

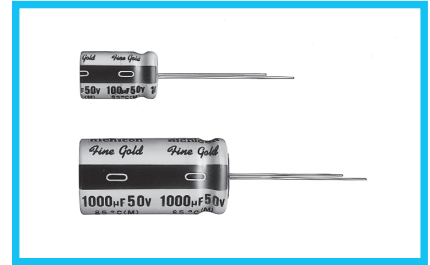


**THE DATASHEET OF
UFG1E220MDM**



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).

Valued marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

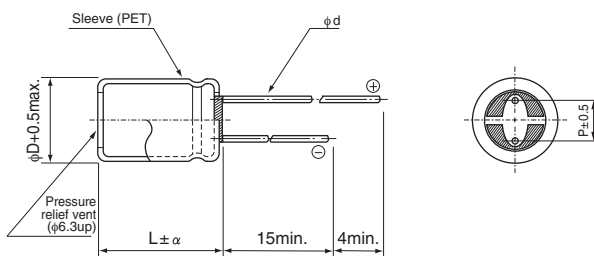


Specifications

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> <td>Rated voltage (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>80</td> <td>100</td> </tr> <tr> <td>tan δ (max.)</td> <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> <td>Rated voltage (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>80</td> <td>100</td> </tr> <tr> <td rowspan="2">Impedance ratio (max.)</td> <td>Z(-25°C) / Z(+20°C)</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z(-40°C) / Z(+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> </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	Z(-40°C) / Z(+20°C)	8	6	4	4	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																				
	Z(-40°C) / Z(+20°C)	8	6	4	4	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																											
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.																												
	Leakage current	Less than or equal to the initial specified value																											
Marking	Printed with black color letter on gold sleeve.																												

※ I : Leakage Current (µA), C : Rated Capacitance (µF), V : Rated Voltage (V)

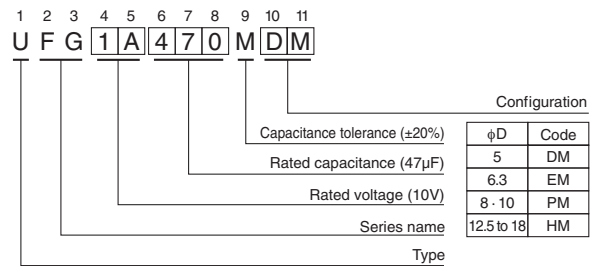
Radial Lead Type



	(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 the Guidelines for Aluminum Electrolytic Capacitors for end seal configuration information.

• Dimension table in next page.

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■ Dimensions

Rated Voltage (V) (code)	Rated Capacitance (μ F)	Case Size ϕ D \times L (mm)	$\tan \delta$	Leakage Current (μ A) (at 20°C after 1 minute)	Rated Ripple (mArms) (85°C/120Hz)	Part Number
6.3 (0J)	470	10 \times 12.5	0.22	29.61	270	UFG0J471MPM
	1000	10 \times 20	0.22	63	485	UFG0J102MPM
	2200	12.5 \times 25	0.24	138.6	867	UFG0J222MHH
	3300	16 \times 25	0.26	207.9	1135	UFG0J332MHH
	4700	16 \times 30.5	0.28	296.1	1431	UFG0J472MHH
	6800	18 \times 35.5	0.32	428.4	1810	UFG0J682MHH
	10000	18 \times 40	0.40	630	2100	UFG0J103MHH
10 (1A)	47	5 \times 11	0.19	4.7	60	※UFG1A470MDM
	100	6.3 \times 11	0.19	10	99	※UFG1A101MEM
	220	8 \times 11.5	0.19	22	170	UFG1A221MPM
	330	10 \times 12.5	0.19	33	247	UFG1A331MPM
	470	10 \times 16	0.19	47	330	UFG1A471MPM
	1000	12.5 \times 20	0.19	100	601	UFG1A102MHH
	2200	16 \times 25	0.21	220	1047	UFG1A222MHH
	3300	16 \times 30.5	0.23	330	1520	UFG1A332MHH
16 (1C)	4700	16 \times 35.5	0.25	470	1840	UFG1A472MHH
	6800	18 \times 40	0.29	680	2049	UFG1A682MHH
	33	5 \times 11	0.16	5.28	57	※UFG1C330MDM
	47	6.3 \times 11	0.16	7.52	74	※UFG1C470MEM
	100	8 \times 11.5	0.16	16	128	UFG1C101MPM
	220	10 \times 12.5	0.16	35.2	226	UFG1C221MPM
	330	10 \times 16	0.16	52.8	309	UFG1C331MPM
	470	10 \times 20	0.16	75.2	406	UFG1C471MPM
	1000	12.5 \times 25	0.16	160	723	UFG1C102MHH
25 (1E)	2200	16 \times 25	0.18	352	1290	UFG1C222MHH
	3300	16 \times 35.5	0.20	528	1720	UFG1C332MHH
	4700	18 \times 35.5	0.22	752	2140	UFG1C472MHH
	22	5 \times 11	0.14	5.5	50	※UFG1E220MDM
	33	6.3 \times 11	0.14	8.25	70	※UFG1E330MEM
	47	6.3 \times 11	0.14	11.75	85	※UFG1E470MEM
	100	8 \times 11.5	0.14	25	140	UFG1E101MPM
	220	10 \times 16	0.14	55	260	UFG1E221MPM
	330	10 \times 20	0.14	82.5	351	UFG1E331MPM
35 (1V)	470	12.5 \times 20	0.14	117.5	476	UFG1E471MHH
	1000	16 \times 25	0.14	250	854	UFG1E102MHH
	2200	16 \times 35.5	0.16	550	1570	UFG1E222MHH
	3300	18 \times 40	0.18	825	1794	UFG1E332MHH
	22	6.3 \times 11	0.12	7.7	60	※UFG1V220MEM
	33	6.3 \times 11	0.12	11.55	75	※UFG1V330MEM
	47	8 \times 11.5	0.12	16.45	101	UFG1V470MPM
	100	10 \times 12.5	0.12	35	176	UFG1V101MPM
	220	10 \times 20	0.12	77	320	UFG1V221MPM
35 (1V)	330	12.5 \times 20	0.12	115.5	446	UFG1V331MHH
	470	12.5 \times 25	0.12	164.5	590	UFG1V471MHH
	1000	16 \times 25	0.12	350	1060	UFG1V102MHH
	2200	18 \times 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.

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■ 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	16×30.5	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	16×30.5	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	16×30.5	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.

• For formed lead or taped product specifications and minimum order quantity, please refer to the Guidelines for Aluminum Electrolytic Capacitors.







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