

# DM (CD113/CD114)



- ⊙ Extremely low leakage current.
- ⊙ Used in TVs frequency channel conversion or weak signal import loop circuits.
- ⊙ Adapted to the ROHS directive (2002/95/EC).

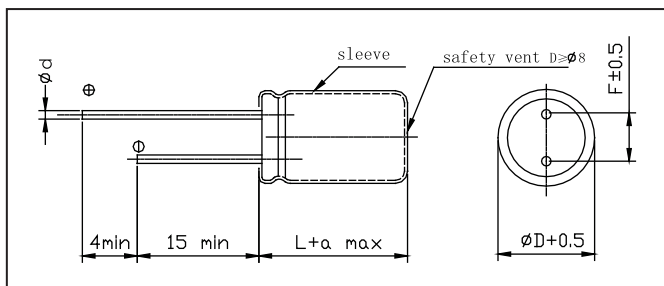
## Specifications

| Item  | Performance Characteristics  |           |      |      |      |      |      |      |     |     |              |    |      |      |      |      |      |      |      |              |   |   |   |   |   |   |   |   |
|---|--|-----------|------|------|------|------|------|------|-----|-----|--------------|----|------|------|------|------|------|------|------|--------------|---|---|---|---|---|---|---|---|
| Operating temperature range                               | -40°C ~ +85°C  |           |      |      |      |      |      |      |     |     |              |    |      |      |      |      |      |      |      |              |   |   |   |   |   |   |   |   |
| Rated voltage range                                       | 6.3 ~ 100 V  |           |      |      |      |      |      |      |     |     |              |    |      |      |      |      |      |      |      |              |   |   |   |   |   |   |   |   |
| Nominal capacitance range                                 | 0.1 ~ 3300 $\mu$ F   |           |      |      |      |      |      |      |     |     |              |    |      |      |      |      |      |      |      |              |   |   |   |   |   |   |   |   |
| Capacitance tolerance                                     | $\pm 20\%$ (100Hz, +20°C)  |           |      |      |      |      |      |      |     |     |              |    |      |      |      |      |      |      |      |              |   |   |   |   |   |   |   |   |
| Leakage current   | $I \leq 0.002CV$ 0.4( $\mu$ A) 2 (at 20°C, after 2 minutes) (whichever is greater)   |           |      |      |      |      |      |      |     |     |              |    |      |      |      |      |      |      |      |              |   |   |   |   |   |   |   |   |
| Dissipation factor (tg $\delta$ )<br>(+20°C, 100Hz)       | <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> </tr> </thead> <tbody> <tr> <td>tg<math>\delta</math></td> <td>28</td> <td>0.24</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.12</td> <td>0.10</td> </tr> </tbody> </table>   | $U_R$ (V) | 6.3  | 10   | 16   | 25   | 35   | 50   | 63  | 100 | tg $\delta$  | 28 | 0.24 | 0.20 | 0.16 | 0.14 | 0.12 | 0.12 | 0.10 |              |   |   |   |   |   |   |   |   |
|   | $U_R$ (V)  | 6.3       | 10   | 16   | 25   | 35   | 50   | 63   | 100 |     |              |    |      |      |      |      |      |      |      |              |   |   |   |   |   |   |   |   |
| tg $\delta$   | 28   | 0.24      | 0.20 | 0.16 | 0.14 | 0.12 | 0.12 | 0.10 |     |     |              |    |      |      |      |      |      |      |      |              |   |   |   |   |   |   |   |   |
| Temperature characteristics<br>(Impedance ratio at 100Hz) | <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> </tr> </thead> <tbody> <tr> <td>Z-25°C/+20°C</td> <td>4</td> <td>3</td> <td>2</td> <td>1.5</td> <td>1.5</td> <td>1.5</td> <td>1.5</td> <td>1.5</td> </tr> <tr> <td>Z-40°C/+20°C</td> <td>8</td> <td>6</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </tbody> </table> | $U_R$ (V) | 6.3  | 10   | 16   | 25   | 35   | 50   | 63  | 100 | Z-25°C/+20°C | 4  | 3    | 2    | 1.5  | 1.5  | 1.5  | 1.5  | 1.5  | Z-40°C/+20°C | 8 | 6 | 4 | 4 | 3 | 3 | 3 | 3 |
| $U_R$ (V)   | 6.3  | 10        | 16   | 25   | 35   | 50   | 63   | 100  |     |     |              |    |      |      |      |      |      |      |      |              |   |   |   |   |   |   |   |   |
| Z-25°C/+20°C  | 4  | 3         | 2    | 1.5  | 1.5  | 1.5  | 1.5  | 1.5  |     |     |              |    |      |      |      |      |      |      |      |              |   |   |   |   |   |   |   |   |
| Z-40°C/+20°C  | 8  | 6         | 4    | 4    | 3    | 3    | 3    | 3    |     |     |              |    |      |      |      |      |      |      |      |              |   |   |   |   |   |   |   |   |
| Load life   | <p>After applying rated voltage for 1000 hours at +85°C and then resumed 16 hours:</p> <p>Capacitance change : <math>\pm 20\%</math> Initial measured value</p> <p>Leakage current : <math>\leq</math> Initial specified value</p> <p>Dissipation factor : <math>\leq 2</math> times Initial specified value</p>   |           |      |      |      |      |      |      |     |     |              |    |      |      |      |      |      |      |      |              |   |   |   |   |   |   |   |   |
| Shelf life  | <p>After storage for 1000 hours at +85°C, <math>U_R</math> to be applied for 30 minutes and then resumed 16 hours</p> <p>Capacitance change : <math>\pm 20\%</math> Initial measured value</p> <p>Leakage current : <math>\leq 2</math> times Initial specified value</p> <p>Dissipation factor : <math>\leq 2</math> times Initial specified value</p>  |           |      |      |      |      |      |      |     |     |              |    |      |      |      |      |      |      |      |              |   |   |   |   |   |   |   |   |

Low Lc

## Case size table

Unit: mm



| D | 5   | 6   | 8        | 10  | 12  | 13  | 16 |
|---|-----|-----|----------|-----|-----|-----|----|
| F | 2.0 | 2.5 | 3.5      | 5.0 |     | 7.5 |    |
| d | 0.5 |     | 0.5, 0.6 |     | 0.6 |     |    |

|                |               |     |
|----------------|---------------|-----|
| $\alpha_{MAX}$ | (L < 20)      | 1.5 |
|                | (L $\leq$ 20) | 2.0 |

■ **Dimensions**

∅D × L(mm)

| $U_R$<br>$C_R$ (μF) / Code |     | 6.3   |      | 10V   |      | 16V   |      | 25V   |      |
|----------------------------|-----|-------|------|-------|------|-------|------|-------|------|
|                            |     | 0J    |      | 1A    |      | 1C    |      | 1E    |      |
| 4.7                        | 4R7 |       |      |       |      |       |      | 5×11  | 38   |
| 6.8                        | 6R8 |       |      |       |      | 5×11  | 36   | 5×11  | 47   |
| 10                         | 100 |       |      |       |      | 5×11  | 43   | 6×11  | 60   |
| 15                         | 150 |       |      |       |      | 5×11  | 53   | 6×11  | 72   |
| 22                         | 220 |       |      | 5×11  | 56   | 6×11  | 74   | 8×11  | 99   |
| 33                         | 330 |       |      | 6×11  | 79   | 6×11  | 90   | 8×11  | 119  |
| 47                         | 470 |       |      | 6×11  | 94   | 8×11  | 127  | 10×12 | 172  |
| 68                         | 680 |       |      | 6×11  | 113  | 8×11  | 153  | 10×12 | 207  |
| 100                        | 101 |       |      | 8×12  | 160  | 10×12 | 220  | 10×16 | 270  |
| 150                        | 151 | 8×12  | 183  | 10×12 | 236  | 10×16 | 296  | 10×20 | 368  |
| 220                        | 221 | 10×13 | 260  | 10×16 | 310  | 10×20 | 390  | 12×20 | 510  |
| 330                        | 331 | 10×16 | 350  | 10×20 | 420  | 12×20 | 550  | 12×25 | 680  |
| 470                        | 471 | 10×20 | 460  | 12×20 | 570  | 12×20 | 650  | 16×25 | 940  |
| 680                        | 681 | 10×20 | 554  | 12×20 | 686  | 12×25 | 895  | 16×31 | 1246 |
| 1000                       | 102 | 13×25 | 840  | 12×25 | 910  | 16×25 | 1210 | 16×35 | 1580 |
| 1500                       | 152 | 13×25 | 1029 | 16×25 | 1297 | 16×31 | 1623 |       |      |
| 2200                       | 222 | 16×25 | 1440 | 16×31 | 1710 | 16×35 | 2200 |       |      |
| 3300                       | 332 | 16×35 | 2037 | 16×35 | 2209 |       |      |       |      |

Low LC

| $U_R$<br>$C_R$ (μF) / Code |     | 35V   |      | 50V   |      | 63V   |      | 100V  |     |
|----------------------------|-----|-------|------|-------|------|-------|------|-------|-----|
|                            |     | 1V    |      | 1H    |      | 1J    |      | 2A    |     |
| 0.1                        | 0R1 |       |      | 5×11  | 6    |       |      |       |     |
| 0.15                       | R15 |       |      | 5×11  | 7    |       |      |       |     |
| 0.22                       | R22 |       |      | 5×11  | 8    |       |      |       |     |
| 0.33                       | R33 |       |      | 5×11  | 10   |       |      |       |     |
| 0.47                       | R47 |       |      | 5×11  | 12   |       |      |       |     |
| 0.68                       | R68 |       |      | 5×11  | 14   |       |      |       |     |
| 1.0                        | 010 |       |      | 5×11  | 17   |       |      |       |     |
| 1.5                        | 1R5 |       |      | 5×11  | 21   |       |      | 5×11  | 23  |
| 2.2                        | 2R2 |       |      | 5×11  | 26   |       |      | 6×11  | 30  |
| 3.3                        | 3R3 |       |      | 5×11  | 32   | 6×11  | 36   | 6×11  | 36  |
| 4.7                        | 4R7 | 5×11  | 34   | 6×11  | 43   | 6×11  | 43   | 8×11  | 51  |
| 6.8                        | 6R8 | 5×11  | 41   | 6×11  | 52   | 6×11  | 52   | 10×12 | 73  |
| 10                         | 100 | 6×11  | 57   | 8×11  | 75   | 8×11  | 75   | 10×16 | 97  |
| 15                         | 150 | 8×11  | 82   | 8×11  | 92   | 10×12 | 109  | 10×20 | 130 |
| 22                         | 220 | 8×11  | 99   | 10×12 | 131  | 10×16 | 144  | 10×20 | 158 |
| 33                         | 330 | 10×12 | 144  | 10×16 | 176  | 10×16 | 176  | 10×20 | 193 |
| 47                         | 470 | 10×12 | 172  | 10×16 | 210  | 10×20 | 230  | 12×25 | 288 |
| 68                         | 680 | 10×16 | 227  | 10×20 | 277  | 10×20 | 277  | 12×25 | 346 |
| 100                        | 101 | 10×20 | 300  | 12×20 | 380  | 12×25 | 420  | 16×25 | 488 |
| 150                        | 151 | 12×20 | 422  | 12×25 | 514  | 12×25 | 514  | 16×31 | 654 |
| 220                        | 221 | 12×25 | 550  | 16×25 | 720  | 16×31 | 792  |       |     |
| 330                        | 331 | 16×25 | 790  | 16×31 | 970  | 16×35 | 1018 |       |     |
| 470                        | 471 | 16×25 | 940  | 16×35 | 1210 |       |      |       |     |
| 680                        | 681 | 16×31 | 1246 |       |      |       |      |       |     |

└─── Rated ripple current(mA, +85 °C, 120Hz)