ±20% of initial value</td> </tr> <tr> <td>Tanδ</td> <td>Less than 200% of specified value</td> </tr> <tr> <td>Leakage Current</td> <td>Within specified value</td> </tr> </tbody> </table> <p>* The above specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage applied with rated ripple current for 5,000 hours at 105°C.</p> | | Test Time | 5,000 Hrs | Capacitance Change | Within ±20% of initial value | Tanδ | Less than 200% of specified value | Leakage Current | Within specified value | | | | | | | | | | | | | | | |
| Test Time | 5,000 Hrs | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Change | Within ±20% of initial value | | | | | | | | | | | | | | | | | | | | | | | | |
| Tanδ | Less than 200% of specified value | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage Current | Within specified value | | | | | | | | | | | | | | | | | | | | | | | | |
| Shelf Life Test | <table border="1"> <thead> <tr> <th>Test Time</th> <th>1,000 Hrs</th> </tr> </thead> <tbody> <tr> <td>Capacitance Change</td> <td>Within ±20% of initial value</td> </tr> <tr> <td>Tanδ</td> <td>Less than 200% of specified value</td> </tr> <tr> <td>Leakage Current</td> <td>Within specified value</td> </tr> </tbody> </table> <p>* The above specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied. The rated voltage shall be applied to the capacitors before the measurements (Refer to JIS C 5101-4 4.1).</p> | | Test Time | 1,000 Hrs | Capacitance Change | Within ±20% of initial value | Tanδ | Less than 200% of specified value | Leakage Current | Within specified value | | | | | | | | | | | | | | | |
| Test Time | 1,000 Hrs | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Change | Within ±20% of initial value | | | | | | | | | | | | | | | | | | | | | | | | |
| Tanδ | Less than 200% of specified value | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage Current | Within specified value | | | | | | | | | | | | | | | | | | | | | | | | |
| Ripple Current and Frequency Multipliers | <table border="1"> <thead> <tr> <th rowspan="2">Cap. (μF)</th> <th colspan="4">Freq.(Hz)</th> </tr> <tr> <th>120</th> <th>1k</th> <th>10k</th> <th>100k up</th> </tr> </thead> <tbody> <tr> <td>4.7 ~ 82</td> <td>1.00</td> <td>1.20</td> <td>1.40</td> <td>1.50</td> </tr> <tr> <td>100 ≤</td> <td>1.00</td> <td>1.18</td> <td>1.35</td> <td>1.45</td> </tr> </tbody> </table> | | Cap. (μF) | Freq.(Hz) | | | | 120 | 1k | 10k | 100k up | 4.7 ~ 82 | 1.00 | 1.20 | 1.40 | 1.50 | 100 ≤ | 1.00 | 1.18 | 1.35 | 1.45 | | | | |
| Cap. (μF) | Freq.(Hz) | | | | | | | | | | | | | | | | | | | | | | | | |
| | 120 | 1k | 10k | 100k up | | | | | | | | | | | | | | | | | | | | | |
| 4.7 ~ 82 | 1.00 | 1.20 | 1.40 | 1.50 | | | | | | | | | | | | | | | | | | | | | |
| 100 ≤ | 1.00 | 1.18 | 1.35 | 1.45 | | | | | | | | | | | | | | | | | | | | | |

Diagram of Dimensions



Lead Spacing and Diameter Unit: mm

| | 10 | 12.5 | 16 | 18 |
|----|--------------------------|------|-----|-----|
| φD | 10 | 12.5 | 16 | 18 |
| P | 5.0 | 5.0 | 7.5 | 7.5 |
| φd | 0.6 | | 0.8 | |
| α | L < 20: 1.5, L ≥ 20: 2.0 | | | |
| β | 0.5 | | | |

Dimension: $\phi D \times L$ (mm)
Ripple Current: mA/rms at 105°C

Dimension and Permissible Ripple Current

| Rated Volt. (V _{DC}) Contents Cap.(μ F) | 160V (2C) | | | 200V (2D) | | | 250V (2E) | | | 350V (2V) | | | 400V (2G) | | |
|---|-------------------|----------------|---------|-------------------|----------------|---------|-------------------|----------------|---------|-------------------|----------------|---------|-------------------|----------------|---------|
| | $\phi D \times L$ | Ripple Current | | $\phi D \times L$ | Ripple Current | | $\phi D \times L$ | Ripple Current | | $\phi D \times L$ | Ripple Current | | $\phi D \times L$ | Ripple Current | |
| | | 120 Hz | 100k Hz | | 120 Hz | 100k Hz | | 120 Hz | 100k Hz | | 120 Hz | 100k Hz | | 120 Hz | 100k Hz |
| 4.7 | | | | | | | | | | | | | 10×16 | 98 | 147 |
| 6.8 | | | | | | | | | | 10×16 | 100 | 150 | 10×16 | 120 | 180 |
| 10 | | | | | | | 10×16 | 155 | 233 | 10×20 | 160 | 240 | 10×20 | 170 | 255 |
| 22 | 10×16 | 190 | 285 | 10×16 | 205 | 305 | 12.5×20 | 210 | 315 | 12.5×25 | 305 | 460 | 12.5×25 | 320 | 480 |
| 33 | 10×20 | 255 | 380 | 10×20 | 280 | 420 | 12.5×20 | 335 | 505 | 16×25 | 410 | 615 | 16×25 | 425 | 635 |
| 47 | 10×20 | 265 | 395 | 12.5×20 | 330 | 495 | 16×25 | 560 | 840 | 16×31.5 | 510 | 765 | 16×31.5 | 530 | 795 |
| 68 | 12.5×20 | 430 | 645 | 12.5×25 | 480 | 720 | 16×25 | 600 | 900 | 18×31.5 | 580 | 870 | 18×31.5 | 600 | 900 |
| 100 | 12.5×25 | 540 | 780 | 16×20 | 570 | 825 | 16×31.5 | 700 | 1,015 | 18×35.5 | 665 | 965 | 18×40 | 700 | 1,015 |
| 120 | 16×20 | 555 | 805 | 16×25 | 700 | 1,015 | 18×31.5 | 790 | 1,145 | 18×40 | 715 | 1,035 | 18×45 | 780 | 1,130 |
| 150 | 16×25 | 645 | 935 | 16×31.5 | 750 | 1,090 | 18×35.5 | 875 | 1,270 | | | | | | |
| 180 | 16×31.5 | 745 | 1,080 | 18×31.5 | 830 | 1,205 | 18×40 | 980 | 1,420 | | | | | | |
| 220 | 18×31.5 | 825 | 1,196 | 18×35.5 | 900 | 1,305 | 18×45 | 1,100 | 1,595 | | | | | | |
| 270 | 18×35.5 | 930 | 1,350 | 18×40 | 1,100 | 1,595 | | | | | | | | | |
| 330 | 18×40 | 995 | 1,440 | 18×45 | 1,250 | 1,815 | | | | | | | | | |

| Rated Volt. (V _{DC}) Contents Cap.(μ F) | 450V (2W) | | |
|---|-------------------|----------------|---------|
| | $\phi D \times L$ | Ripple Current | |
| | | 120 Hz | 100k Hz |
| 4.7 | 10×16 | 105 | 158 |
| 6.8 | 10×20 | 170 | 255 |
| 10 | 12.5×20 | 280 | 420 |
| 22 | 16×25 | 405 | 610 |
| 33 | 16×31.5 | 490 | 735 |
| 47 | 18×31.5 | 575 | 865 |
| 68 | 18×40 | 665 | 1,000 |

Part Numbering System

| | | | | | | | |
|-------------|-------------|-----------------------|---------------|--------------------------------|-------------|----------------|---------------------------|
| RXB Series | 22 μ F | $\pm 20\%$ | 450V | Bulk Package | Gas Type | 16 ϕ ×25L | Pb-free and PET sleeve |
| RXB | 220 | M | 2W | BK | - | 1625 | |
| Series Name | Capacitance | Capacitance Tolerance | Rated Voltage | Lead Configuration and Package | Rubber Type | Case Size | Lead Wire and Sleeve type |

Note: For more details, please refer to "Part Numbering System (Radial Type)" on page 13.