# ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

# URZ

Compact & Low-Profile Sized,
Wide Temperature Range

Smaller

Anti-Solvent Feature (Through 100V only)

- Wide temperature range and same size as URS.
- Compliant to the RoHS directive (2011/65/EU,(EU)2015/863).




URZ

High Temperature

URS

## ■Specifications

| Item | Performance Characteristics |
|---|---|
| Category Temperature Range | −55 to +105˚C (6.3 to 100V) , −40 to +105˚C (160 to 400V) |
| Rated Voltage Range | 6.3 to 400V |
| Rated Capacitance Range | 10 to 10000μF |
| Capacitance Tolerance | ±20% at 120Hz, 20˚C |
| Leakage Current | Rated voltage (V) \| 6.3 to 100: After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV. After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV. \| 160 to 400: After 1 minute's application of rated voltage at 20°C, I = 0.04CV+100 (μA) or less |
| Tangent of loss angle (tan δ) | For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF. Measurement frequency : 120Hz at 20˚C |

| Rated voltage (V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250 | 400 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| tan δ (MAX.) | 0.28 | 0.24 | 0.20 | 0.16 | 0.14 | 0.12 | 0.10 | 0.08 | 0.20 | 0.20 | 0.20 | 0.25 |

Stability at Low Temperature — Measurement frequency : 120Hz

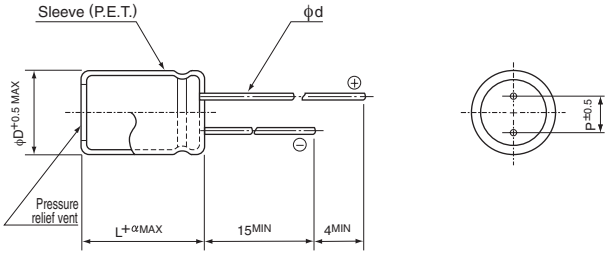
| Rated voltage (V) | | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250 | 400 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Impedance ratio (MAX.) | Z−25˚C / Z+20˚C | 5 | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 6 |
| | Z−40˚C / Z+20˚C | 10 | 8 | 6 | 4 | 3 | 3 | 3 | 3 | 4 | 4 | 6 | 10 |

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 105°C.

| | |
|---|---|
| Capacitance change | Within ±20% of the initial capacitance value |
| tan δ | 200% 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 105˚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 white color letter on black sleeve. |

## ■Radial Lead Type




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

(mm)

| φD | 10 | 12.5 | 16 | 18 | 20 |
|---|---|---|---|---|---|
| P | 5.0 | 5.0 | 7.5 | 7.5 | 10.0 |
| φd | 0.6 | 0.6 | 0.8 | 0.8 | 1.0 |

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

## Type numbering system (Example : 10V 1000μF)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| U | R | Z | 1 | A | 1 | 0 | 2 | M | P | D | |

Size code
Configuration ※
Capacitance tolerance (±20%)
Rated capacitance (1000μF)
Rated voltage (10V)
Series name
Type

※Configuration

| φ D | Pb-free leadwire Pb-free PET sleeve |
|---|---|
| 10 | PD |
| 12.5 to 18 | HD |
| 20 | RD |

## ●Frequency coefficient of rated ripple current

| V | Cap.(μF) \ Frequency | 50Hz | 120Hz | 300Hz | 1 kHz | 10kHz or more |
|---|---|---|---|---|---|---|
| 6.3 to 100 | 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 |
| 160 to 400 | 10 to 220 | 0.80 | 1.00 | 1.25 | 1.40 | 1.60 |

●Dimension table in next page.

# URZ

## ■ Dimensions

| Rated Voltage (V) (code) | Rated Capacitance (μF) | Case Size φD×L(mm) | tan δ | Leakage Current (μA) | | Rated Ripple (mArms) (105℃/120Hz) | Part Number |
|---|---|---|---|---|---|---|---|
| | | | | at 20℃ after 1 minute | at 20℃ after 2 minutes | | |
| 6.3 (0J) | 2200 | 12.5×15 | 0.30 | 415.8 | 138.6 | 635 | URZ0J222MHD |
| | 3300 | 16×15 | 0.32 | 623.7 | 207.9 | 860 | URZ0J332MHD |
| | 4700 | 16×15 | 0.34 | 888.3 | 296.1 | 1010 | URZ0J472MHD |
| | 6800 | 18×15 | 0.38 | 1285.2 | 428.4 | 1200 | URZ0J682MHD |
| | 10000 | 18×20 | 0.46 | 1890 | 630 | 1450 | URZ0J103MHD |
| 10 (1A) | 1000 | 10×12.5 | 0.24 | 300 | 100 | 450 | URZ1A102MPD |
| | 2200 | 12.5×15 | 0.26 | 660 | 220 | 690 | URZ1A222MHD |
| | 3300 | 16×15 | 0.28 | 990 | 330 | 940 | URZ1A332MHD |
| | 4700 | 18×15 | 0.30 | 1410 | 470 | 1120 | URZ1A472MHD |
| | 6800 | 18×20 | 0.34 | 2040 | 680 | 1330 | URZ1A682MHD |
| | 10000 | 18×25 | 0.42 | 3000 | 1000 | 1700 | URZ1A103MHD |
| 16 (1C) | 1000 | 12.5×12.5 | 0.20 | 480 | 160 | 520 | URZ1C102MHD |
| | 2200 | 16×15 | 0.22 | 1056 | 352 | 830 | URZ1C222MHD |
| | 3300 | 18×15 | 0.24 | 1584 | 528 | 1050 | URZ1C332MHD |
| | 4700 | 18×20 | 0.26 | 2256 | 752 | 1260 | URZ1C472MHD |
| | 6800 | 18×25 | 0.30 | 3264 | 1088 | 1560 | URZ1C682MHD |
| 25 (1E) | 470 | 10×12.5 | 0.16 | 352.5 | 117.5 | 370 | URZ1E471MPD |
| | 1000 | 12.5×15 | 0.16 | 750 | 250 | 590 | URZ1E102MHD |
| | 2200 | 18×15 | 0.18 | 1650 | 550 | 970 | URZ1E222MHD |
| | 3300 | 18×20 | 0.20 | 2475 | 825 | 1220 | URZ1E332MHD |
| | 4700 | 18×25 | 0.22 | 3525 | 1175 | 1470 | URZ1E472MHD |
| 35 (1V) | 330 | 10×12.5 | 0.14 | 346.5 | 115.5 | 340 | URZ1V331MPD |
| | 470 | 12.5×12.5 | 0.14 | 493.5 | 164.5 | 420 | URZ1V471MHD |
| | 1000 | 16×15 | 0.14 | 1050 | 350 | 720 | URZ1V102MHD |
| | 2200 | 18×20 | 0.16 | 2310 | 770 | 1110 | URZ1V222MHD |
| | 3300 | 20×25 | 0.18 | 3465 | 1155 | 1430 | URZ1V332MRD |
| 50 (1H) | 220 | 10×12.5 | 0.12 | 330 | 110 | 290 | URZ1H221MPD |
| | 330 | 12.5×12.5 | 0.12 | 495 | 165 | 370 | URZ1H331MHD |
| | 470 | 16×15 | 0.12 | 705 | 235 | 540 | URZ1H471MHD |
| | 1000 | 18×20 | 0.12 | 1500 | 500 | 830 | URZ1H102MHD |
| | 2200 | 20×25 | 0.14 | 3300 | 1100 | 1250 | URZ1H222MRD |
| 63 (1J) | 220 | 12.5×12.5 | 0.10 | 415.8 | 138.6 | 335 | URZ1J221MHD |
| | 330 | 12.5×15 | 0.10 | 623.7 | 207.9 | 510 | URZ1J331MHD |
| | 470 | 16×15 | 0.10 | 888.3 | 296.1 | 640 | URZ1J471MHD |
| 100 (2A) | 47 | 10×12.5 | 0.08 | 141 | 47 | 165 | URZ2A470MPD |
| | 100 | 12.5×15 | 0.08 | 300 | 100 | 265 | URZ2A101MHD |
| | 220 | 16×15 | 0.08 | 660 | 220 | 440 | URZ2A221MHD |
| | 330 | 18×15 | 0.08 | 990 | 330 | 540 | URZ2A331MHD |
| 160 (2C) | 47 | 16×15 | 0.20 | 400.8 | — | 300 | URZ2C470MHD |
| | 68 | 18×15 | 0.20 | 535.2 | — | 350 | URZ2C680MHD |
| | 68 | 16×20 | 0.20 | 535.2 | — | 350 | URZ2C680MHD6 |

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.

# URZ

## ■ Dimensions

| Rated Voltage (V) (code) | Rated Capacitance (μF) | Case Size φD×L (mm) | tan δ | Leakage Current (μA) | | Rated Ripple (mArms) (105℃/120Hz) | Part Number |
|---|---|---|---|---|---|---|---|
| | | | | at 20℃ after 1 minute | at 20℃ after 2 minutes | | |
| 160 (2C) | 100 | 18×20 | 0.20 | 740 | — | 420 | URZ2C101MHD |
| | 100 | 20×15 | 0.20 | 740 | — | 420 | URZ2C101MRD6 |
| | 150 | 18×25 | 0.20 | 1060 | — | 510 | URZ2C151MHD |
| | 150 | 20×20 | 0.20 | 1060 | — | 510 | URZ2C151MRD6 |
| | 220 | 20×25 | 0.20 | 1508 | — | 550 | URZ2C221MRD |
| 200 (2D) | 33 | 16×15 | 0.20 | 364 | — | 250 | URZ2D330MHD |
| | 47 | 18×15 | 0.20 | 476 | — | 300 | URZ2D470MHD |
| | 47 | 16×20 | 0.20 | 476 | — | 300 | URZ2D470MHD6 |
| | 68 | 18×20 | 0.20 | 644 | — | 350 | URZ2D680MHD |
| | 68 | 20×15 | 0.20 | 644 | — | 350 | URZ2D680MRD6 |
| | 100 | 18×25 | 0.20 | 900 | — | 420 | URZ2D101MHD |
| | 100 | 20×20 | 0.20 | 900 | — | 420 | URZ2D101MRD6 |
| | 150 | 18×25 | 0.20 | 1300 | — | 510 | URZ2D151MHD |
| 250 (2E) | 22 | 16×15 | 0.20 | 320 | — | 200 | URZ2E220MHD |
| | 33 | 18×15 | 0.20 | 430 | — | 250 | URZ2E330MHD |
| | 33 | 16×20 | 0.20 | 430 | — | 250 | URZ2E330MHD6 |
| | 47 | 18×20 | 0.20 | 570 | — | 300 | URZ2E470MHD |
| | 47 | 20×15 | 0.20 | 570 | — | 300 | URZ2E470MRD6 |
| | 68 | 18×20 | 0.20 | 780 | — | 350 | URZ2E680MHD |
| | 100 | 18×25 | 0.20 | 1100 | — | 420 | URZ2E101MHD |
| 400 (2G) | 10 | 16×15 | 0.25 | 260 | — | 100 | URZ2G100MHD |
| | 22 | 18×15 | 0.25 | 452 | — | 200 | URZ2G220MHD |
| | 22 | 16×20 | 0.25 | 452 | — | 200 | URZ2G220MHD6 |
| | 33 | 18×20 | 0.25 | 628 | — | 250 | URZ2G330MHD |
| | 47 | 18×25 | 0.25 | 852 | — | 300 | URZ2G470MHD |
| | 47 | 20×20 | 0.25 | 852 | — | 300 | URZ2G470MRD6 |
| | 68 | 20×25 | 0.25 | 1188 | — | 350 | URZ2G680MRD |

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.