

# KM (CD268/CD81)

- Wide temperature range, 105°C, Load life: 1000~2000 hours, small size, large capacity
- Used in VCD, DVD, color-TV, air conditioning circuits etc.
- Adapted to the ROHS directive (2002/95/EC).

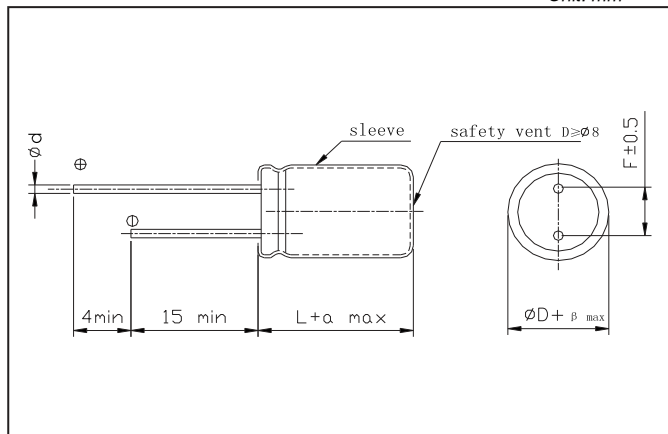


## Specifications

| Item  | Performance Characteristics   |  |          |          |          |          |          |      |           |     |           |       |        |         |     |     |              |    |     |         |             |          |          |          |              |          |          |          |          |      |   |   |
|---|---|--|----------|----------|----------|----------|----------|------|-----------|-----|-----------|-------|--------|---------|-----|-----|--------------|----|-----|---------|-------------|----------|----------|----------|--------------|----------|----------|----------|----------|------|---|---|
| Operating temperature range                               | -40 ~ +105°C  | -25 ~ +105°C                               |          |          |          |          |          |      |           |     |           |       |        |         |     |     |              |    |     |         |             |          |          |          |              |          |          |          |          |      |   |   |
| Rated voltage range                                       | 6.3 ~ 100V  | 160 ~ 450V                                 |          |          |          |          |          |      |           |     |           |       |        |         |     |     |              |    |     |         |             |          |          |          |              |          |          |          |          |      |   |   |
| Nominal capacitance range                                 | 0.1~10000 $\mu$ F   | 0.47~220 $\mu$ F                           |          |          |          |          |          |      |           |     |           |       |        |         |     |     |              |    |     |         |             |          |          |          |              |          |          |          |          |      |   |   |
| Capacitance tolerance                                     | $\pm 20\%$ (120Hz, +20°C)   |  |          |          |          |          |          |      |           |     |           |       |        |         |     |     |              |    |     |         |             |          |          |          |              |          |          |          |          |      |   |   |
| Leakage current   | $I \leq 0.01CV$ 3( $\mu$ A)<br>(at 20°C, after 2 minutes) (whichever is greater)  | $I \leq 0.02CV + 15$ ( $\mu$ A) (1 minute) |          |          |          |          |          |      |           |     |           |       |        |         |     |     |              |    |     |         |             |          |          |          |              |          |          |          |          |      |   |   |
| (tg $\delta$ )<br>Dissipation factor (+20°C, 120Hz)       | <table border="1"> <thead> <tr> <th><math>U_R</math> (V)</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>160~450</th> </tr> </thead> <tbody> <tr> <td>tg <math>\delta</math></td> <td>0.25</td> <td>0.20</td> <td>0.17</td> <td>0.15</td> <td>0.12</td> <td>0.10</td> <td>0.09</td> <td>0.08</td> <td>0.20</td> </tr> </tbody> </table>  |  |          |          |          |          |          |      |           |     | $U_R$ (V) | 6.3   | 10     | 16      | 25  | 35  | 50           | 63 | 100 | 160~450 | tg $\delta$ | 0.25     | 0.20     | 0.17     | 0.15         | 0.12     | 0.10     | 0.09     | 0.08     | 0.20 |   |   |
| $U_R$ (V)   | 6.3   | 10   | 16       | 25       | 35       | 50       | 63       | 100  | 160~450   |     |           |       |        |         |     |     |              |    |     |         |             |          |          |          |              |          |          |          |          |      |   |   |
| tg $\delta$   | 0.25  | 0.20                                       | 0.17     | 0.15     | 0.12     | 0.10     | 0.09     | 0.08 | 0.20      |     |           |       |        |         |     |     |              |    |     |         |             |          |          |          |              |          |          |          |          |      |   |   |
| Temperature characteristics<br>(Impedance ratio at 120Hz) | <table border="1"> <thead> <tr> <th><math>U_R</math> (V)</th> <th>6.3</th> <th>10</th> <th>16~50</th> <th>63~100</th> <th>160~250</th> <th>400</th> <th>450</th> </tr> </thead> <tbody> <tr> <td>Z-25°C/+20°C</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td><math>\leq 6</math></td> <td><math>\leq 4</math></td> <td><math>\leq 4</math></td> </tr> <tr> <td>Z-40°C/+20°C</td> <td><math>\leq 8</math></td> <td><math>\leq 6</math></td> <td><math>\leq 4</math></td> <td><math>\leq 3</math></td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table> |  |          |          |          |          |          |      | $U_R$ (V) | 6.3 | 10        | 16~50 | 63~100 | 160~250 | 400 | 450 | Z-25°C/+20°C | -  | -   | -       | -           | $\leq 6$ | $\leq 4$ | $\leq 4$ | Z-40°C/+20°C | $\leq 8$ | $\leq 6$ | $\leq 4$ | $\leq 3$ | -    | - | - |
| $U_R$ (V)   | 6.3   | 10   | 16~50    | 63~100   | 160~250  | 400      | 450      |      |           |     |           |       |        |         |     |     |              |    |     |         |             |          |          |          |              |          |          |          |          |      |   |   |
| Z-25°C/+20°C  | -   | -  | -        | -        | $\leq 6$ | $\leq 4$ | $\leq 4$ |      |           |     |           |       |        |         |     |     |              |    |     |         |             |          |          |          |              |          |          |          |          |      |   |   |
| Z-40°C/+20°C  | $\leq 8$  | $\leq 6$                                   | $\leq 4$ | $\leq 3$ | -        | -        | -        |      |           |     |           |       |        |         |     |     |              |    |     |         |             |          |          |          |              |          |          |          |          |      |   |   |
| Load life   | After applying rated voltage for 1000 hours ( $\geq 13$ 2000 hours) at +105°C and then resumed 16 hours:<br>Capacitance change : $\pm 20\%$ Initial measured value<br>Leakage current : $\leq$ Initial specified value<br>Dissipation factor : $\leq 2$ times Initial specified value   |  |          |          |          |          |          |      |           |     |           |       |        |         |     |     |              |    |     |         |             |          |          |          |              |          |          |          |          |      |   |   |
| Shelf life  | After storage for 1000 hours at +105°C and then resumed 16 hours<br>Capacitance change : $\pm 20\%$ Initial measured value<br>Leakage current : $\leq 2$ times Initial specified value<br>Dissipation factor : $\leq 2$ times Initial specified value   |  |          |          |          |          |          |      |           |     |           |       |        |         |     |     |              |    |     |         |             |          |          |          |              |          |          |          |          |      |   |   |

## Case size table

Unit: mm



|   |     |     |          |     |    |            |    |
|---|-----|-----|----------|-----|----|------------|----|
| D | 5   | 6   | 8        | 10  | 13 | 16, 18, 19 | 22 |
| F | 2.0 | 2.5 | 3.5      | 5.0 |    | 7.5        | 10 |
| d | 0.5 |     | 0.5, 0.6 | 0.6 |    | 0.8        |    |

|              |               |     |             |               |     |
|--------------|---------------|-----|-------------|---------------|-----|
| $\alpha$ MAX | (L < 20)      | 1.5 | $\beta$ MAX | (D < 20)      | 0.5 |
|              | (L $\geq$ 20) | 2.0 |             | (D $\geq$ 20) | 1.0 |

**Dimensions**

ØD × L(mm)

| C <sub>R</sub> (µF) | U <sub>R</sub><br>Code | 6.3V         |      | 10V          |      | 16V          |      | 25V          |      | 35V          |      | 50V          |      | 63V          |      |
|---------------------|------------------------|--------------|------|--------------|------|--------------|------|--------------|------|--------------|------|--------------|------|--------------|------|
|                     |                        | 0J           |      | 1A           |      | 1C           |      | 1E           |      | 1V           |      | 1H           |      | 1J           |      |
| 0.1                 | 0R1                    |              |      |              |      |              |      |              |      |              |      | 5x11         | 3    |              |      |
| 0.22                | R22                    |              |      |              |      |              |      |              |      |              |      | 5x11         | 4    |              |      |
| 0.33                | R33                    |              |      |              |      |              |      |              |      |              |      | 5x11         | 5    |              |      |
| 0.47                | R47                    |              |      |              |      |              |      |              |      |              |      | 5x11         | 6    |              |      |
| 1                   | 010                    |              |      |              |      |              |      |              |      |              |      | 5x11         | 9    |              |      |
| 2.2                 | 2R2                    |              |      |              |      |              |      |              |      |              |      | 5x11         | 11   |              |      |
| 3.3                 | 3R3                    |              |      |              |      |              |      |              |      |              |      | 5x11         | 15   |              |      |
| 4.7                 | 4R7                    |              |      |              |      |              |      |              |      |              |      | 5x11         | 18   | 5x11         | 20   |
| 10                  | 100                    |              |      |              |      | 5x11         | 20   | 5x11         | 25   | 5x11         | 25   | 5x11         | 25   | 5x11         | 30   |
| 22                  | 220                    |              |      |              |      | 5x11         | 30   | 5x11         | 35   | 5x11         | 35   | 5x11         | 40   | 6x11<br>8x11 | 50   |
| 33                  | 330                    |              |      |              |      | 5x11         | 40   | 5x11         | 40   | 5x11         | 50   | 6x11<br>8x11 | 60   | 8x11         | 60   |
| 47                  | 470                    |              |      | 5x11         | 45   | 5x11         | 50   | 5x11         | 50   | 6x11<br>8x11 | 65   | 6x11<br>8x11 | 70   | 8x12         | 90   |
| 100                 | 101                    | 5x11         | 60   | 5x11         | 80   | 6x11<br>8x11 | 80   | 6x11<br>8x11 | 90   | 8x12         | 110  | 8x12         | 120  | 10x13        | 150  |
| 220                 | 221                    | 6x11<br>8x11 | 100  | 6x11<br>8x11 | 110  | 8x12         | 140  | 8x12         | 150  | 10x13        | 190  | 10x16        | 240  | 10x20        | 270  |
| 330                 | 331                    | 8x11         | 120  | 8x12         | 160  | 8x12         | 180  | 10x13        | 220  | 10x16        | 260  | 10x20        | 320  | 13x20        | 380  |
| 470                 | 471                    | 8x12         | 170  | 8x12         | 190  | 10x13        | 250  | 10x16        | 290  | 10x20        | 350  | 13x20        | 430  | 13x25        | 500  |
| 1000                | 103                    | 10x13        | 300  | 10x16        | 360  | 10x20        | 440  | 13x20        | 540  | 13x25        | 620  | 16x25        | 790  | 16x31        | 900  |
| 2200                | 222                    | 13x20        | 580  | 13x20        | 620  | 13x25        | 700  | 16x25        | 880  | 16x31        | 1030 | 18(19)x35    | 1230 | 18(19)x40    | 1310 |
| 3300                | 332                    | 13x20        | 670  | 13x25        | 800  | 16x25        | 970  | 16x31        | 1120 | 18(19)x35    | 1320 | 18(19)x40    | 1400 | 22x40        | 1730 |
| 4700                | 472                    | 16x25        | 1000 | 16x25        | 1050 | 16x31        | 1240 | 18(19)x35    | 1440 | 18(19)x40    | 1540 | 22x40        | 1780 |              |      |
| 6800                | 682                    | 16x25        | 1120 | 16x31        | 1300 | 18(19)x35    | 1530 | 18(19)x40    | 1630 | 22x40        | 1880 |              |      |              |      |
| 10000               | 103                    | 18(19)x35    | 1320 | 18(19)x35    | 1620 | 18(19)x40    | 1730 | 22x40        | 2000 |              |      |              |      |              |      |

**Dimensions**

ØD × L(mm)

| C <sub>R</sub> (µF) | U <sub>R</sub><br>Code | 100V         |      | 160V      |     | 200   |     | 250V      |     | 400V           |     | 450V      |     |
|---------------------|------------------------|--------------|------|-----------|-----|-------|-----|-----------|-----|----------------|-----|-----------|-----|
|                     |                        | 2A           |      | 2C        |     | 2D    |     | 2E        |     | 2G             |     | 2H        |     |
| 0.1                 | 0R1                    | 5x11         | 3    |           |     |       |     |           |     |                |     |           |     |
| 0.22                | R22                    | 5x11         | 4    |           |     |       |     |           |     |                |     |           |     |
| 0.33                | R33                    | 5x11         | 5    |           |     |       |     |           |     |                |     |           |     |
| 0.47                | R47                    | 5x11         | 6    | 5x11      | 8   | 8x11  | 6   | 8x11      | 6   |                |     |           |     |
| 1                   | 010                    | 5x11         | 9    | 5x11      | 12  | 8x11  | 9   | 8x11      | 9   | 10x16          | 15  |           |     |
| 2.2                 | 2R2                    | 5x11         | 15   | 8x11      | 15  | 8x11  | 15  | 8x12      | 15  | 10x16          | 20  | 10x16     | 29  |
| 3.3                 | 3R3                    | 5x11         | 18   | 8x12      | 20  | 8x12  | 20  | 10x13     | 20  | 10x16<br>10x20 | 25  | 10x20     | 35  |
| 4.7                 | 4R7                    | 5x11         | 20   | 8x12      | 25  | 10x13 | 30  | 10x13     | 30  | 13x20<br>16x25 | 40  | 13x20     | 50  |
| 10                  | 100                    | 6x11<br>8x11 | 35   | 10x13     | 40  | 10x16 | 45  | 10x20     | 45  | 10x20<br>13x20 | 70  | 13x25     | 75  |
| 22                  | 220                    | 8x12         | 65   | 10x20     | 70  | 10x20 | 70  | 13x25     | 80  | 16x31          | 110 | 16x31     | 110 |
| 33                  | 330                    | 10x13        | 95   | 13x20     | 110 | 13x25 | 110 | 13x25     | 100 | 18(19)x35      | 180 | 18(19)x35 | 150 |
| 47                  | 470                    | 10x16        | 120  | 13x25     | 140 | 13x25 | 140 | 16x25     | 140 |                |     | 22x40     | 230 |
| 100                 | 101                    | 13x20        | 220  | 16x25     | 250 | 16x31 | 250 | 18(19)x35 | 260 |                |     |           |     |
| 220                 | 221                    | 16x25        | 420  | 18(19)x35 | 430 |       |     |           |     |                |     |           |     |
| 330                 | 331                    | 16x31        | 510  |           |     |       |     |           |     |                |     |           |     |
| 470                 | 471                    | 18(19)x31    | 680  |           |     |       |     |           |     |                |     |           |     |
| 1000                | 102                    | 18(19)x40    | 1200 |           |     |       |     |           |     |                |     |           |     |

Rated ripple current(mA, +105°C,120Hz)