

ALUMINUM ELECTROLYTIC CAPACITORS

UKW

Standard, For Audio Equipment



- Realization of a harmonious balance of sound quality, made possible by the development of new electrolyte.
- Most suited for AV equipment.
- Compliant to the RoHS directive (2011/65/EU,(EU)2015/863).

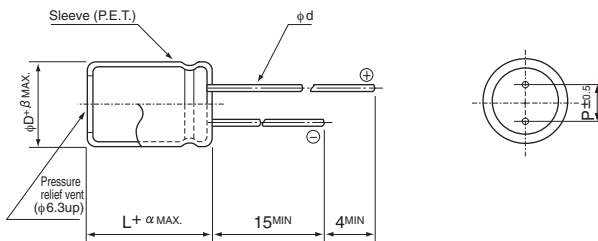
UKW



Specifications

| Item | Performance Characteristics | | | | | | | | | | |
|---|--|---|------|------|------|------|------|------|------|---------------------------------------|-------------------------------|
| Category Temperature Range | -40 to +85°C | | | | | | | | | | |
| Rated Voltage Range | 6.3 to 100V | | | | | | | | | | |
| Rated Capacitance Range | 2.2 to 33000μF | | | | | | | | | | |
| 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 0.03 CV or 4 (μA) , whichever is greater. After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01 CV or 3 (μA) , whichever is greater. | | | | | | | | | | |
| Tangent of loss angle (tan δ) | Rated voltage (V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | Measurement frequency : 120Hz at 20°C | |
| | tan δ (MAX.) | 0.28 | 0.24 | 0.20 | 0.16 | 0.14 | 0.12 | 0.10 | 0.08 | | |
| For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF. | | | | | | | | | | | |
| Stability at Low Temperature | Rated voltage (V) | | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | Measurement frequency : 120Hz |
| | Impedance ratio (MAX.) | Z-25°C / Z+20°C | 5 | 4 | 3 | 2 | 2 | 2 | 2 | 2 | |
| | | Z-40°C / Z+20°C | 12 | 10 | 8 | 5 | 4 | 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 2000 hours at 85°C. | | | | | | | | | | |
| | Capacitance change | Within ±20% of the initial capacitance value | | | | | | | | | |
| | tan δ | 200% 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 gold color letter on black sleeve. | | | | | | | | | | |

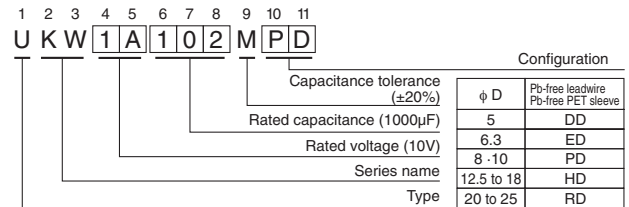
Radial Lead Type



| | (mm) | | | | | | | | | |
|----|------|-----|-----|-----|------|-----|-----|-----|-----|------|
| φD | 5 | 6.3 | 8 | 10 | 12.5 | 16 | 18 | 20 | 22 | 25 |
| P | 2.0 | 2.5 | 3.5 | 5.0 | 5.0 | 7.5 | 7.5 | 10 | 10 | 12.5 |
| φd | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.8 | 0.8 | 1.0 | 1.0 | 1.0 |
| β | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 1.0 | 1.0 |

| | | |
|---|---------|-----|
| α | φD < 20 | 1.5 |
| | φD ≥ 20 | 2.0 |

Type numbering system (Example : 10V 1000μF)



| Configuration | |
|---------------|--|
| φ D | Pb-free leadwire Pb-free PET sleeve |
| 5 | DD |
| 6.3 | ED |
| 8 · 10 | PD |
| 12.5 to 18 | HD |
| 20 to 25 | RD |

- Please refer to the Guidelines for Aluminum Electrolytic Capacitors for end seal configuration information.

Frequency coefficient of rated ripple current

| Cap.(μF) | Frequency | 50Hz | 120Hz | 300Hz | 1kHz | 10kHz or more |
|---------------|-----------|------|-------|-------|------|---------------|
| 2.2 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 33000 | | 0.85 | 1.00 | 1.10 | 1.13 | 1.15 |

● Dimension table in next page.

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■ Dimensions

| Rated Voltage (V) (code) | Rated Capacitance (μ F) | Case Size ϕ D×L (mm) | tan δ | Leakage Current (μ A) | | Rated Ripple (mArms) (85°C/120Hz) | Part Number |
|--------------------------------|---------------------------------|------------------------------|--------------|-------------------------------|----------------------------|---|-------------|
| | | | | at 20°C after 1 minute | at 20°C after 2 minutes | | |
| 6.3 (0J) | 330 | 6.3×11 | 0.28 | 62.37 | 20.79 | 265 | UKW0J331MED |
| | 470 | 6.3×11 | 0.28 | 88.83 | 29.61 | 310 | UKW0J471MED |
| | 1000 | 8×11.5 | 0.28 | 189 | 63 | 530 | UKW0J102MPD |
| | 2200 | 10×20 | 0.30 | 415.8 | 138.6 | 980 | UKW0J222MPD |
| | 3300 | 10×20 | 0.32 | 623.7 | 207.9 | 1170 | UKW0J332MPD |
| | 4700 | 12.5×20 | 0.34 | 888.3 | 296.1 | 1350 | UKW0J472MHD |
| | 6800 | 12.5×25 | 0.38 | 1285.2 | 428.4 | 1600 | UKW0J682MHD |
| | 10000 | 16×25 | 0.46 | 1890 | 630 | 2000 | UKW0J103MHD |
| | 15000 | 16×35.5 | 0.56 | 2835 | 945 | 2550 | UKW0J153MHD |
| | 22000 | 18×40 | 0.70 | 4158 | 1386 | 3200 | UKW0J223MHD |
| 33000 | 22×50 | 0.92 | 6237 | 2079 | 3900 | UKW0J333MRD | |
| 10 (1A) | 100 | 5×11 | 0.24 | 30 | 10 | 145 | UKW1A101MDD |
| | 220 | 6.3×11 | 0.24 | 66 | 22 | 230 | UKW1A221MED |
| | 330 | 6.3×11 | 0.24 | 99 | 33 | 270 | UKW1A331MED |
| | 470 | 6.3×11 | 0.24 | 141 | 47 | 330 | UKW1A471MED |
| | 1000 | 10×12.5 | 0.24 | 300 | 100 | 630 | UKW1A102MPD |
| | 2200 | 10×20 | 0.26 | 660 | 220 | 1050 | UKW1A222MPD |
| | 3300 | 12.5×20 | 0.28 | 990 | 330 | 1420 | UKW1A332MHD |
| | 4700 | 12.5×25 | 0.30 | 1410 | 470 | 1800 | UKW1A472MHD |
| | 6800 | 16×25 | 0.34 | 2040 | 680 | 2150 | UKW1A682MHD |
| | 10000 | 16×35.5 | 0.42 | 3000 | 1000 | 2500 | UKW1A103MHD |
| | 15000 | 18×35.5 | 0.52 | 4500 | 1500 | 2720 | UKW1A153MHD |
| | 22000 | 20×40 | 0.66 | 6600 | 2200 | 3700 | UKW1A223MRD |
| 33000 | 22×50 | 0.88 | 9900 | 3300 | 4500 | UKW1A333MRD | |
| 16 (1C) | 100 | 5×11 | 0.20 | 48 | 16 | 155 | UKW1C101MDD |
| | 220 | 6.3×11 | 0.20 | 105.6 | 35.2 | 250 | UKW1C221MED |
| | 330 | 8×11.5 | 0.20 | 158.4 | 52.8 | 360 | UKW1C331MPD |
| | 470 | 8×11.5 | 0.20 | 225.6 | 75.2 | 420 | UKW1C471MPD |
| | 1000 | 10×16 | 0.20 | 480 | 160 | 770 | UKW1C102MPD |
| | 2200 | 12.5×20 | 0.22 | 1056 | 352 | 1250 | UKW1C222MHD |
| | 3300 | 12.5×25 | 0.24 | 1584 | 528 | 1700 | UKW1C332MHD |
| | 4700 | 16×25 | 0.26 | 2256 | 752 | 2100 | UKW1C472MHD |
| | 6800 | 16×35.5 | 0.30 | 3264 | 1088 | 2500 | UKW1C682MHD |
| | 10000 | 18×35.5 | 0.38 | 4800 | 1600 | 2640 | UKW1C103MHD |
| | 15000 | 20×40 | 0.48 | 7200 | 2400 | 3400 | UKW1C153MRD |
| | 22000 | 22×50 | 0.62 | 10560 | 3520 | 4200 | UKW1C223MRD |
| | 33000 | 25×50 | 0.84 | 15840 | 5280 | 4800 | UKW1C333MRD |

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.

UKW

■ Dimensions

| Rated Voltage (V) (code) | Rated Capacitance (μ F) | Case Size ϕ D×L (mm) | tan δ | Leakage Current (μ A) | | Rated Ripple (mArms) (85°C/120Hz) | Part Number |
|--------------------------------|---------------------------------|------------------------------|--------------|-------------------------------|----------------------------|---|-------------|
| | | | | at 20°C after 1 minute | at 20°C after 2 minutes | | |
| 25 (1E) | 47 | 5×11 | 0.16 | 35.25 | 11.75 | 115 | UKW1E470MDD |
| | 100 | 6.3×11 | 0.16 | 75 | 25 | 185 | UKW1E101MED |
| | 220 | 8×11.5 | 0.16 | 165 | 55 | 320 | UKW1E221MPD |
| | 330 | 10×12.5 | 0.16 | 247.5 | 82.5 | 420 | UKW1E331MPD |
| | 470 | 10×12.5 | 0.16 | 352.5 | 117.5 | 530 | UKW1E471MPD |
| | 1000 | 10×20 | 0.16 | 750 | 250 | 950 | UKW1E102MPD |
| | 2200 | 12.5×25 | 0.18 | 1650 | 550 | 1550 | UKW1E222MHD |
| | 3300 | 16×25 | 0.20 | 2475 | 825 | 1950 | UKW1E332MHD |
| | 4700 | 16×31.5 | 0.22 | 3525 | 1175 | 2360 | UKW1E472MHD |
| | 6800 | 18×35.5 | 0.26 | 5100 | 1700 | 2590 | UKW1E682MHD |
| | 10000 | 20×40 | 0.34 | 7500 | 2500 | 3000 | UKW1E103MRD |
| | 15000 | 22×50 | 0.44 | 11250 | 3750 | 3800 | UKW1E153MRD |
| 22000 | 25×50 | 0.58 | 16500 | 5500 | 4500 | UKW1E223MRD | |
| 35 (1V) | 33 | 5×11 | 0.14 | 34.65 | 11.55 | 105 | UKW1V330MDD |
| | 47 | 5×11 | 0.14 | 49.35 | 16.45 | 120 | UKW1V470MDD |
| | 100 | 6.3×11 | 0.14 | 105 | 35 | 200 | UKW1V101MED |
| | 220 | 10×12.5 | 0.14 | 231 | 77 | 370 | UKW1V221MPD |
| | 330 | 10×12.5 | 0.14 | 346.5 | 115.5 | 470 | UKW1V331MPD |
| | 470 | 10×16 | 0.14 | 493.5 | 164.5 | 630 | UKW1V471MPD |
| | 1000 | 12.5×20 | 0.14 | 1050 | 350 | 1100 | UKW1V102MHD |
| | 2200 | 16×25 | 0.16 | 2310 | 770 | 1800 | UKW1V222MHD |
| | 3300 | 16×35.5 | 0.18 | 3465 | 1155 | 2220 | UKW1V332MHD |
| | 4700 | 18×35.5 | 0.20 | 4935 | 1645 | 2490 | UKW1V472MHD |
| | 6800 | 20×40 | 0.24 | 7140 | 2380 | 3000 | UKW1V682MRD |
| | 10000 | 22×50 | 0.32 | 10500 | 3500 | 3700 | UKW1V103MRD |
| 15000 | 25×50 | 0.42 | 15750 | 5250 | 4300 | UKW1V153MRD | |
| 50 (1H) | 2.2 | 5×11 | 0.12 | 4 | 3 | 23 | UKW1H2R2MDD |
| | 3.3 | 5×11 | 0.12 | 4.95 | 3 | 35 | UKW1H3R3MDD |
| | 4.7 | 5×11 | 0.12 | 7.05 | 3 | 40 | UKW1H4R7MDD |
| | 10 | 5×11 | 0.12 | 15 | 5 | 65 | UKW1H100MDD |
| | 22 | 5×11 | 0.12 | 33 | 11 | 95 | UKW1H220MDD |
| | 33 | 5×11 | 0.12 | 49.5 | 16.5 | 120 | UKW1H330MDD |
| | 47 | 6.3×11 | 0.12 | 70.5 | 23.5 | 150 | UKW1H470MED |
| | 100 | 8×11.5 | 0.12 | 150 | 50 | 250 | UKW1H101MPD |
| | 220 | 10×12.5 | 0.12 | 330 | 110 | 410 | UKW1H221MPD |
| | 330 | 10×16 | 0.12 | 495 | 165 | 570 | UKW1H331MPD |
| | 470 | 12.5×20 | 0.12 | 705 | 235 | 760 | UKW1H471MHD |
| | 1000 | 12.5×25 | 0.12 | 1500 | 500 | 1300 | UKW1H102MHD |
| | 2200 | 16×35.5 | 0.14 | 3300 | 1100 | 2090 | UKW1H222MHD |
| | 3300 | 18×35.5 | 0.16 | 4950 | 1650 | 2360 | UKW1H332MHD |
| | 4700 | 20×40 | 0.18 | 7050 | 2350 | 2900 | UKW1H472MRD |
| | 6800 | 22×50 | 0.22 | 10200 | 3400 | 3500 | UKW1H682MRD |
| 10000 | 25×50 | 0.30 | 15000 | 5000 | 4000 | UKW1H103MRD | |

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■ Dimensions

| Rated Voltage (V) (code) | Rated Capacitance (μ F) | Case Size ϕ D×L (mm) | tan δ | Leakage Current (μ A) | | Rated Ripple (mArms) (85°C/120Hz) | Part Number |
|--------------------------------|---------------------------------|------------------------------|--------------|-------------------------------|----------------------------|---|-------------|
| | | | | at 20°C after 1 minute | at 20°C after 2 minutes | | |
| 63 (1J) | 10 | 5×11 | 0.10 | 18.9 | 6.3 | 70 | UKW1J100MDD |
| | 22 | 5×11 | 0.10 | 41.58 | 13.86 | 100 | UKW1J220MDD |
| | 33 | 6.3×11 | 0.10 | 62.37 | 20.79 | 140 | UKW1J330MED |
| | 47 | 6.3×11 | 0.10 | 88.83 | 29.61 | 165 | UKW1J470MED |
| | 100 | 10×12.5 | 0.10 | 189 | 63 | 300 | UKW1J101MPD |
| | 220 | 10×16 | 0.10 | 415.8 | 138.6 | 470 | UKW1J221MPD |
| | 330 | 10×20 | 0.10 | 623.7 | 207.9 | 650 | UKW1J331MPD |
| | 470 | 12.5×20 | 0.10 | 888.3 | 296.1 | 880 | UKW1J471MHD |
| | 1000 | 16×25 | 0.10 | 1890 | 630 | 1300 | UKW1J102MHD |
| | 2200 | 18×35.5 | 0.12 | 4158 | 1386 | 2200 | UKW1J222MHD |
| | 3300 | 20×40 | 0.14 | 6237 | 2079 | 2700 | UKW1J332MRD |
| | 4700 | 22×50 | 0.16 | 8883 | 2961 | 3400 | UKW1J472MRD |
| 6800 | 25×50 | 0.20 | 12852 | 4284 | 3500 | UKW1J682MRD | |
| 100 (2A) | 2.2 | 5×11 | 0.08 | 6.6 | 3 | 30 | UKW2A2R2MDD |
| | 3.3 | 5×11 | 0.08 | 9.9 | 3.3 | 40 | UKW2A3R3MDD |
| | 4.7 | 5×11 | 0.08 | 14.1 | 4.7 | 45 | UKW2A4R7MDD |
| | 10 | 6.3×11 | 0.08 | 30 | 10 | 75 | UKW2A100MED |
| | 22 | 6.3×11 | 0.08 | 66 | 22 | 120 | UKW2A220MED |
| | 33 | 8×11.5 | 0.08 | 99 | 33 | 160 | UKW2A330MPD |
| | 47 | 10×12.5 | 0.08 | 141 | 47 | 210 | UKW2A470MPD |
| | 100 | 10×20 | 0.08 | 300 | 100 | 350 | UKW2A101MPD |
| | 220 | 12.5×25 | 0.08 | 660 | 220 | 600 | UKW2A221MHD |
| | 330 | 12.5×25 | 0.08 | 990 | 330 | 750 | UKW2A331MHD |
| | 470 | 16×25 | 0.08 | 1410 | 470 | 1000 | UKW2A471MHD |
| | 1000 | 18×40 | 0.08 | 3000 | 1000 | 1370 | UKW2A102MHD |
| | 2200 | 22×50 | 0.10 | 6600 | 2200 | 2400 | UKW2A222MRD |
| 3300 | 25×50 | 0.12 | 9900 | 3300 | 2900 | UKW2A332MRD | |

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.

Mouser Electronics

Authorized Distributor

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