

## CD286 Low Impedance Aluminum Electrolytic Capacitors

- LOAD LIFE OF 2000 AT 105
- SWITCH POWER SUPPLY

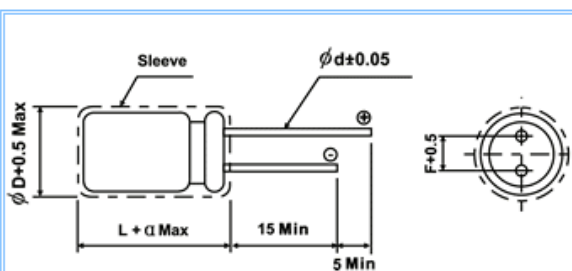
### ■ SPECIFICATIONS

| Item  | Characteristics  |      |      |  |                                    |      |      |      |      |
|---|--|------|------|--|------------------------------------|------|------|------|------|
| Operating Temperature Range (°C)  | -55~+105   |      |      |  |                                    |      |      |      |      |
| Rated Voltage Range(V)  | 6.3~100  |      |      |  |                                    |      |      |      |      |
| Capacitance Range(μF)   | 0.47~15000   |      |      |  |                                    |      |      |      |      |
| Capacitance Tolerance (25°C, 120Hz)   | ±20%   |      |      |  |                                    |      |      |      |      |
| Leakage current(μA)   | 0.02CV or 3 whichever is greater (at 25°C, after 2 minutes)<br>C:Nominal Capacitance (μF) V:Rated Voltage(V)             |      |      |  |                                    |      |      |      |      |
| Dissipation Factor(25°C, 120Hz)   | Rated Voltage(V)   | 6.3  | 10   | 16   | 25                                 | 35   | 50   | 63   | 100  |
|   | tanδ   | 0.22 | 0.19 | 0.16                                       | 0.14                               | 0.12 | 0.10 | 0.09 | 0.08 |
| when nominal capacitance is over 1000uF tanδ shall be added 0.02 to the listed value with increase of every 1000 uF |  |      |      |  |                                    |      |      |      |      |
| Characteristics of Low Temperature  | Impedance at +10°C 100KHz<200% of initial specified value at +20°C ,100KHz(Impedance ratio at 100KHz)                    |      |      |  |                                    |      |      |      |      |
| Load Life(105°C)  | After life test at condition stated in the table below, the capacitors shall meet the following requirement.             |      |      |  |                                    |      |      |      |      |
|   | Case Dia   |      |      |  | Test time(hrs)                     |      |      |      |      |
|   | φD ≤ 8   |      |      |  | 1000                               |      |      |      |      |
|   | φD > 8   |      |      |  | 2000                               |      |      |      |      |
|   | Ripple current applied   |      |      |  |                                    |      |      |      |      |
|   | 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)   | 1000hours. No voltage applied. After test:U <sub>R</sub> to be applied for 30 minutes,24 to 48 hours before measurement. |      |      |  |                                    |      |      |      |      |

### ■ DIMENSIONS

mm

### ■ MULTIPLIER FOR RIPPLE CURRENT



|    |     |     |     |     |      |     |    |
|----|-----|-----|-----|-----|------|-----|----|
| φD | 5   | 6.3 | 8   | 10  | 12.5 | 16  | 18 |
| F  | 2.0 | 2.5 | 3.5 | 5.0 | 7.5  |     |    |
| φd | 0.5 |     | 0.6 |     |      | 0.8 |    |
| a  | 1.0 |     | 2.0 |     |      |     |    |

### Frequency coefficient

| Freq(Hz)   | 120  | 1K   | 10K  | 100K |
|------------|------|------|------|------|
| Cap(μF)    |      |      |      |      |
| 0.47~4.7   | 0.40 | 0.68 | 0.78 | 1.0  |
| 5.6~47     | 0.50 | 0.76 | 0.87 | 1.0  |
| 56~270     | 0.70 | 0.85 | 0.90 | 1.0  |
| 330~1000   | 0.80 | 0.93 | 0.98 | 1.0  |
| 1200~15000 | 0.90 | 0.95 | 1.0  | 1.0  |

### Temperature coefficient

| Temperature(°C) | +70  | +85  | +105 |
|-----------------|------|------|------|
| Factor          | 1.96 | 1.68 | 1.0  |

## STANDARD RATINGS

| ΦD×L<br>(mm) | VV (V) | 6.3   |                     |      | 10     |       |                      |      |        |
|--------------|--------|-------|---------------------|------|--------|-------|----------------------|------|--------|
|              |        | Cap   | Impedance(Ω)/100KHz |      | Ripple | Cap   | Impedance (Ω)/100KHz |      | Ripple |
|              |        | (μF)  | 20℃                 | -10℃ | mArms  | (μF)  | 20℃                  | -10℃ | mArms  |
| 5x11.5       | 100    | 0.65  | 1.3                 | 175  | 82     | 1.65  | 1.3                  | 175  |        |
| 5x15         | 150    | 0.46  | 0.92                | 235  | 100    | 0.46  | 0.92                 | 235  |        |
| 6.3x11.5     | 220    | 0.30  | 0.60                | 290  | 180    | 0.31  | 0.62                 | 290  |        |
| 6.3x15       | 330    | 0.20  | 0.40                | 400  | 220    | 0.20  | 0.40                 | 400  |        |
| 8x12         | 470    | 0.17  | 0.34                | 488  | 330    | 0.17  | 0.34                 | 490  |        |
| 8x15         | 680    | 0.13  | 0.26                | 617  | 470    | 0.13  | 0.26                 | 617  |        |
| 8x20         | 1000   | 0.095 | 0.19                | 800  | 680    | 0.095 | 0.19                 | 800  |        |
| 10x12.5      | 680    | 0.12  | 0.24                | 613  | 470    | 0.12  | 0.24                 | 620  |        |
| 10x16        | 820    | 0.095 | 0.19                | 734  | 560    | 0.095 | 0.19                 | 734  |        |
| 10x20        | 1200   | 0.065 | 0.13                | 1010 | 1000   | 0.060 | 0.13                 | 1010 |        |
| 10x25        | 1500   | 0.55  | 0.11                | 1190 | 1200   | 0.055 | 0.11                 | 1190 |        |
| 10x30        | 2200   | 0.045 | 0.090               | 1440 | 1500   | 0.045 | 0.090                | 1440 |        |
| 12.5x15      | 1200   | 0.065 | 0.13                | 1010 | 1000   | 0.065 | 0.13                 | 1010 |        |
| 12.5x20      | 2200   | 0.042 | 0.084               | 1400 | 1800   | 0.042 | 0.084                | 1400 |        |
| 12.5x25      | 2700   | 0.038 | 0.076               | 1690 | 2200   | 0.038 | 0.072                | 1690 |        |
| 12.5x30      | 3900   | 0.032 | 0.064               | 1950 | 2700   | 0.032 | 0.064                | 1950 |        |
| 12.5x35      | 4700   | 0.028 | 0.056               | 2220 | 3300   | 0.028 | 0.056                | 2220 |        |
| 12.5x40      | 5600   | 0.026 | 0.052               | 2390 | 3900   | 0.025 | 0.050                | 2390 |        |
| 16x15        | 2700   | 0.046 | 0.092               | 1310 | 1800   | 0.046 | 0.092                | 1310 |        |
| 16x20        | 4700   | 0.034 | 0.068               | 1660 | 3300   | 0.034 | 0.068                | 1660 |        |
| 16x25        | 5600   | 0.028 | 0.056               | 2070 | 3900   | 0.028 | 0.056                | 2070 |        |
| 16x31.5      | 6800   | 0.025 | 0.050               | 2350 | 5600   | 0.025 | 0.050                | 2350 |        |
| 16x35.5      | 8200   | 0.022 | 0.044               | 2550 | 6800   | 0.022 | 0.044                | 2550 |        |
| 16x40        | 12000  | 0.020 | 0.040               | 2970 | 8200   | 0.020 | 0.040                | 2970 |        |
| 18x15        | 3300   | 0.043 | 0.086               | 1460 | 2200   | 0.043 | 0.086                | 1460 |        |
| 18x20        | 5600   | 0.030 | 0.060               | 1850 | 3900   | 0.030 | 0.060                | 1850 |        |
| 18x25        | 6800   | 0.027 | 0.054               | 2120 | 4700   | 0.027 | 0.054                | 2120 |        |
| 18x31.5      | 10000  | 0.023 | 0.046               | 2410 | 6800   | 0.023 | 0.046                | 2410 |        |
| 18x35.5      | 12000  | 0.019 | 0.038               | 2680 | 8200   | 0.019 | 0.038                | 2680 |        |
| 18x40        | 15000  | 0.018 | 0.036               | 3010 | 10000  | 0.018 | 0.036                | 3010 |        |

| ΦD×L<br>(mm) | VV (V) | 16    |                      |      | 25     |       |                      |      |        |
|--------------|--------|-------|----------------------|------|--------|-------|----------------------|------|--------|
|              |        | Cap   | Impedance (Ω)/100KHz |      | Ripple | Cap   | Impedance (Ω)/100KHz |      | Ripple |
|              |        | (μF)  | 20℃                  | -10℃ | mArms  | (μF)  | 20℃                  | -10℃ | mArms  |
| 5x11.5       | 56     | 0.65  | 1.3                  | 175  | 39     | 0.65  | 1.3                  | 175  |        |
| 5x15         | 82     | 0.46  | 0.92                 | 235  | 56     | 0.46  | 0.92                 | 235  |        |
| 6.3x11.5     | 120    | 0.31  | 0.62                 | 290  | 82     | 0.31  | 0.62                 | 290  |        |
| 6.3x15       | 180    | 0.20  | 0.40                 | 400  | 120    | 0.20  | 0.40                 | 400  |        |
| 8x12         | 270    | 0.17  | 0.34                 | 501  | 180    | 0.17  | 0.34                 | 503  |        |
| 8x15         | 330    | 0.13  | 0.26                 | 575  | 220    | 0.13  | 0.26                 | 575  |        |
| 8x20         | 470    | 0.095 | 0.19                 | 760  | 330    | 0.095 | 0.19                 | 751  |        |
| 10x12.5      | 330    | 0.13  | 0.26                 | 625  | 220    | 0.12  | 0.24                 | 629  |        |
| 10x16        | 390    | 0.090 | 0.18                 | 795  | 270    | 0.090 | 0.18                 | 795  |        |
| 10x20        | 680    | 0.065 | 0.13                 | 1010 | 470    | 0.065 | 0.13                 | 1010 |        |
| 10x25        | 820    | 0.055 | 0.11                 | 1190 | 560    | 0.055 | 0.11                 | 1190 |        |
| 10x30        | 1200   | 0.047 | 0.094                | 1430 | 820    | 0.045 | 0.090                | 1440 |        |
| 12.5x15      | 680    | 0.065 | 0.13                 | 1010 | 470    | 0.065 | 0.13                 | 1010 |        |
| 12.5x20      | 1200   | 0.042 | 0.084                | 1400 | 820    | 0.042 | 0.084                | 1400 |        |
| 12.5x25      | 1500   | 0.038 | 0.076                | 1690 | 1000   | 0.038 | 0.072                | 1690 |        |
| 12.5x30      | 2200   | 0.032 | 0.064                | 1950 | 1500   | 0.030 | 0.060                | 1950 |        |
| 12.5x35      | 2700   | 0.028 | 0.056                | 2200 | 1800   | 0.028 | 0.056                | 2200 |        |
| 12.5x40      | 3300   | 0.026 | 0.052                | 2390 | 2200   | 0.024 | 0.048                | 2390 |        |
| 16x15        | 1500   | 0.046 | 0.092                | 1340 | 820    | 0.046 | 0.092                | 1360 |        |
| 16x20        | 2200   | 0.034 | 0.068                | 1730 | 1500   | 0.034 | 0.068                | 1730 |        |
| 16x25        | 2700   | 0.028 | 0.056                | 2070 | 1800   | 0.028 | 0.056                | 2070 |        |
| 16x31.5      | 3900   | 0.025 | 0.050                | 2350 | 2700   | 0.025 | 0.050                | 2350 |        |
| 16x35.5      | 4700   | 0.022 | 0.044                | 2550 | 3300   | 0.022 | 0.044                | 2550 |        |
| 16x40        | 5600   | 0.020 | 0.040                | 2900 | 3900   | 0.020 | 0.040                | 2900 |        |
| 18x15        | 1500   | 0.043 | 0.086                | 1490 | 1200   | 0.043 | 0.086                | 1500 |        |
| 18x20        | 2700   | 0.030 | 0.060                | 1870 | 1800   | 0.036 | 0.072                | 1890 |        |
| 18x25        | 3900   | 0.027 | 0.054                | 2160 | 2700   | 0.027 | 0.054                | 2180 |        |
| 18x31.5      | 4700   | 0.023 | 0.046                | 2450 | 3300   | 0.023 | 0.046                | 2470 |        |
| 18x35.5      | 6800   | 0.019 | 0.038                | 2730 | 3900   | 0.019 | 0.038                | 2740 |        |
| 18x40        | 8200   | 0.018 | 0.036                | 3060 | 4700   | 0.018 | 0.036                | 3070 |        |