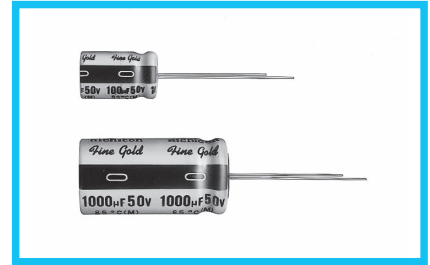


ALUMINUM ELECTROLYTIC CAPACITORS

UFG

High Grade Standard Type, For Audio Equipment



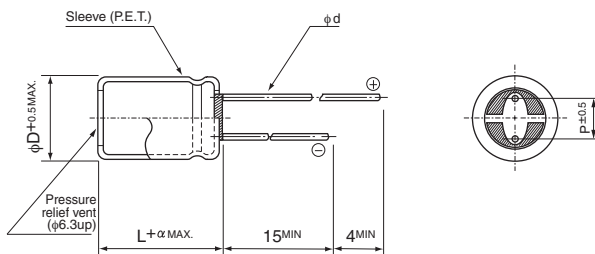
- "Fine Gold" MUSE acoustic series suited for high grade audio equipment, using state of the art etching techniques.
- Rich sound in the bass register and clearer high end, most suited for AV equipment.
- Compliant to the RoHS directive (2011/65/EU,(EU)2015/863).



Specifications

| Item | Performance Characteristics | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------|---|--------------------|--|------|------|------|------|------|------|-----|-----|--------------|------------------------|-----------------|------|------|------|------|------|------|------|---|---|-----------------|---|---|---|---|---|---|---|---|
| Category Temperature Range | -40 to +85°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rated Voltage Range | 6.3 to 100V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rated Capacitance Range | 1 to 10000µF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Tolerance | ±20% at 120Hz, 20°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage Current | After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3 (µA) , whichever is greater. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tangent of loss angle (tan δ) | Measurement frequency : 120Hz at 20°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <table border="1"> <tr> <th>Rated voltage (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>80</th> <th>100</th> </tr> <tr> <th>tan δ (MAX.)</th> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.09</td> <td>0.09</td> <td>0.08</td> </tr> </table> <p>For capacitance of more than 1000µF add 0.02 for every increase of 1000µF.</p> | Rated voltage (V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 80 | 100 | tan δ (MAX.) | 0.22 | 0.19 | 0.16 | 0.14 | 0.12 | 0.10 | 0.09 | 0.09 | 0.08 | | | | | | | | | | | |
| Rated voltage (V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 80 | 100 | | | | | | | | | | | | | | | | | | | | | | | |
| tan δ (MAX.) | 0.22 | 0.19 | 0.16 | 0.14 | 0.12 | 0.10 | 0.09 | 0.09 | 0.08 | | | | | | | | | | | | | | | | | | | | | | | |
| Stability at Low Temperature | Measurement frequency : 120Hz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <table border="1"> <tr> <th colspan="2">Rated voltage (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>80</th> <th>100</th> </tr> <tr> <th rowspan="2">Impedance ratio (MAX.)</th> <th>Z-25°C / Z+20°C</th> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <th>Z-40°C / Z+20°C</th> <td>8</td> <td>6</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </table> | Rated voltage (V) | | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 80 | 100 | Impedance ratio (MAX.) | Z-25°C / Z+20°C | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | Z-40°C / Z+20°C | 8 | 6 | 4 | 4 | 3 | 3 | 3 | 3 |
| Rated voltage (V) | | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 80 | 100 | | | | | | | | | | | | | | | | | | | | | | |
| Impedance ratio (MAX.) | Z-25°C / Z+20°C | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | | | | | | | | | | | | | | | | | | | | | |
| | Z-40°C / Z+20°C | 8 | 6 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | | | | | | | | | | | | | | | | | | | | | | |
| Endurance | The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 85°C. | Capacitance change | Within ±20% of the initial measurement for units of not more than 16V or φ6.3 Within ±15% of the initial measurement for units of not less than 25V or above φ6.3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | tan δ | 150% or less than the initial specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Leakage current | Less than or equal to the initial specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shelf Life | After storing the capacitors under no load at 85°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Marking | Printed with black color letter on gold sleeve. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

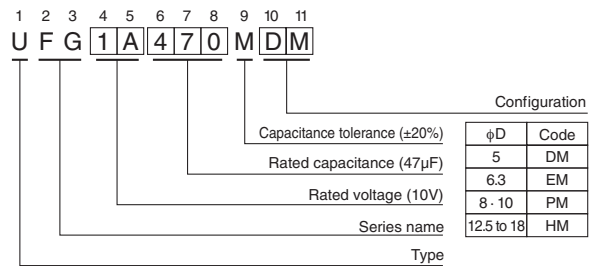
Radial Lead Type



| | (mm) | | | | | | |
|----|------|-----|-----|-----|------|-----|-----|
| φD | 5 | 6.3 | 8 | 10 | 12.5 | 16 | 18 |
| P | 2.0 | 2.5 | 3.5 | 5.0 | 5.0 | 7.5 | 7.5 |
| φd | 0.6 | 0.6 | 0.6 | 0.6 | 0.8 | 0.8 | 0.8 |

| | | |
|---|----------|-----|
| α | (L < 20) | 1.5 |
| | (L ≥ 20) | 2.0 |

Type numbering system (Example : 10V 47µF)



Frequency coefficient of rated ripple current

| Cap.(µF) | Frequency | | | | |
|---------------|-----------|-------|-------|------|---------------|
| | 50Hz | 120Hz | 300Hz | 1kHz | 10kHz or more |
| 1 to 47 | 0.75 | 1.00 | 1.35 | 1.57 | 2.00 |
| 100 to 470 | 0.80 | 1.00 | 1.23 | 1.34 | 1.50 |
| 1000 to 10000 | 0.85 | 1.00 | 1.10 | 1.13 | 1.15 |

• Please refer to page 18 about the end seal configuration.

• Dimension table in next page.



■ Dimensions

| Rated Voltage (V) (code) | Rated Capacitance (μF) | Case Size φD×L (mm) | tan δ | Leakage Current (μA) (at 20°C after 1 minute) | Rated Ripple (mArms) (85°C/120Hz) | Part Number |
|--------------------------|------------------------|---------------------|-------|---|-----------------------------------|-------------|
| 6.3 (0J) | 470 | 10×12.5 | 0.22 | 29.61 | 270 | UFG0J471MPM |
| | 1000 | 10×20 | 0.22 | 63 | 485 | UFG0J102MPM |
| | 2200 | 12.5×25 | 0.24 | 138.6 | 867 | UFG0J222MHH |
| | 3300 | 16×25 | 0.26 | 207.9 | 1135 | UFG0J332MHH |
| | 4700 | 16×31.5 | 0.28 | 296.1 | 1431 | UFG0J472MHH |
| | 6800 | 18×35.5 | 0.32 | 428.4 | 1810 | UFG0J682MHH |
| | 10000 | 18×40 | 0.40 | 630 | 2100 | UFG0J103MHH |
| 10 (1A) | 47 | 5×11 | 0.19 | 4.7 | 60 | UFG1A470MDM |
| | 100 | 6.3×11 | 0.19 | 10 | 99 | UFG1A101MEM |
| | 220 | 8×11.5 | 0.19 | 22 | 170 | UFG1A221MPM |
| | 330 | 10×12.5 | 0.19 | 33 | 247 | UFG1A331MPM |
| | 470 | 10×16 | 0.19 | 47 | 330 | UFG1A471MPM |
| | 1000 | 12.5×20 | 0.19 | 100 | 601 | UFG1A102MHH |
| | 2200 | 16×25 | 0.21 | 220 | 1047 | UFG1A222MHH |
| | 3300 | 16×31.5 | 0.23 | 330 | 1520 | UFG1A332MHH |
| | 4700 | 16×35.5 | 0.25 | 470 | 1840 | UFG1A472MHH |
| 16 (1C) | 33 | 5×11 | 0.16 | 5.28 | 57 | UFG1C330MDM |
| | 47 | 6.3×11 | 0.16 | 7.52 | 74 | UFG1C470MEM |
| | 100 | 8×11.5 | 0.16 | 16 | 128 | UFG1C101MPM |
| | 220 | 10×12.5 | 0.16 | 35.2 | 226 | UFG1C221MPM |
| | 330 | 10×16 | 0.16 | 52.8 | 309 | UFG1C331MPM |
| | 470 | 10×20 | 0.16 | 75.2 | 406 | UFG1C471MPM |
| | 1000 | 12.5×25 | 0.16 | 160 | 723 | UFG1C102MHH |
| | 2200 | 16×25 | 0.18 | 352 | 1290 | UFG1C222MHH |
| | 3300 | 16×35.5 | 0.20 | 528 | 1720 | UFG1C332MHH |
| 25 (1E) | 22 | 5×11 | 0.14 | 5.5 | 50 | UFG1E220MDM |
| | 33 | 6.3×11 | 0.14 | 8.25 | 70 | UFG1E330MEM |
| | 47 | 6.3×11 | 0.14 | 11.75 | 85 | UFG1E470MEM |
| | 100 | 8×11.5 | 0.14 | 25 | 140 | UFG1E101MPM |
| | 220 | 10×16 | 0.14 | 55 | 260 | UFG1E221MPM |
| | 330 | 10×20 | 0.14 | 82.5 | 351 | UFG1E331MPM |
| | 470 | 12.5×20 | 0.14 | 117.5 | 476 | UFG1E471MHH |
| | 1000 | 16×25 | 0.14 | 250 | 854 | UFG1E102MHH |
| | 2200 | 16×35.5 | 0.16 | 550 | 1570 | UFG1E222MHH |
| 35 (1V) | 3300 | 18×40 | 0.18 | 825 | 1794 | UFG1E332MHH |
| | 22 | 6.3×11 | 0.12 | 7.7 | 60 | UFG1V220MEM |
| | 33 | 6.3×11 | 0.12 | 11.55 | 75 | UFG1V330MEM |
| | 47 | 8×11.5 | 0.12 | 16.45 | 101 | UFG1V470MPM |
| | 100 | 10×12.5 | 0.12 | 35 | 176 | UFG1V101MPM |
| | 220 | 10×20 | 0.12 | 77 | 320 | UFG1V221MPM |
| | 330 | 12.5×20 | 0.12 | 115.5 | 446 | UFG1V331MHH |
| | 470 | 12.5×25 | 0.12 | 164.5 | 590 | UFG1V471MHH |
| | 1000 | 16×25 | 0.12 | 350 | 1060 | UFG1V102MHH |
| 2200 | 18×35.5 | 0.14 | 770 | 1840 | UFG1V222MHH | |

For cut leads, formed leads or taped parts, please add the appropriate code after the size code (12th digit).
If there is no size code in the part number, please add size code "1" and then add the appropriate code.

UFG

■ Dimensions

| Rated Voltage (V) (code) | Rated Capacitance (μF) | Case Size φD×L (mm) | tan δ | Leakage Current (μA) (at 20°C after 1 minute) | Rated Ripple (mArms) (85°C/120Hz) | Part Number |
|--------------------------|------------------------|---------------------|-------|---|-----------------------------------|-------------|
| 50 (1H) | 1 | 5×11 | 0.10 | 3 | 9 | UFG1H010MDM |
| | 2.2 | 5×11 | 0.10 | 3 | 18 | UFG1H2R2MDM |
| | 3.3 | 5×11 | 0.10 | 3 | 22 | UFG1H3R3MDM |
| | 4.7 | 5×11 | 0.10 | 3 | 27 | UFG1H4R7MDM |
| | 10 | 5×11 | 0.10 | 5 | 39 | UFG1H100MDM |
| | 22 | 6.3×11 | 0.10 | 11 | 65 | UFG1H220MEM |
| | 33 | 8×11.5 | 0.10 | 16.5 | 93 | UFG1H330MPM |
| | 47 | 8×11.5 | 0.10 | 23.5 | 111 | UFG1H470MPM |
| | 100 | 10×16 | 0.10 | 50 | 215 | UFG1H101MPM |
| | 220 | 12.5×20 | 0.10 | 110 | 390 | UFG1H221MHM |
| | 330 | 12.5×20 | 0.10 | 165 | 488 | UFG1H331MHM |
| | 470 | 16×25 | 0.10 | 235 | 650 | UFG1H471MHM |
| 1000 | 16×31.5 | 0.10 | 500 | 1143 | UFG1H102MHM | |
| 63 (1J) | 10 | 6.3×11 | 0.09 | 6.3 | 50 | UFG1J100MEM |
| | 22 | 8×11.5 | 0.09 | 13.86 | 85 | UFG1J220MPM |
| | 33 | 8×11.5 | 0.09 | 20.79 | 105 | UFG1J330MPM |
| | 47 | 10×12.5 | 0.09 | 29.61 | 140 | UFG1J470MPM |
| | 100 | 10×20 | 0.09 | 63 | 255 | UFG1J101MPM |
| | 220 | 12.5×20 | 0.09 | 138.6 | 420 | UFG1J221MHM |
| | 330 | 12.5×25 | 0.09 | 207.9 | 541 | UFG1J331MHM |
| | 470 | 16×25 | 0.09 | 296.1 | 840 | UFG1J471MHM |
| | 1000 | 18×35.5 | 0.09 | 630 | 1400 | UFG1J102MHM |
| 80 (1K) | 10 | 6.3×11 | 0.09 | 8 | 55 | UFG1K100MEM |
| | 22 | 8×11.5 | 0.09 | 17.6 | 100 | UFG1K220MPM |
| | 33 | 10×12.5 | 0.09 | 26.4 | 130 | UFG1K330MPM |
| | 47 | 10×16 | 0.09 | 37.6 | 170 | UFG1K470MPM |
| | 100 | 12.5×20 | 0.09 | 80 | 270 | UFG1K101MHM |
| | 220 | 12.5×25 | 0.09 | 176 | 490 | UFG1K221MHM |
| | 330 | 16×31.5 | 0.09 | 264 | 650 | UFG1K331MHM |
| | 470 | 16×35.5 | 0.09 | 376 | 920 | UFG1K471MHM |
| 100 (2A) | 1 | 5×11 | 0.08 | 3 | 15 | UFG2A010MDM |
| | 2.2 | 5×11 | 0.08 | 3 | 22 | UFG2A2R2MDM |
| | 3.3 | 5×11 | 0.08 | 3.3 | 27 | UFG2A3R3MDM |
| | 4.7 | 5×11 | 0.08 | 4.7 | 36 | UFG2A4R7MDM |
| | 10 | 8×11.5 | 0.08 | 10 | 65 | UFG2A100MPM |
| | 22 | 10×12.5 | 0.08 | 22 | 110 | UFG2A220MPM |
| | 33 | 10×16 | 0.08 | 33 | 150 | UFG2A330MPM |
| | 47 | 10×20 | 0.08 | 47 | 190 | UFG2A470MPM |
| | 100 | 12.5×20 | 0.08 | 100 | 300 | UFG2A101MHM |
| | 220 | 16×25 | 0.08 | 220 | 549 | UFG2A221MHM |
| | 330 | 16×31.5 | 0.08 | 330 | 734 | UFG2A331MHM |
| | 470 | 18×35.5 | 0.08 | 470 | 980 | UFG2A471MHM |

For cut leads, formed leads or taped parts, please add the appropriate code after the size code (12th digit).
If there is no size code in the part number, please add size code "1" and then add the appropriate code.

Please refer to page 18, 19 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.