

# CD288/CD288H SERIES



## ALUMINUM ELECTROLYTIC CAPACITORS

- Load life of 1000 hours at 85°C
- CD 288H: Load life of 1000 hours at 105°C
- High frequency and low impedance



### SPECIFICATIONS

| Item                                                                                                               | Characteristics                                                                                                                                                                                                                                                                                                  |                                            |      |      |       |        |      |      |                   |    |    |    |    |    |    |     |         |      |      |      |      |      |      |      |      |      |
|--------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|------|------|-------|--------|------|------|-------------------|----|----|----|----|----|----|-----|---------|------|------|------|------|------|------|------|------|------|
| Operating Temperature Range(°C)                                                                                    | -40~+85(CD288H: -40~+105)                                                                                                                                                                                                                                                                                        | -25~+85(CD288H: -25~+105)                  |      |      |       |        |      |      |                   |    |    |    |    |    |    |     |         |      |      |      |      |      |      |      |      |      |
| Rated Voltage Range (V)                                                                                            | 10~100                                                                                                                                                                                                                                                                                                           | 160~250                                    |      |      |       |        |      |      |                   |    |    |    |    |    |    |     |         |      |      |      |      |      |      |      |      |      |
| Nominal capacitance range (μF)                                                                                     | 4.7~3300                                                                                                                                                                                                                                                                                                         |                                            |      |      |       |        |      |      |                   |    |    |    |    |    |    |     |         |      |      |      |      |      |      |      |      |      |
| Capacitance Tolerance(20°C,120Hz)                                                                                  | ±20%                                                                                                                                                                                                                                                                                                             |                                            |      |      |       |        |      |      |                   |    |    |    |    |    |    |     |         |      |      |      |      |      |      |      |      |      |
| Leakage current (μA)                                                                                               | I≤0.01CV (at 20°C ,after 2minutes)                                                                                                                                                                                                                                                                               | I≤0.03CV (at 20°C ,after 2minutes)         |      |      |       |        |      |      |                   |    |    |    |    |    |    |     |         |      |      |      |      |      |      |      |      |      |
|                                                                                                                    | C: Nominal Capacitance (μF) V: Rated Voltage (V)                                                                                                                                                                                                                                                                 |                                            |      |      |       |        |      |      |                   |    |    |    |    |    |    |     |         |      |      |      |      |      |      |      |      |      |
| Dissipation Factor(20°C,120Hz)                                                                                     | <table border="1"> <tr> <td>Rated Voltage (V)</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>100</td> <td>160~250</td> </tr> <tr> <td>tanδ</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.09</td> <td>0.08</td> <td>0.15</td> </tr> </table> |                                            |      |      |       |        |      |      | Rated Voltage (V) | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160~250 | tanδ | 0.20 | 0.16 | 0.14 | 0.12 | 0.10 | 0.09 | 0.08 | 0.15 |
|                                                                                                                    | Rated Voltage (V)                                                                                                                                                                                                                                                                                                | 10                                         | 16   | 25   | 35    | 50     | 63   | 100  | 160~250           |    |    |    |    |    |    |     |         |      |      |      |      |      |      |      |      |      |
| tanδ                                                                                                               | 0.20                                                                                                                                                                                                                                                                                                             | 0.16                                       | 0.14 | 0.12 | 0.10  | 0.09   | 0.08 | 0.15 |                   |    |    |    |    |    |    |     |         |      |      |      |      |      |      |      |      |      |
| when nominal capacitance is over 1000uF tanδ shall be added 0.02 to the listed value with increase of every 1000μF |                                                                                                                                                                                                                                                                                                                  |                                            |      |      |       |        |      |      |                   |    |    |    |    |    |    |     |         |      |      |      |      |      |      |      |      |      |
| Temperature Stability(120Hz)                                                                                       | Rated voltage (v)                                                                                                                                                                                                                                                                                                |                                            |      |      | 10~16 | 25~100 | 160  | 250  |                   |    |    |    |    |    |    |     |         |      |      |      |      |      |      |      |      |      |
|                                                                                                                    | Impedance Ratio                                                                                                                                                                                                                                                                                                  | Z-40°C/Z+20°C                              |      | 5    | 4     | -      | -    |      |                   |    |    |    |    |    |    |     |         |      |      |      |      |      |      |      |      |      |
| Z-25°C/Z+20°C                                                                                                      |                                                                                                                                                                                                                                                                                                                  | -                                          | -    | 4    | 7     |        |      |      |                   |    |    |    |    |    |    |     |         |      |      |      |      |      |      |      |      |      |
| Load Life(+85°C, CD288H:+105°C)                                                                                    | Time                                                                                                                                                                                                                                                                                                             | 1000 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(+85°C, CD288H:+105°C)                                                                                   | 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. |      |      |       |        |      |      |                   |    |    |    |    |    |    |     |         |      |      |      |      |      |      |      |      |      |
| After test: Rated voltage to be applied for 30 minutes, 24 to 48 hours before measurement.                         |                                                                                                                                                                                                                                                                                                                  |                                            |      |      |       |        |      |      |                   |    |    |    |    |    |    |     |         |      |      |      |      |      |      |      |      |      |

### DIMENSIONS

### MM

|        |                                  |      |     |
|--------|----------------------------------|------|-----|
|        | <b>Lead spacing and diameter</b> |      |     |
|        | ΦD±1.0                           | 12.5 | 16  |
| F±0.5  | 5.0                              | 7.5  | 7.5 |
| Φd±0.1 | 0.6                              | 0.8  |     |
| a      | 0~+2.0                           |      |     |

# CD288/CD288H SERIES



## ■ STANDARD RATINGS

| WV(V)             | 10                 |                         | 16                 |                         | 25                 |                         | 35                 |                         | 50                 |                         | 63                 |                         |
|-------------------|--------------------|-------------------------|--------------------|-------------------------|--------------------|-------------------------|--------------------|-------------------------|--------------------|-------------------------|--------------------|-------------------------|
| Cap<br>( $\mu$ F) | Size               | Impedance               | Size               | Impedance               | Size               | Impedance               | Size               | Impedance               | Size               | Impedance               | Size               | Impedance               |
|                   | $\Phi$ DxL<br>(mm) | Z( $\Omega$ )<br>100KHz | $\Phi$ DxL<br>(mm) | Z( $\Omega$ )<br>100KHz | $\Phi$ DxL<br>(mm) | Z( $\Omega$ )<br>100KHz | $\Phi$ DxL<br>(mm) | Z( $\Omega$ )<br>100KHz | $\Phi$ DxL<br>(mm) | Z( $\Omega$ )<br>100KHz | $\Phi$ DxL<br>(mm) | Z( $\Omega$ )<br>100KHz |
| 100               | -                  | -                       | -                  | -                       | -                  | -                       | -                  | -                       | -                  | -                       | 12.5X20            | 0.540                   |
| 150               | -                  | -                       | -                  | -                       | -                  | -                       | -                  | -                       | 12.5X20            | 0.410                   | 12.5X25            | 0.360                   |
| 220               | -                  | -                       | -                  | -                       | -                  | -                       | 12.5X20            | 0.350                   | 12.5X25            | 0.280                   | 16X25              | 0.245                   |
| 330               | -                  | -                       | -                  | -                       | 12.5X20            | 0.280                   | 12.5X25            | 0.230                   | 16X25              | 0.185                   | 16X31.5            | 0.160                   |
| 470               | -                  | -                       | 12.5X20            | 0.245                   | 12.5X25            | 0.200                   | 12.5X25            | 0.160                   | 16X31.5            | 0.130                   | 16X35.5            | 0.115                   |
| 680               | 12.5X20            | 0.200                   | 12.5X25            | 0.170                   | 16X25              | 0.135                   | 16X25              | 0.110                   | 16X35.5            | 0.092                   | 18X35.5            | 0.080                   |
| 1000              | 12.5X25            | 0.140                   | 16X25              | 0.125                   | 16X25              | 0.090                   | 16X35.5            | 0.080                   | 18X35.5            | 0.060                   | 18X40              | 0.055                   |
| 1500              | 16X25              | 0.090                   | 16X31.5            | 0.080                   | 16X35.5            | 0.060                   | 18X35.5            | 0.050                   | 18X40              | 0.040                   | -                  | -                       |
| 2200              | 16X31.5            | 0.065                   | 16X35.5            | 0.050                   | 18X35.5            | 0.040                   | 18X40              | 0.035                   | -                  | -                       | -                  | -                       |
| 3300              | 16X35.5            | 0.042                   | 18X35.5            | 0.035                   | 18X40              | 0.030                   | -                  | -                       | -                  | -                       | -                  | -                       |

| WV(V)         | 100            |                     | 160            |                     | 250            |                     |
|---------------|----------------|---------------------|----------------|---------------------|----------------|---------------------|
| Cap( $\mu$ F) | Size           | Impedance           | Size           | Impedance           | Size           | Impedance           |
|               | $\Phi$ DxL(mm) | Z( $\Omega$ )100KHz | $\Phi$ DxL(mm) | Z( $\Omega$ )100KHz | $\Phi$ DxL(mm) | Z( $\Omega$ )100KHz |
| 4.7           | -              | -                   | -              | -                   | 12.5X20        | 24.47               |
| 6.8           | -              | -                   | -              | -                   | 12.5X20        | 16.91               |
| 10            | -              | -                   | -              | -                   | 12.5X20        | 11.54               |
| 15            | -              | -                   | 12.5X20        | 5.13                | 12.5X25        | 7.69                |
| 22            | -              | -                   | 12.5X25        | 3.50                | 16X25          | 5.22                |
| 33            | -              | -                   | 16X25          | 2.33                | 16X31.5        | 3.48                |
| 47            | 12.5X20        | 1.63                | 16X31.5        | 1.64                | 16X35.5        | 2.44                |
| 68            | 12.5X25        | 1.13                | 16X35.5        | 1.13                | 18X35.5        | 1.69                |
| 100           | 16X25          | 0.77                | 18X35.5        | 0.77                | -              | -                   |
| 150           | 16X31.5        | 0.51                | 18X40          | 0.51                | -              | -                   |
| 220           | 16X35.5        | 0.35                | -              | -                   | -              | -                   |
| 330           | 18X35.5        | 0.23                | -              | -                   | -              | -                   |
| 470           | 18X40          | 0.16                | -              | -                   | -              | -                   |

■ The specific capacitance and case size are available on request.