

CD294 SERIES



ALUMINUM ELECTROLYTIC CAPACITORS

- Load life 2000 hours at 105°C
- High ripple current



■ SPECIFICATIONS

| Item | Characteristics | | | | | | | | | | | | | | | | |
|-----------------------------------|---|-------------------|------------|-----------------|------------------------------------|--------------------|-----------------------------------|--------------------|--|------|------|---------------|------|------|------|------|------|
| Operating Temperature Range(°C) | -40~+105(>160V, -25~+105) | | | | | | | | | | | | | | | | |
| Rated Voltage Range (V) | 16~450 | | | | | | | | | | | | | | | | |
| Nominal capacitance range (μF) | 39~47000 | | | | | | | | | | | | | | | | |
| Capacitance Tolerance(20°C,120Hz) | ±20% | | | | | | | | | | | | | | | | |
| Leakage current (μA) | I≤0.01CV or 1.5mA whichever is smaller (at 20°C, after 5 minutes) C: Nominal Capacitance (μF) V: Rated Voltage (V) | | | | | | | | | | | | | | | | |
| Dissipation Factor(20°C,120Hz) | <table border="1"> <thead> <tr> <th>Rated voltage (v)</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63~100</th> <th>160~400</th> <th>450</th> </tr> </thead> <tbody> <tr> <td>tanδ</td> <td>0.50</td> <td>0.40</td> <td>0.35</td> <td>0.30</td> <td>0.20</td> <td>0.15</td> <td>0.20</td> </tr> </tbody> </table> | Rated voltage (v) | 16 | 25 | 35 | 50 | 63~100 | 160~400 | 450 | tanδ | 0.50 | 0.40 | 0.35 | 0.30 | 0.20 | 0.15 | 0.20 |
| Rated voltage (v) | 16 | 25 | 35 | 50 | 63~100 | 160~400 | 450 | | | | | | | | | | |
| tanδ | 0.50 | 0.40 | 0.35 | 0.30 | 0.20 | 0.15 | 0.20 | | | | | | | | | | |
| Temperature Stability(120Hz) | <table border="1"> <thead> <tr> <th colspan="2">Rated voltage (v)</th> <th>16~100</th> <th>160~200</th> <th>250~450</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Impedance Ratio</td> <td>Z-25°C/Z+20°C</td> <td>4</td> <td>4</td> <td>4</td> </tr> <tr> <td>Z-40°C/Z+20°C</td> <td>15</td> <td>-</td> <td>-</td> </tr> </tbody> </table> | Rated voltage (v) | | 16~100 | 160~200 | 250~450 | Impedance Ratio | Z-25°C/Z+20°C | 4 | 4 | 4 | Z-40°C/Z+20°C | 15 | - | - | | |
| Rated voltage (v) | | 16~100 | 160~200 | 250~450 | | | | | | | | | | | | | |
| Impedance Ratio | Z-25°C/Z+20°C | 4 | 4 | 4 | | | | | | | | | | | | | |
| | Z-40°C/Z+20°C | 15 | - | - | | | | | | | | | | | | | |
| Load Life(+105°C) | <table border="1"> <tbody> <tr> <td>Time</td> <td>2000 hours</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 | 2000 hours | 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 | 2000 hours | | | | | | | | | | | | | | | | |
| 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) | <table border="1"> <tbody> <tr> <td>Time</td> <td>500 hours</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> <p>After test: Rated voltage to be applied for 30 minutes, 24 to 48 hours before measurement.</p> | Time | 500 hours | 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 | 500 hours | | | | | | | | | | | | | | | | |
| 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. | | | | | | | | | | | | | | | | |

■ DIMENSIONS

MM

■ MULTIPLIER FOR RIPPLE CURRENT

| | Frequency coefficient | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|-----|------|------|------|-----------------|-----------|-----|-----|-----|------|-------------|------------------|-----|-----|-----|---|--|------|------|---|------|------|------|---------|------|---|------|------|-----|------|------|---|------|------|-----|
| | <table border="1"> <thead> <tr> <th>Freq (Hz)</th> <th>50</th> <th>120</th> <th>1K</th> <th>10K</th> <th>20K</th> </tr> </thead> <tbody> <tr> <td>Rated Voltage(V)</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>≤100</td> <td>0.95</td> <td>1</td> <td>1.10</td> <td>1.15</td> <td>1.15</td> </tr> <tr> <td>160~250</td> <td>0.87</td> <td>1</td> <td>1.11</td> <td>1.18</td> <td>1.2</td> </tr> <tr> <td>≥315</td> <td>0.80</td> <td>1</td> <td>1.14</td> <td>1.14</td> <td>1.2</td> </tr> </tbody> </table> | | | | | | Freq (Hz) | 50 | 120 | 1K | 10K | 20K | Rated Voltage(V) | | | | | | ≤100 | 0.95 | 1 | 1.10 | 1.15 | 1.15 | 160~250 | 0.87 | 1 | 1.11 | 1.18 | 1.2 | ≥315 | 0.80 | 1 | 1.14 | 1.14 | 1.2 |
| | Freq (Hz) | 50 | 120 | 1K | 10K | 20K | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Rated Voltage(V) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ≤100 | 0.95 | 1 | 1.10 | 1.15 | 1.15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 160~250 | 0.87 | 1 | 1.11 | 1.18 | 1.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ≥315 | 0.80 | 1 | 1.14 | 1.14 | 1.2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Temperature coefficient | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>Temperature(°C)</th> <th>+40</th> <th>+55</th> <th>+70</th> <th>+80</th> <th>+105</th> </tr> </thead> <tbody> <tr> <td>Coefficient</td> <td>2.7</td> <td>2.5</td> <td>2.1</td> <td>1.7</td> <td>1</td> </tr> </tbody> </table> | | | | | | Temperature(°C) | +40 | +55 | +70 | +80 | +105 | Coefficient | 2.7 | 2.5 | 2.1 | 1.7 | 1 | | | | | | | | | | | | | | | | | | | |
| Temperature(°C) | +40 | +55 | +70 | +80 | +105 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Coefficient | 2.7 | 2.5 | 2.1 | 1.7 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

CD294 SERIES



■ STANDARD RATINGS

| WV(V) | 16 | | 25 | | 35 | | 50 | | 63 | | 80 | | 100 | |
|-------|-----------|---------------|-----------|---------------|-----------|---------------|-----------|---------------|-----------|---------------|-----------|---------------|-----------|---------------|
| | Cap μF | Ripple (A) | Cap μF | Ripple (A) | Cap μF | Ripple (A) | Cap μF | Ripple (A) | Cap μF | Ripple (A) | Cap μF | Ripple (A) | Cap μF | Ripple (A) |
| 22X25 | 4700 | 1.4 | 3300 | 1.3 | 2200 | 1.1 | 1200 | 0.96 | 820 | 0.92 | 560 | 0.76 | 390 | 0.64 |
| 22x25 | 6800 | 1.60 | 4700 | 1.55 | 3300 | 1.43 | 1800 | 1.31 | 1200 | 1.25 | 820 | 1.11 | 560 | 1.07 |
| 22x30 | 10000 | 1.99 | 6800 | 1.91 | 3900 | 1.65 | 2700 | 1.70 | 1800 | 1.52 | 1200 | 1.39 | 820 | 1.35 |
| 22x35 | 12000 | 2.28 | 8200 | 2.14 | 5600 | 2.02 | 3300 | 1.98 | 2200 | 1.73 | 1500 | 1.61 | 1000 | 1.54 |
| 22x40 | 15000 | 2.64 | 10000 | 2.40 | 6800 | 2.28 | 3900 | 2.25 | 2700 | 1.97 | 1800 | 1.83 | 1200 | 1.74 |
| 22x45 | 18000 | 2.98 | 12000 | 2.69 | -- | -- | 4700 | 2.56 | -- | -- | 2200 | 2.09 | 1500 | 1.99 |
| 22x50 | -- | -- | -- | -- | 8200 | 2.67 | 5600 | 2.89 | 3300 | 2.32 | -- | -- | -- | -- |
| 25x25 | 10000 | 1.99 | 6800 | 1.91 | 4700 | 1.78 | 2700 | 1.70 | 1800 | 1.52 | 1200 | 1.39 | 820 | 1.35 |
| 25x30 | 12000 | 2.30 | 8200 | 2.16 | 5600 | 2.04 | 3300 | 2.00 | 2200 | 1.75 | 1500 | 1.62 | 1000 | 1.56 |
| 25x35 | 15000 | 2.68 | 10000 | 2.44 | 6800 | 2.31 | 3900 | 2.28 | 2700 | 1.99 | 2200 | 2.01 | 1200 | 1.76 |
| 25x40 | 18000 | 3.04 | 12000 | 2.74 | 8200 | 2.60 | 5600 | 2.81 | 3300 | 2.27 | -- | -- | 1500 | 2.03 |
| 25x45 | 22000 | 3.40 | 15000 | 3.15 | 10000 | 2.92 | -- | -- | 3900 | 2.54 | 2700 | 2.43 | 1800 | 2.28 |
| 25x50 | 27000 | 3.81 | 18000 | 3.54 | 12000 | 3.26 | 6800 | 3.37 | 4700 | 2.88 | 3300 | 2.76 | 2200 | 2.57 |
| 30x25 | 12000 | 2.38 | 8200 | 2.25 | 5600 | 2.12 | 3900 | 2.22 | 2700 | 1.93 | 1800 | 1.81 | 1200 | 1.71 |
| 30x30 | 18000 | 3.00 | 12000 | 2.70 | 8200 | 2.56 | 4700 | 2.58 | 300 | 2.24 | 2200 | 2.10 | 1500 | 2.00 |
| 30x35 | 22000 | 3.39 | 15000 | 3.13 | 10000 | 2.92 | 5600 | 2.95 | 3900 | 2.55 | 2700 | 2.43 | 1800 | 2.27 |
| 30x40 | 27000 | 3.83 | 18000 | 3.54 | 12000 | 3.28 | 6800 | 3.39 | 4700 | 2.90 | 3300 | 2.78 | 2200 | 2.59 |
| 30x45 | 33000 | 4.30 | 22000 | 4.24 | 15000 | 3.74 | 8200 | 3.71 | 5600 | 3.28 | 3900 | 3.12 | 2700 | 2.94 |
| 30x50 | 39000 | 4.74 | -- | -- | -- | -- | 10000 | 4.09 | 6800 | 3.73 | 4700 | 3.56 | 3300 | 3.32 |
| 35x25 | 18000 | 3.10 | 12000 | 2.80 | 8200 | 2.78 | 4700 | 2.67 | 3300 | 2.41 | 2200 | 2.17 | 1500 | 2.07 |
| 35x30 | 27000 | 3.74 | 15000 | 3.22 | 12000 | 3.20 | 6800 | 3.31 | 4700 | 2.83 | 3300 | 2.71 | 2200 | 2.52 |
| 35x35 | 33000 | 4.24 | 22000 | 3.96 | 15000 | 3.69 | 8200 | 3.66 | 5600 | 3.24 | 3900 | 3.07 | 2700 | 2.90 |
| 35x40 | 39000 | 4.72 | -- | -- | 18000 | 4.16 | 10000 | 4.07 | 6800 | 3.71 | 4700 | 3.50 | 3300 | 3.31 |
| 35x45 | 47000 | 5.27 | 27000 | 4.75 | -- | -- | 12000 | 4.50 | 8200 | 4.16 | 5600 | 3.87 | 3900 | 3.69 |
| 35x50 | -- | -- | 33000 | 5.39 | 22000 | 4.92 | -- | -- | 10000 | 4.69 | 6800 | 4.19 | 4700 | 4.14 |

| WV(V) | 160 | | 180 | | 200 | | 250 | | 350 | | 400 | | 450 | |
|-------|-----------|---------------|-----------|---------------|-----------|---------------|-----------|---------------|-----------|---------------|-----------|---------------|-----------|---------------|
| | Cap μF | Ripple (A) | Cap μF | Ripple (A) | Cap μF | Ripple (A) | Cap μF | Ripple (A) | Cap μF | Ripple (A) | Cap μF | Ripple (A) | Cap μF | Ripple (A) |
| 22X25 | 180 | 0.65 | 220 | 0.65 | 150 | 0.60 | 100 | 0.45 | 56 | 0.37 | 39 | 0.32 | | |
| 22x25 | 330 | 1.16 | 270 | 1.08 | 220 | 1.08 | 180 | 0.94 | 68 | 0.56 | 68 | 0.47 | 56 | 0.47 |
| 22x30 | 390 | 1.43 | 330 | 1.30 | 330 | 1.30 | 220 | 1.10 | 100 | 0.70 | 82 | 0.56 | 68 | 0.56 |
| 22x35 | 470 | 1.52 | 470 | 1.50 | 390 | 1.41 | 270 | 1.13 | 120 | 0.73 | 120 | 0.64 | 82 | 0.64 |
| 22x40 | 560 | 1.62 | 560 | 1.62 | 470 | 1.50 | 330 | 1.20 | 150 | 0.79 | 150 | 0.70 | 100 | 0.70 |
| 22x45 | 680 | 1.70 | -- | -- | 560 | 1.58 | 390 | 1.26 | 180 | 0.81 | -- | -- | 120 | 0.73 |
| 22x50 | 820 | 1.81 | 680 | 1.76 | 680 | 1.68 | 470 | 1.37 | 220 | 0.93 | 180 | 0.78 | 150 | 0.78 |
| 25x25 | 470 | 1.55 | 390 | 1.35 | 330 | 1.35 | 220 | 1.15 | 100 | 0.70 | 82 | 0.65 | 68 | 0.65 |
| 25x30 | 560 | 1.73 | 470 | 1.62 | 470 | 1.47 | 330 | 1.30 | 150 | 0.82 | 120 | 0.70 | 100 | 0.70 |
| 25x35 | 680 | 1.81 | 560 | 1.69 | 560 | 1.65 | 390 | 1.41 | 180 | 0.89 | 150 | 0.73 | 120 | 0.73 |
| 25x40 | 820 | 1.98 | 680 | 1.72 | 680 | 1.80 | 470 | 1.52 | 220 | 0.97 | 180 | 0.82 | 150 | 0.82 |
| 25x45 | 1000 | 2.04 | 820 | 1.78 | -- | -- | 560 | 1.59 | -- | -- | 220 | 0.87 | 180 | 0.87 |
| 25x50 | 1200 | 2.12 | 1000 | 1.91 | 820 | 1.87 | 680 | 1.66 | 270 | 1.01 | 270 | 0.94 | 220 | 0.94 |
| 30x25 | 680 | 1.82 | 560 | 1.67 | 470 | 1.56 | 330 | 1.30 | 150 | 0.82 | 120 | 0.78 | 100 | 0.78 |
| 30x30 | 820 | 1.98 | 680 | 1.74 | 680 | 1.82 | 470 | 1.36 | 180 | 0.90 | 180 | 0.83 | 150 | 0.83 |
| 30x35 | 1000 | 2.14 | 820 | 1.85 | 820 | 1.99 | 560 | 1.57 | 270 | 1.05 | 220 | 0.86 | 180 | 0.86 |
| 30x40 | 1200 | 2.22 | 1000 | 2.01 | -- | -- | 680 | 1.76 | -- | -- | 270 | 0.95 | 220 | 0.95 |
| 30x45 | 1500 | 2.46 | 1200 | 2.19 | 1000 | 2.17 | 820 | 1.83 | 330 | 1.16 | 330 | 1.11 | 270 | 1.11 |
| 30x50 | -- | -- | 1500 | 2.36 | 1200 | 2.22 | 1000 | 1.87 | 390 | 1.26 | 390 | 1.15 | 330 | 1.15 |
| 35x25 | 820 | 1.93 | 680 | 1.92 | 680 | 1.96 | 470 | 1.40 | 220 | 0.98 | 180 | 0.86 | 150 | 0.86 |
| 35x30 | 1200 | 2.40 | 1000 | 2.16 | 820 | 2.07 | 560 | 1.56 | 270 | 1.01 | 270 | 0.91 | 220 | 0.91 |
| 35x35 | 1500 | 2.53 | 1200 | 2.34 | 1000 | 2.22 | 820 | 1.82 | 330 | 1.16 | 330 | 1.13 | 270 | 1.13 |
| 35x40 | -- | -- | 1500 | 2.56 | 1200 | 2.42 | 1000 | 1.99 | 390 | 1.26 | 390 | 1.26 | 330 | 1.26 |
| 35x45 | 1800 | 2.98 | 1800 | 2.67 | 1500 | 2.59 | 1200 | 2.10 | 470 | 1.35 | 470 | 1.31 | 390 | 1.31 |
| 35x50 | 2200 | 3.10 | -- | -- | 1800 | 2.70 | -- | -- | 560 | 1.51 | 560 | 1.50 | 470 | 1.50 |

■ Ripple current: 105°C, 100Hz or 120Hz.

The specific capacitance and case size are available on request.