

Surface Mount Aluminum Electrolytic

CE Series

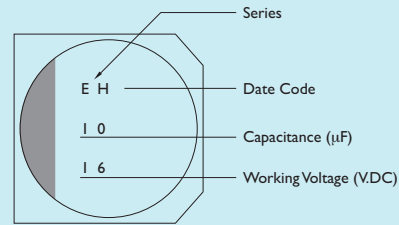


FEATURE

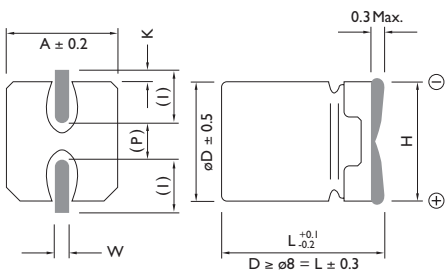
For General Purposes Series with 105°C 2000 Hours

Suitable for AV (TV, Video, Audio), Personal Computer, Home Appliance

MARKING



DIMENSIONS



() Reference Size

Unit : mm

| SIZE CODE | DØ | L | A | H | I | W | P | K |
|-----------|------|------|------|-----------|-----|------------|-----|--|
| B | 4.0 | 5.4 | 4.3 | 5.5 Max. | 1.8 | 0.65 ± 0.1 | 1.0 | 0.35 ^{+0.15} / _{-0.20} |
| C | 5.0 | 5.4 | 5.3 | 6.5 Max. | 2.2 | 0.65 ± 0.1 | 1.5 | 0.35 ^{+0.15} / _{-0.20} |
| D | 6.3 | 5.4 | 6.6 | 7.8 Max. | 2.6 | 0.65 ± 0.1 | 2.2 | 0.35 ^{+0.15} / _{-0.20} |
| E | 8.0 | 6.2 | 8.3 | 9.5 Max. | 3.4 | 0.65 ± 0.1 | 2.2 | 0.35 ^{+0.15} / _{-0.20} |
| F | 8.0 | 10.2 | 8.3 | 10.0 Max. | 3.4 | 0.90 ± 0.2 | 3.1 | 0.70 ± 0.20 |
| G | 10.0 | 10.2 | 10.3 | 12.0 Max. | 3.5 | 0.90 ± 0.2 | 4.6 | 0.70 ± 0.20 |

SPECIFICATION

| ITEM | CHARACTERISTIC | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|----------------|----------------|----------------|----------------|----------------|------|----|----|----------------|------|----------------|----------------|----------------|----------------|----------------|------|-------------|------|------|------|------|------|------|------|
| Operation Temperature Range | -40 to +105°C | | | | | | | | | | | | | | | | | | | | | | | | |
| Rated Working Voltage Range | 4 to 50V. DC | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Tolerance | ±20% (120Hz / +25°C) | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage Current (25°C) | Polarized : $I \leq 0.01CV$ or 3 (µA) Whichever is greater after 2 minutes application of DC rated working voltage at 25°C. I : Leakage Current (µA) C : Rated Capacitance (µF) V : Working Voltage (V) | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissipation Factor (tanδ) (120Hz / +25°C) | Polarized () : D.F. of Downsized <table border="1"> <thead> <tr> <th>WV (V)</th> <th>4</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> </tr> </thead> <tbody> <tr> <td>D.F. Ø4 ~ Ø6.3</td> <td>0.50</td> <td>0.30 (0.35)</td> <td>0.22 (0.26)</td> <td>0.16 (0.20)</td> <td>0.14 (0.18)</td> <td>0.12 (0.14)</td> <td>0.12</td> </tr> <tr> <td>Ø8 ~ Ø10</td> <td>0.40</td> <td>0.35</td> <td>0.26</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> </tr> </tbody> </table> | WV (V) | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | D.F. Ø4 ~ Ø6.3 | 0.50 | 0.30 (0.35) | 0.22 (0.26) | 0.16 (0.20) | 0.14 (0.18) | 0.12 (0.14) | 0.12 | Ø8 ~ Ø10 | 0.40 | 0.35 | 0.26 | 0.20 | 0.16 | 0.14 | 0.12 |
| WV (V) | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | | | | | | | | | | | | | | | | | | |
| D.F. Ø4 ~ Ø6.3 | 0.50 | 0.30 (0.35) | 0.22 (0.26) | 0.16 (0.20) | 0.14 (0.18) | 0.12 (0.14) | 0.12 | | | | | | | | | | | | | | | | | | |
| Ø8 ~ Ø10 | 0.40 | 0.35 | 0.26 | 0.20 | 0.16 | 0.14 | 0.12 | | | | | | | | | | | | | | | | | | |
| Low Temperature Stability | Impedance Ratio at 120Hz <table border="1"> <thead> <tr> <th>WV (V)</th> <th>4</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> </tr> </thead> <tbody> <tr> <td>-25 / +20°C</td> <td>7</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>-40 / +20°C</td> <td>15</td> <td>8</td> <td>6</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> </tr> </tbody> </table> | WV (V) | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | -25 / +20°C | 7 | 4 | 3 | 2 | 2 | 2 | 2 | -40 / +20°C | 15 | 8 | 6 | 4 | 4 | 3 | 3 |
| WV (V) | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | | | | | | | | | | | | | | | | | | |
| -25 / +20°C | 7 | 4 | 3 | 2 | 2 | 2 | 2 | | | | | | | | | | | | | | | | | | |
| -40 / +20°C | 15 | 8 | 6 | 4 | 4 | 3 | 3 | | | | | | | | | | | | | | | | | | |
| Load Life | After 2000 hours application of WV at 105°C, the capacitor shall meet following limits. Capacitance Change ≤ ±20% of Initial Value Dissipation Factor ≤ 200% of Initial Specified Value Leakage Current ≤ Initial Specified Value | | | | | | | | | | | | | | | | | | | | | | | | |
| Shelf Life | At +105°C no voltage application after 1000 hours and then through the aging treatment, the capacitor shall meet limits for load life characteristics. | | | | | | | | | | | | | | | | | | | | | | | | |

CASE SIZE & MAX RIPPLE CURRENT

Max. Ripple Current (mA) r.m.s. (120Hz / +105°C)

| POLARIZED | | | | | | | | | | | | | | | |
|-----------|------|-----------|----|------------|-----|------------------------|-----------|------------|-----------|------------------------|-----------|------------|-----------|------------|-----|
| µF | CODE | V (CODE) | | | | | | | | | | | | | |
| | | 4 (004) | | 6.3 (006) | | 10 (010) | | 16 (016) | | 25 (025) | | 35 (035) | | 50 (050) | |
| 0.1 | 0R10 | | | | | | | | | | | | 4.0 x 5.4 | 1 | |
| 0.22 | 0R22 | | | | | | | | | | | | 4.0 x 5.4 | 2 | |
| 0.33 | 0R33 | | | | | | | | | | | | 4.0 x 5.4 | 3 | |
| 0.47 | 0R47 | | | | | | | | | | | | 4.0 x 5.4 | 5 | |
| 1.0 | 1R00 | | | | | | | | | | | | 4.0 x 5.4 | 10 | |
| 2.2 | 2R20 | | | | | | | | | | | | 4.0 x 5.4 | 16 | |
| 3.3 | 3R30 | | | | | | | | | | | | 4.0 x 5.4 | 16 | |
| 4.7 | 4R70 | | | | | | | | 4.0 x 5.4 | 22 | | | 5.0 x 5.4 | 23 | |
| 6.8 | 0068 | | | | | | | | 4.0 x 5.4 | 25 | | | 5.0 x 5.4 | 23 | |
| 10 | 0010 | | | | | | 4.0 x 5.4 | 28 | 4.0 x 5.4 | 28 | 5.0 x 5.4 | 28 | 6.3 x 5.4 | 35 | |
| 22 | 0022 | | | 4.0 x 5.4 | 26 | | 5.0 x 5.4 | 39 | | | 6.3 x 5.4 | 55 | 8.0 x 6.2 | 70 | |
| 33 | 0033 | | | 4.0 x 5.4 | 29 | 5.0 x 5.4 | 43 | | | 6.3 x 5.4 | 65 | 8.0 x 6.2 | 84 | 8.0 x 10.2 | 91 |
| 47 | 0047 | 4.0 x 5.4 | 34 | 5.0 x 5.4 | 46 | | | 6.3 x 5.4 | 70 | 6.3 x 5.4 8.0 x 6.2 | 80 91 | 8.0 x 10.2 | 98 | 10 x 10.2 | 100 |
| 100 | 0100 | 5.0 x 5.4 | 61 | 6.3 x 5.4 | 71 | 6.3 x 5.4 8.0 x 6.2 | 70 110 | 8.0 x 10.2 | 120 | 8.0 x 10.2 | 130 | 10 x 10.2 | 160 | | |
| 150 | 0150 | 6.3 x 5.4 | 82 | | | | | | | | | | | | |
| 220 | 0220 | 6.3 x 5.4 | 82 | 8.0 x 10.2 | 150 | 8.0 x 10.2 | 160 | 10 x 10.2 | 210 | 10 x 10.2 | 190 | | | | |
| 330 | 0330 | | | 8.0 x 10.2 | 230 | | | 10 x 10.2 | 230 | | | | | | |
| 470 | 0470 | | | | | 10 x 10.2 | 270 | | | | | | | Size | R.C |



PARTS NUMBER SYSTEM

Example : 10 μ F, 16V

| | | | | | | | | |
|-------------|--------------|-----------|------------------|--------------|-----------|-----------|----------|-------------|
| CE | 016 | M | 0010 | R | E | B | - | 0405 |
| Series Name | Voltage Code | Tolerance | Capacitance Code | Package Code | Life Code | Size Code | | Case Code |

CAPACITANCE TOLERANCE

| | |
|---|------------|
| M | $\pm 20\%$ |
| K | $\pm 10\%$ |
| W | -5% ~ +20% |

LIFE CODE

| | |
|---|------------|
| E | 2000 Hours |
| S | 1000 Hours |
| R | Special |

SIZE CODE

| Size Code | A | B | C | D | E | F | G |
|----------------------|-----------|-----------|-----------|-----------|-----------|------------|-------------|
| D \varnothing (mm) | 3.0 x 5.4 | 4.0 x 5.4 | 5.0 x 5.4 | 6.3 x 5.4 | 8.0 x 6.2 | 8.0 x 10.2 | 10.0 x 10.2 |

CAPACITANCE CODE

| Capacitance | 0.1 | 0.22 | 0.33 | 0.47 | 1.0 | 2.2 | 3.3 | 4.7 | 6.8 | 10 | 22 | 33 | 47 | 100 | 220 | 330 | 470 | 1000 |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Code | 0R10 | 0R22 | 0R33 | 0R47 | 1R00 | 2R20 | 3R30 | 4R70 | 6R80 | 0010 | 0022 | 0033 | 0047 | 0100 | 0220 | 0330 | 0470 | 1000 |

VOLTAGE CODE

| Voltage | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Code | 004 | 006 | 010 | 016 | 025 | 035 | 050 | 063 | 100 |

PACKAGE CODE

R Embossed Plastic Tape Reel

CASE CODE

| | | | | | | | |
|------|-----------|------|------------|------|-------------|------|-----------|
| 0305 | 3.0 x 5.4 | 0405 | 4.0 x 5.4 | 05.5 | 5.0 x 5.4 | 0605 | 6.3 x 5.4 |
| 0806 | 8.0 x 6.2 | 0810 | 8.0 x 10.2 | 1010 | 10.0 x 10.2 | | |

Unit : mm

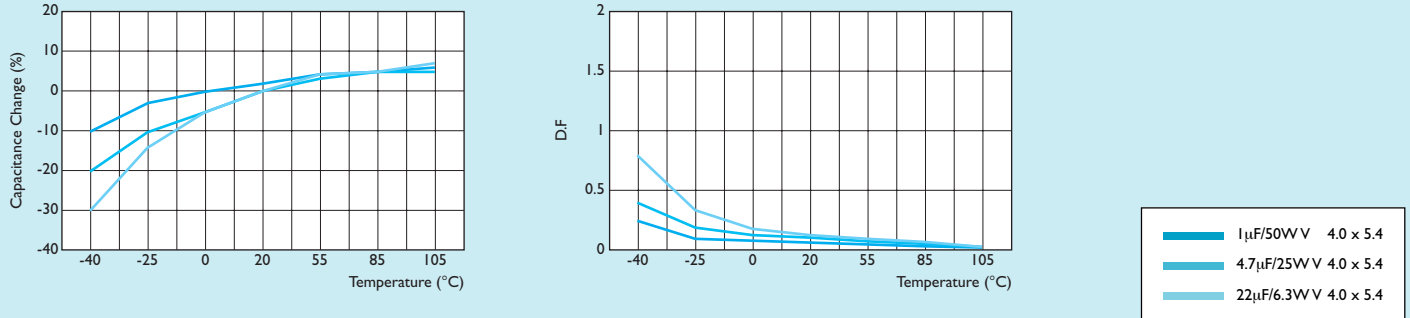
STANDARD PRODUCTS

| WV (VD.C) | CAP. (μ F) | SIZE (mm) | | PART NO. | D.F Max. 120 Hz | LEAKAGE CURRENT (μ A/2 Min.) Max. | RIPPLE CURRENT (mA) r.m.s. 120 Hz / 85°C |
|--------------|--------------------|-----------|------|--------------------|--------------------|---|---|
| | | DØ | L | | | | |
| 4 | 47 | 4 | 5.4 | CE004M0047REB-0405 | 0.50 | 34 | 34 |
| | 100 | 5 | 5.4 | CE004M0100REC-0505 | 0.50 | 4.0 | 61 |
| | 150 | 6.3 | 5.4 | CE004M0150RED-0605 | 0.50 | 6.0 | 82 |
| | 220 | 6.3 | 5.4 | CE004M0220RED-0605 | 0.50 | 8.8 | 82 |
| 6 | 22 | 4 | 5.4 | CE006M0022REB-0405 | 0.30 | 3.0 | 26 |
| | 33 | 4 | 5.4 | CE006M0033REB-0405 | 0.30 | 3.0 | 29 |
| | 47 | 5 | 5.4 | CE006M0047REC-0505 | 0.30 | 3.0 | 46 |
| | 100 | 6.3 | 5.4 | CE006M0100RED-0605 | 0.35 | 6.3 | 71 |
| | 220 | 8 | 10.2 | CE006M0220REF-0810 | 0.35 | 13.8 | 150 |
| | 330 | 8 | 10.2 | CE006M0330REF-0810 | 0.35 | 20.8 | 230 |
| 10 | 33 | 5 | 5.4 | CE010M0033REC-0505 | 0.22 | 3.3 | 43 |
| | 100 | 6.3 | 5.4 | CE010M0100RED-0605 | 0.26 | 10.0 | 70 |
| | 100 | 8 | 6.2 | CE010M0100REE-0806 | 0.22 | 10.0 | 110 |
| | 220 | 8 | 10.2 | CE010M0220REF-0810 | 0.26 | 22.0 | 160 |
| | 470 | 10 | 10.2 | CE010M0470REG-1010 | 0.26 | 47.0 | 270 |
| 16 | 10 | 4 | 5.4 | CE016M0010REB-0405 | 0.16 | 3.0 | 28 |
| | 22 | 5 | 5.4 | CE016M0022REC-0505 | 0.16 | 3.5 | 39 |
| | 47 | 6.3 | 5.4 | CE016M0047RED-0605 | 0.16 | 7.5 | 70 |
| | 100 | 6.3 | 5.4 | CE016M0100RED-0605 | 0.20 | 16.0 | 120 |
| | 220 | 10 | 10.2 | CE016M0220REG-1010 | 0.20 | 35.2 | 210 |
| | 330 | 10 | 10.2 | CE016M0330REG-1010 | 0.20 | 52.8 | 230 |
| 25 | 4.7 | 4 | 5.4 | CE025M4R70REB-0405 | 0.14 | 3.0 | 22 |
| | 6.8 | 4 | 5.4 | CE025M6R80REB-0405 | 0.14 | 3.0 | 25 |
| | 10 | 4 | 5.4 | CE025M0010REB-0405 | 0.14 | 3.0 | 28 |
| | 33 | 6.3 | 5.4 | CE025M0033RED-0605 | 0.14 | 8.2 | 65 |
| | 47 | 6.3 | 5.4 | CE025M0047RED-0605 | 0.18 | 11.7 | 80 |
| | 47 | 8 | 6.2 | CE025M0047REE-0806 | 0.16 | 11.7 | 91 |
| | 100 | 8 | 10.2 | CE025M0100REF-0810 | 0.16 | 25.0 | 130 |
| | 220 | 10 | 10.2 | CE025M0220REG-1010 | 0.16 | 55.0 | 190 |
| 35 | 10 | 5 | 5.4 | CE035M0010REC-0505 | 0.12 | 3.5 | 28 |
| | 22 | 6.3 | 5.4 | CE035M0022RED-0605 | 0.12 | 7.7 | 55 |
| | 33 | 8 | 6.2 | CE035M0033REE-0806 | 0.14 | 11.6 | 84 |
| | 47 | 8 | 10.2 | CE035M0047REF-0810 | 0.14 | 16.5 | 98 |
| | 100 | 10 | 10.2 | CE035M0100REG-1010 | 0.14 | 35.0 | 160 |
| 50 | 0.1 | 4 | 5.4 | CE050M0R10REB-0405 | 0.12 | 3.0 | 1 |
| | 0.22 | 4 | 5.4 | CE050M0R22REB-0405 | 0.12 | 3.0 | 2 |
| | 0.33 | 4 | 5.4 | CE050M0R33REB-0405 | 0.12 | 3.0 | 3 |
| | 0.47 | 4 | 5.4 | CE050M0R47REB-0405 | 0.12 | 3.0 | 5 |
| | 1 | 4 | 5.4 | CE050M1R00REB-0405 | 0.12 | 3.0 | 10 |
| | 2.2 | 4 | 5.4 | CE050M2R20REB-0405 | 0.12 | 3.0 | 16 |
| | 3.3 | 4 | 5.4 | CE050M3R30REB-0405 | 0.12 | 3.0 | 16 |
| | 4.7 | 5 | 5.4 | CE050M4R70REC-0505 | 0.12 | 3.0 | 23 |
| | 6.8 | 5 | 5.4 | CE050M6R80REC-0505 | 0.12 | 3.4 | 23 |
| | 10 | 6.3 | 5.4 | CE050M0010RED-0605 | 0.12 | 5.0 | 35 |
| | 22 | 8 | 6.2 | CE050M0022REE-0806 | 0.12 | 11.0 | 70 |
| | 33 | 8 | 10.2 | CE050M0033REF-0810 | 0.12 | 16.5 | 91 |
| | 47 | 10 | 10.2 | CE050M0047REG-1010 | 0.12 | 23.5 | 100 |

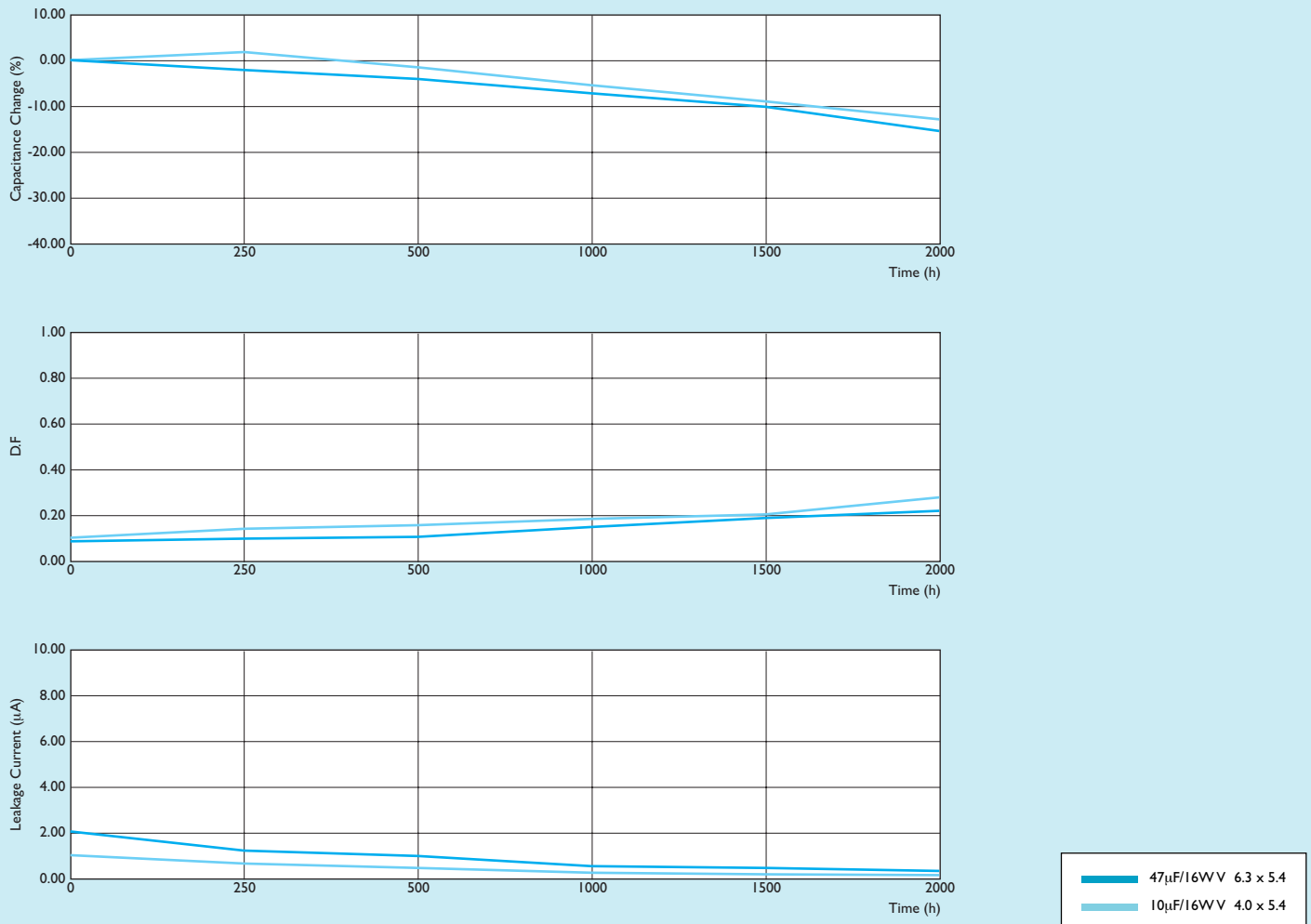
Note : Extended capacitance and voltage values as well as miniaturized products are available on request.



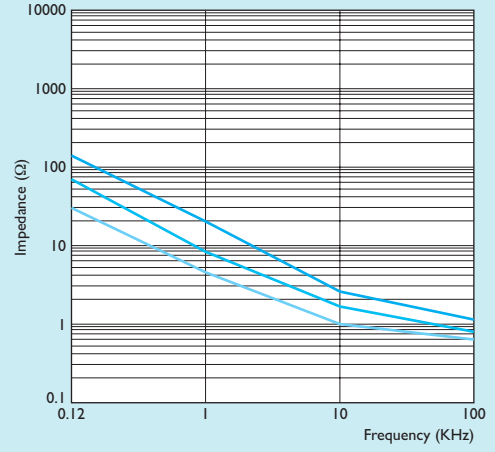
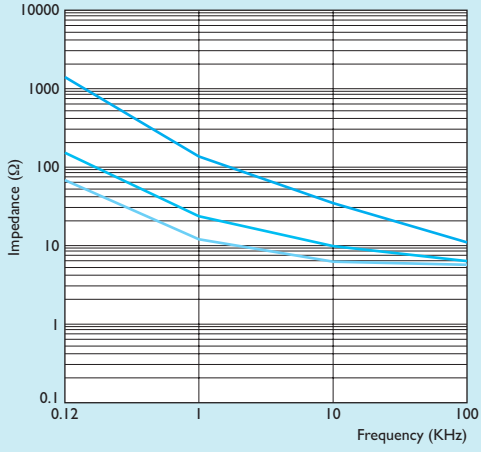
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