



ENGLISH

Datasheet

Aluminium Electrolytic Capacitor

RS Stock number 711-1930



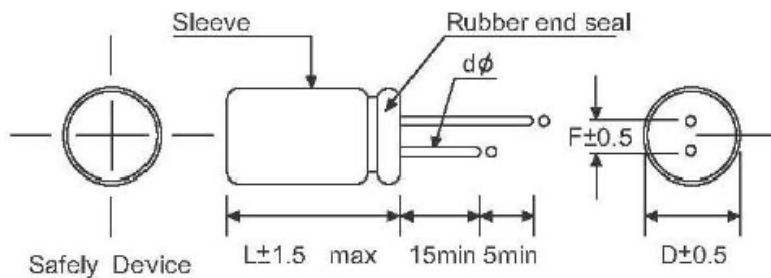
Specifications:

| Item | Performance Characteristics | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----------------------|-----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|--------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Operating Temperature Range | -40 to +105°C | -25 to +105°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rated Voltage Range | 6.3 to 100 VDC | 160 to 450 VDC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Tolerance | ± 20% (120Hz, +20°C) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage Current (at 20°C, max.) | I < 0.01 CV or 3 (µA). After 1 minute whichever is greater measured with rated working voltage applied. | I < 0.03 CV or 3 (µA). After 1 minute with rated working voltage applied. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissipation Factor (120Hz, 20°C) | <table border="1"> <thead> <tr> <th>Working voltage (VDC)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> <th>160</th> <th>200</th> <th>250</th> <th>350</th> <th>400</th> <th>450</th> </tr> </thead> <tbody> <tr> <td>D.F (%) Max.</td> <td>23</td> <td>20</td> <td>16</td> <td>14</td> <td>12</td> <td>10</td> <td>10</td> <td>10</td> <td>15</td> <td>15</td> <td>16</td> <td>20</td> <td>20</td> <td>20</td> </tr> </tbody> </table> | | | | | | | | | | | | | | Working voltage (VDC) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250 | 350 | 400 | 450 | D.F (%) Max. | 23 | 20 | 16 | 14 | 12 | 10 | 10 | 10 | 15 | 15 | 16 | 20 | 20 | 20 |
| | Working voltage (VDC) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250 | 350 | 400 | 450 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D.F (%) Max. | 23 | 20 | 16 | 14 | 12 | 10 | 10 | 10 | 15 | 15 | 16 | 20 | 20 | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| For capacitance > 1000µ F, add 2% per another 1000µ (+20°C at 120Hz) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Specifications:

| Item | Performance Characteristics | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|--------------|---|---|---|---|---|---|---|---|---|---|---|---|---|----|--------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Low Temperature Characteristics (at 120Hz) | Impedance ratio max. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <table border="1"> <thead> <tr> <th>W.V (VDC)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> <th>160</th> <th>200</th> <th>250</th> <th>350</th> <th>400</th> <th>450</th> </tr> </thead> <tbody> <tr> <td>Z-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> <td>3</td> <td>3</td> <td>3</td> <td>5</td> <td>6</td> <td>15</td> </tr> <tr> <td>Z-40°C/+20°C</td> <td>9</td> <td>6</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table> | W.V (VDC) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250 | 350 | 400 | 450 | Z-25°C/+20°C | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 5 | 6 | 15 | Z-40°C/+20°C | 9 | 6 | 4 | 4 | 3 | 3 | 3 | 3 | - | - | - | - | - | - |
| | W.V (VDC) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250 | 350 | 400 | 450 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Z-25°C/+20°C | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 5 | 6 | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Z-40°C/+20°C | 9 | 6 | 4 | 4 | 3 | 3 | 3 | 3 | - | - | - | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| For capacitance value 1000µF, add 0.5 per another 1000µF for -25°C/+20°C For capacitance value 1000µF, add 1 per another 1000µF for -40°C/+20°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Load Life | Test Conditions: Duration time: 2000hrs Ambient temperature: +105°C Applied voltage: Rated DC working voltage After test requirements: +20°C After test requirements: ≤ +20% of initial measured value Dissipation Factor: ≤ 200% of the initial specified value Leakage Current: ≤ the initial specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shelf Life | Test Conditions: Duration time: 1000hrs Ambient temperature: +105°C Applied Voltage: None After test requirements at +20°C: Same limits as load life. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Diagram of Dimensions:



| | (Unit: mm) | | | | | | | | | |
|-----------|------------|-----|-----|-----|-----|-----|-----|----|----|-----|
| D | 5 | 6 | 8 | 10 | 13 | 16 | 18 | 22 | 25 | |
| F | 2.0 | 2.5 | 3.5 | 5.0 | 5.0 | 7.5 | 7.5 | 10 | 12 | |
| φd | 0.5 | | | 0.6 | | | 0.8 | | | 1.0 |



Features:

- Used in communication equipment's, switching power supply, etc.
- Safety vent construction design

Ripple Current & Temperature

| | | | | | |
|------------------|------|------|------|------|------|
| Temperature (°C) | 45 | 60 | 70 | 85 | 105 |
| Multiplier | 2.10 | 1.90 | 1.65 | 1.40 | 1.00 |

Ripple Current & Frequency Multipliers

| | | | | | | |
|------------------|---------|-----|------|------|------|-----------|
| CAP (µF)/Hz | 50 (60) | 120 | 400 | 1K | 10K | 50 – 100K |
| CAP ≤ 10 | 0.8 | 1.0 | 1.30 | 1.45 | 1.65 | 1.70 |
| 10 < CAP ≤ 100 | 0.8 | 1.0 | 1.23 | 1.36 | 1.48 | 1.53 |
| 100 < CAP ≤ 1000 | 0.8 | 1.0 | 1.16 | 1.25 | 1.35 | 1.38 |
| 1000 < CAP | 0.8 | 1.0 | 1.11 | 1.18 | 1.25 | 1.28 |

Case Size

 \varnothing D x L (mm)

| WV (SV) uF | 6.3 | | {8} | | 10 | | {13} | | 16 | | {20} | | 25 | | {32} | | 35 | | {44} | |
|------------------|----------------|--------------|----------------|--------------|----------------|--------------|----------------|----------------------|-------------------------|--------------|------|--------|-------------------------|-------------------|----------------|------------|--------|--------|------|--------|
| | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple |
| 4.7 | | | | | | | | | | | | | 5x11 | 27 | 5x11 | 29 | | | | |
| 6.8 | | | | | | | | | | | | | 5x11 | 35 | 5x11 | 38 | | | | |
| 10 | | | | | | | | 5x11 | 38 | 5x11 | 40 | 5x11 | 42 | | | | | | | |
| 22 | | | 5x11 | 50 | 5x11 | 56 | 5x11 | 60 | 5x11 | 62 | | | | | | | | | | |
| 33 | 5x11 | 56 | 5x11 | 60 | 5x11 | 65 | 5x11 | 70 | 5x11 | 78 | | | | | | | | | | |
| 47 | 5x11 | 68 | 5x11 | 72 | 5x11 | 100 | 5x11 | 105 | 5x11 | 110 | 115 | 115 | 5x11 | 105 | 5x11 | 110 | 5x11 | 110 | 115 | 115 |
| 68 | 5x11 | 77 | 5x11 | 82 | 5x11 | 105 | 5x11 | 120 | 6.3x11 | 140 | | | | | | | | | | |
| 100 | 5x11 | 98 | 5x11 | 110 | 5x11 | 115 | 5x11 | 150 | 6.3x11 | 165 | 135 | 135 | 6.3x11 | 150 | 6.3x11 | 165 | 6.3x11 | 165 | 180 | 180 |
| 220 | 5x11 6.3x11 | 160 180 | 6.3x11 | 180 | 6.3x11 | 220 | 6.3x11 8x11 | 240 | 8x11 | 300 | 230 | 230 | 8x11 | 240 | 8x11 | 300 | 8x11 | 300 | 330 | 330 |
| 330 | 6.3x11 | 200 | 6.3x11 8x11 | 260 280 | 6.3x11 8x11 | 300 | 8x11 | 350 | 8x11 10x12 | 410 | 350 | 350 | 8x11 10x12 | 350 | 10x12 | 410 | 10x12 | 410 | 420 | 420 |
| 470 | 6.3x11 8x11 | 280 310 | 6.3x11 8x11 | 300 315 | 6.3x11 8x11 | 380 | 8x11 10x12 | 445 | 8x14 10x12 | 480 | 400 | 400 | 8x14 10x12 | 415 | 10x17 | 480 | 10x17 | 480 | 520 | 520 |
| 560 | 8x11 | 320 | 8x11 | 330 | 8x11 | 410 | 10x12 | 460 | 10x15 | 540 | | | | | | | | | | |
| 680 | 8x11 | 360 | 10x12 | 420 | 10x12 | 480 | 10x12 | 520 | 10x15 | 650 | | | | | | | | | | |
| 820 | 8x11 | 390 | 10x12 | 480 | 10x12 | 550 | 10x15 | 640 | 10x15 | 760 | | | | | | | | | | |
| 1000 | 8x11 | 420 | 10x12 10x15 | 530 580 | 10x12 10x15 | 570 630 | 8x16 10x17 | 740 800 850 | 10x15 10x17 10x20 | 870 880 | 600 | 600 | 10x15 10x17 10x20 | 740 800 850 | 10x25 13x21 | 870 880 | | | | |
| 1200 | 10x15 | 480 | 10x15 | 650 | 10x15 | 710 | 10x20 | 850 | 10x20 | | | | | | | | | | | |
| 1500 | 10x15 | 620 | 10x17 | 770 | 10x17 | 820 | 10x20 | 910 | 13x21 | 970 | | | | | | | | | | |
| 2200 | 10x17 10x20 | 780 800 | 10x17 10x20 | 870 900 | 10x17 10x20 | 1020 1060 | 13x21 13x26 | 1210 1270 1270 | 13x21 13x26 16x16 | 1300 1400 | | | | | | | | | | |
| 2700 | 10x20 | 850 | 13x21 | 920 | 13x21 | 1100 | 13x21 | 1330 | 16x26 | 1500 | | | | | | | | | | |
| 3300 | 10x20 13x21 | 970 1010 | 10x25 13x21 | 1110 1160 | 10x25 13x21 | 1220 1240 | 13x21 13x26 | 1480 1540 | 16x26 16x31 | 1680 | | | | | | | | | | |
| 4700 | 10x25 13x21 | 1160 1200 | 13x21 13x26 | 1360 1390 | 13x21 13x26 | 1620 | 16x26 | 1800 | 16x31 | 1900 | | | | | | | | | | |
| 5600 | 13x26 | 1320 | 16x26 | 1510 | 16x31 | 1720 | 16x31 | 1890 | 16x36 | 2000 | | | | | | | | | | |
| 6800 | 16x26 | 1470 | 16x26 | 1680 | 16x31 | 1880 | 16x31 | 2040 | 18x36 | 2090 | | | | | | | | | | |
| 8200 | 16x26 | 1520 | 16x31 | 1840 | 16x36 | 1950 | 16x36 | 2090 | 18x36 | 2180 | | | | | | | | | | |
| 10000 | 16x26 16x31 | 1690 1740 | 16x36 18x36 | 1900 1990 | 16x36 18x41 | 2080 2080 | 18x36 18x41 | 2200 | 22x42 | 2300 | | | | | | | | | | |
| 15000 | 16x36 18x36 | 2080 2190 | 18x36 | 2230 | 22x40 | 2300 | 22x40 | 2500 | 22x42 | - | | | | | | | | | | |

Ripple Current(mA,rms)at105□120Hz

| Case Size uF | 50 {63} | | 63 {79} | | 100 {125} | | 160 {200} | | 200 {250} | |
|-----------------|----------------|-------------|-------------------------|-------------------|----------------|------------|----------------|------------|----------------|------------|
| | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple |
| 0.1 | 5x11 | 1.3 | 5x11 | 1.3 | 5x11 | 1.3 | - | - | - | - |
| 0.22 | 5x11 | 2.9 | 5x11 | 2.9 | 5x11 | 2.9 | - | - | - | - |
| 0.33 | 5x11 | 4.2 | 5x11 | 4.2 | 5x11 | 4.2 | - | - | - | - |
| 0.47 | 5x11 | 8 | 5x11 | 8 | 5x11 | 8 | 5x11 | 12 | 5x11 | 12 |
| 1 | 5x11 | 14 | 5x11 | 14 | 5x11 | 15 | 5x11 | 17 | 6.3x11 | 17 |
| 2.2 | 5x11 | 20 | 5x11 | 21 | 5x11 | 22 | 6.3x11 | 28 | 6.3x11 | 33 |
| 3.3 | 5x11 | 26 | 5x11 | 28 | 5x11 | 30 | 6.3x11 | 32 | 6.3x11 | 43 |
| 4.7 | 5x11 | 32 | 5x11 | 34 | 5x11 | 36 | 6.3x11 8x11 | 36 42 | 8x11 | 51 |
| 6.8 | 5x11 | 40 | 5x11 | 42 | 6.3x11 | 47 | 8x11 | 56 | 10x12 | 63 |
| 10 | 5x11 | 50 | 5x11 | 51 | 6.3x11 | 60 | 8x11 10x12 | 75 78 | 10x12 10x15 | 83 90 |
| 22 | 5x11 | 75 | 5x11 6.3x11 | 75 85 | 6.3x11 8x11 | 98 105 | 10x15 | 105 | 10x20 | 135 |
| 33 | 5x11 6.3x11 | 90 95 | 6.3x11 8x11 | 105 115 | 8x11 10x12 | 145 155 | 10x20 | 170 | 13x21 | 180 |
| 47 | 6.3x11 | 120 | 6.3x11 8x11 | 145 155 | 10x12 10x15 | 170 180 | 13x21 | 210 | 13x21 13x28 | 220 230 |
| 68 | 8x11 | 155 | 8x11 | 185 | 10x15 | 240 | 13x28 | 280 | 16x28 | 300 |
| 100 | 8x11 | 200 | 10x12 | 240 | 10x20 | 290 | 13x28 16x28 | 320 330 | 16x28 | 360 |
| 220 | 10x12 10x15 | 350 380 | 10x17 10x20 | 400 430 | 13x28 16x28 | 530 560 | 16x38 | 580 | 18x38 | 590 |
| 330 | 10x17 10x20 | 450 470 | 13x21 | 570 | 16x28 | 680 | 18x31 | 710 | 18x38 | 740 |
| 470 | 13x21 | 610 | 13x21 13x28 16x28 | 640 700 720 | 16x28 16x31 | 840 860 | 18x41 | 880 | 22x42 | 890 |
| 560 | 13x21 | 660 | 13x28 | 770 | 16x38 | 880 | - | - | - | - |
| 680 | 13x28 | 770 | 16x28 | 880 | 16x38 | 920 | - | - | - | - |
| 820 | 13x28 | 850 | 16x28 | 920 | 18x31 | 970 | - | - | - | - |
| 1000 | 13x28 16x28 | 900 1010 | 16x32 16x38 | 1190 1220 | 18x41 | 1250 | - | - | - | - |
| 1500 | 16x31 | 1300 | 18x31 | 1350 | 22x42 | 1500 | - | - | - | - |
| 2200 | 18x38 | 1550 | 18x38 | 1590 | 25x44 | 1880 | - | - | - | - |
| 2700 | 18x38 | 1610 | 22x42 | 1720 | - | - | - | - | - | - |
| 3300 | 18x38 | 1780 | 22x42 | 1900 | - | - | - | - | - | - |
| 4700 | 22x42 | 2050 | 25x44 | 2200 | - | - | - | - | - | - |
| 5600 | 25x42 | 2180 | - | - | - | - | - | - | - | - |
| 6800 | 25x44 | 2280 | - | - | - | - | - | - | - | - |

Ripple Current(mA,rms)at105□120Hz



ENGLISH

| Case Size | | Ø D x L (mm) | | | | | | | | | | | | | | | |
|-----------|------------|----------------|--------|----------------|--------|--------|--------|-------------------------|-------------------|--------|--------|----------------|------------|--------|--------|--------|--------|
| uF | WV {SV} | 250 | | {300} | | 350 | | {400} | | 400 | | {450} | | 450 | | {500} | |
| | | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple | Size | Ripple |
| 0.47 | | 5x11 | 12 | 6.3x11 | 15 | 6.3x11 | 15 | 6.3x11 | 15 | 6.3x11 | 15 | 6.3x11 | 15 | 6.3x11 | 15 | 6.3x11 | 15 |
| 1 | | 6.3x11 | 17 | 6.3x11 | 20 | 6.3x11 | 20 | 8x11 | 22 | 8x11 | 22 | 8x11 | 22 | 8x11 | 22 | 8x11 | 22 |
| 2.2 | | 8x11 | 36 | 10x12 | 39 | 10x12 | 39 | 10x12 | 39 | 10x12 | 39 | 10x12 | 39 | 10x12 | 39 | 10x12 | 39 |
| 3.3 | | 8x11 | 43 | 10x12 | 53 | 10x12 | 53 | 10x12 10x15 | 53 | 55 | 55 | 10x15 10x20 | 53 | 55 | 53 | 55 | 55 |
| 4.7 | | 10x12 | 51 | 10x12 10x15 | 63 | 66 | 66 | 10x15 | 69 | 69 | 69 | 10x20 | 64 | 10x20 | 64 | 10x20 | 64 |
| 6.8 | | 10x12 | 70 | 10x15 | 79 | 79 | 79 | 10x15 | 85 | 85 | 85 | 10x20 | 75 | 10x20 | 75 | 10x20 | 75 |
| 10 | | 10x15 | 90 | 10x20 | 110 | 110 | 110 | 10x15 10x20 13x21 | 100 112 115 | 115 | 115 | 13x21 13x28 | 92 | 98 | 92 | 98 | 98 |
| 22 | | 10x20 | 160 | 13x28 | 180 | 180 | 180 | 13x21 16x28 | 170 190 | 190 | 190 | 16x28 16x31 | 175 180 | 175 | 180 | 175 | 180 |
| 33 | | 13x21 13x28 | 175 | 180 | 16x28 | 190 | 190 | 16x28 | 220 | 220 | 220 | 16x38 | 210 | 16x38 | 210 | 16x38 | 210 |
| 47 | | 13x28 | 240 | 16x31 | 250 | 250 | 250 | 16x31 | 300 | 300 | 300 | 16x38 | 280 | 16x38 | 280 | 16x38 | 280 |
| 68 | | 16x28 | 320 | 16x31 | 330 | 330 | 330 | 16x31 | 355 | 355 | 355 | 18x38 | 330 | 18x38 | 330 | 18x38 | 330 |
| 100 | | 16x31 | 400 | 18x38 | 420 | 420 | 420 | 18x38 | 450 | 450 | 450 | - | - | - | - | - | - |
| 120 | | | | | | | | 18x31 | 440 | 440 | 440 | | | | | | |

Ripple Current(mA,rms)at105□120Hz