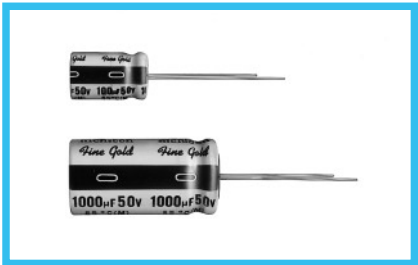


FG High Grade Standard Type, For Audio Equipment series



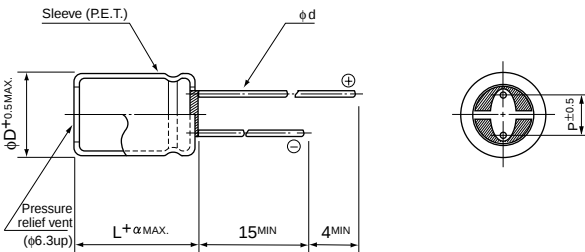
- "Fine Gold" MUSE acoustic series suited for high grade audio equipment, using state of the art etching techniques.
- Rich sound in the bass register and clearer high end, most suited for AV equipment like DVD, MD.
- Compliant to the RoHS directive (2002/95/EC).



Specifications

| Item                          | Performance Characteristics                                                                                                                                                                                                            |                 |                    |      |                                                                                                                                                                      |      |      |      |      |      |     |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|------|------|-----|
| Category Temperature Range    | −40 to +85°C                                                                                                                                                                                                                           |                 |                    |      |                                                                                                                                                                      |      |      |      |      |      |     |
| Rated Voltage Range           | 6.3 to 100V                                                                                                                                                                                                                            |                 |                    |      |                                                                                                                                                                      |      |      |      |      |      |     |
| Rated Capacitance Range       | 0.1 to 10000μF                                                                                                                                                                                                                         |                 |                    |      |                                                                                                                                                                      |      |      |      |      |      |     |
| Capacitance Tolerance         | ±20% at 120Hz, 20°C                                                                                                                                                                                                                    |                 |                    |      |                                                                                                                                                                      |      |      |      |      |      |     |
| Leakage Current               | After 1 minute's application of rated voltage, leakage current is not more than 0.01CV or 3 (μA) , whichever is greater.                                                                                                               |                 |                    |      |                                                                                                                                                                      |      |      |      |      |      |     |
| Tangent of loss angle (tan δ) | Measurement frequency : 120Hz, Temperature : 20°C                                                                                                                                                                                      |                 |                    |      |                                                                                                                                                                      |      |      |      |      |      |     |
|                               | 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 |     |
|                               | For capacitance of more than 1000μF add 0.02 for every increase of 1000μF.                                                                                                                                                             |                 |                    |      |                                                                                                                                                                      |      |      |      |      |      |     |
| Stability at Low Temperature  | Measurement frequency : 120Hz                                                                                                                                                                                                          |                 |                    |      |                                                                                                                                                                      |      |      |      |      |      |     |
|                               | Rated voltage (V)                                                                                                                                                                                                                      |                 | 6.3                | 10   | 16                                                                                                                                                                   | 25   | 35   | 50   | 63   | 80   | 100 |
|                               | Impedance ratio                                                                                                                                                                                                                        | Z−25°C / Z+20°C | 4                  | 3    | 2                                                                                                                                                                    | 2    | 2    | 2    | 2    | 2    | 2   |
|                               | ZT / Z20 (MAX.)                                                                                                                                                                                                                        | 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<br>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.                                                                                                                                                                                        |                 |                    |      |                                                                                                                                                                      |      |      |      |      |      |     |

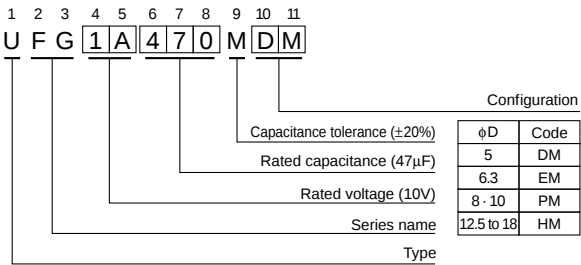
Radial Lead Type



|    | 5   | 6.3 | 8   | 10  | 12.5 | 16  | 18  |
|----|-----|-----|-----|-----|------|-----|-----|
| φD | 2.0 | 2.5 | 3.5 | 5.0 | 5.0  | 7.5 | 7.5 |
| 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<br>(L ≥ 20) 2.0 |
|---|------------------------------|

Type numbering system (Example : 10V 47µF)



• Please refer to page 20 about the end seal configuration.

Please refer to page 20, 21, 22 about the formed or taped product spec.  
Please refer to page 4 for the minimum order quantity.

• Dimension table in next page.

## ■Dimensions

| Cap.(μF) | V<br>Code | 6.3     |      | 10      |      | 16      |      | 25      |      | 35      |      | 50      |      |
|----------|-----------|---------|------|---------|------|---------|------|---------|------|---------|------|---------|------|
|          |           | 0J      |      | 1A      |      | 1C      |      | 1E      |      | 1V      |      | 1H      |      |
| 0.1      | 0R1       |         |      |         |      |         |      |         |      |         |      | 5×11    | 1.1  |
| 0.22     | R22       |         |      |         |      |         |      |         |      |         |      | 5×11    | 2.4  |
| 0.33     | R33       |         |      |         |      |         |      |         |      |         |      | 5×11    | 3.6  |
| 0.47     | R47       |         |      |         |      |         |      |         |      |         |      | 5×11    | 5.0  |
| 1        | 010       |         |      |         |      |         |      |         |      |         |      | 5×11    | 9.0  |
| 2.2      | 2R2       |         |      |         |      |         |      |         |      |         |      | 5×11    | 18   |
| 3.3      | 3R3       |         |      |         |      |         |      |         |      |         |      | 5×11    | 22   |
| 4.7      | 4R7       |         |      |         |      |         |      |         |      |         |      | 5×11    | 27   |
| 10       | 100       |         |      |         |      |         |      |         |      |         |      | 5×11    | 39   |
| 22       | 220       |         |      |         |      |         |      | 5×11    | 50   | 6.3×11  | 60   | 6.3×11  | 65   |
| 33       | 330       |         |      |         |      | 5×11    | 57   | 6.3×11  | 70   | 6.3×11  | 75   | 8×11.5  | 93   |
| 47       | 470       |         |      | 5×11    | 60   | 6.3×11  | 74   | 6.3×11  | 85   | 8×11.5  | 101  | 8×11.5  | 111  |
| 100      | 101       |         |      | 6.3×11  | 99   | 8×11.5  | 128  | 8×11.5  | 140  | 10×12.5 | 176  | 10×16   | 215  |
| 220      | 221       |         |      | 8×11.5  | 170  | 10×12.5 | 226  | 10×16   | 260  | 10×20   | 320  | 12.5×20 | 390  |
| 330      | 331       |         |      | 10×12.5 | 247  | 10×16   | 309  | 10×20   | 351  | 12.5×20 | 446  | 12.5×20 | 488  |
| 470      | 471       | 10×12.5 | 270  | 10×16   | 330  | 10×20   | 406  | 12.5×20 | 476  | 12.5×25 | 590  | 16×25   | 650  |
| 1000     | 102       | 10×20   | 485  | 12.5×20 | 601  | 12.5×25 | 723  | 16×25   | 854  | 16×25   | 1060 | 16×31.5 | 1143 |
| 2200     | 222       | 12.5×25 | 867  | 16×25   | 1047 | 16×25   | 1290 | 16×35.5 | 1570 | 18×35.5 | 1840 |         |      |
| 3300     | 332       | 16×25   | 1135 | 16×31.5 | 1520 | 16×35.5 | 1720 | 18×40   | 1794 |         |      |         |      |
| 4700     | 472       | 16×31.5 | 1431 | 16×35.5 | 1840 | 18×35.5 | 2140 |         |      |         |      |         |      |
| 6800     | 682       | 18×35.5 | 1810 | 18×40   | 2049 |         |      |         |      |         |      |         |      |
| 10000    | 103       | 18×40   | 2100 |         |      |         |      |         |      |         |      |         |      |

| Cap.(μF) | V<br>Code | 63      |      | 80      |     | 100                 |              |
|----------|-----------|---------|------|---------|-----|---------------------|--------------|
|          |           | 1J      |      | 1K      |     | 2A                  |              |
| 0.1      | 0R1       |         |      |         |     | 5×11                | 2.3          |
| 0.22     | R22       |         |      |         |     | 5×11                | 5.5          |
| 0.33     | R33       |         |      |         |     | 5×11                | 8.0          |
| 0.47     | R47       |         |      |         |     | 5×11                | 10           |
| 1        | 010       |         |      |         |     | 5×11                | 15           |
| 2.2      | 2R2       |         |      |         |     | 5×11                | 22           |
| 3.3      | 3R3       |         |      |         |     | 5×11                | 27           |
| 4.7      | 4R7       |         |      |         |     | 5×11                | 36           |
| 10       | 100       | 6.3×11  | 50   | 6.3×11  | 55  | 8×11.5              | 65           |
| 22       | 220       | 8×11.5  | 85   | 8×11.5  | 100 | 10×12.5             | 110          |
| 33       | 330       | 8×11.5  | 105  | 10×12.5 | 130 | 10×16               | 150          |
| 47       | 470       | 10×12.5 | 140  | 10×16   | 170 | 10×20               | 190          |
| 100      | 101       | 10×20   | 255  | 12.5×20 | 270 | 12.5×20             | 300          |
| 220      | 221       | 12.5×20 | 420  | 12.5×25 | 490 | 16×25               | 549          |
| 330      | 331       | 12.5×25 | 541  | 16×31.5 | 650 | 16×31.5             | 734          |
| 470      | 471       | 16×25   | 840  | 16×35.5 | 920 | 18×35.5             | 980          |
| 1000     | 102       | 18×35.5 | 1400 |         |     | Case size φD×L (mm) | Rated ripple |

Rated ripple current (mA rms) at 85°C 120Hz

## ●Frequency coefficient of rated ripple current

| Cap.(μF)      | Frequency | 50Hz | 120Hz | 300Hz | 1kHz | 10kHz or more |
|---------------|-----------|------|-------|-------|------|---------------|
| 0.1 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          |