

# URY

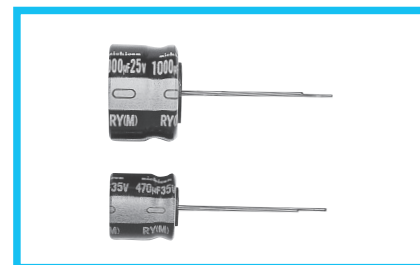
12.5mmL Wide Temperature Range



Smaller



Anti-Solvent  
Feature  
(Through  
100V only)



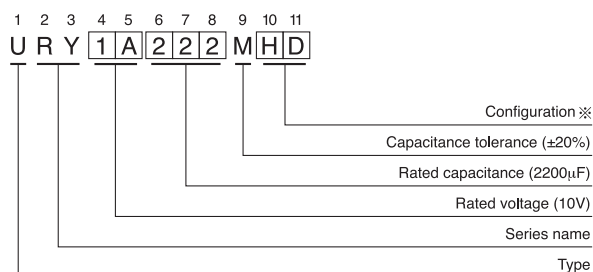
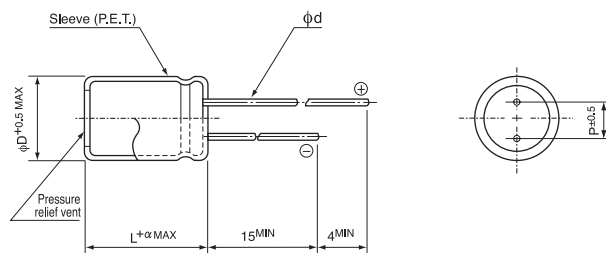
- 12.5mmL height.
- Compliant to the RoHS directive (2011/65/EU,(EU)2015/863).

## Specifications

| Item                          | Performance Characteristics                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                        |      |      |      |      |                    |                                                                                    |                                                   |            |            |     |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|------|--------------------|------------------------------------------------------------------------------------|---------------------------------------------------|------------|------------|-----|
| Category Temperature Range    | -55 to +105°C (6.3 to 100V), -40 to +105°C (160 to 400V), -25 to +105°C (450V)                                                                                                                                                          |                                                                                                                                                                                                                                                                        |      |      |      |      |                    |                                                                                    |                                                   |            |            |     |
| Rated Voltage Range           | 6.3 to 450V                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                        |      |      |      |      |                    |                                                                                    |                                                   |            |            |     |
| Rated Capacitance Range       | 6.8 to 4700μF                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                        |      |      |      |      |                    |                                                                                    |                                                   |            |            |     |
| Capacitance Tolerance         | ± 20% at 120Hz, 20°C                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                        |      |      |      |      |                    |                                                                                    |                                                   |            |            |     |
| Leakage Current               | Rated voltage (V)                                                                                                                                                                                                                       | 6.3 to 100                                                                                                                                                                                                                                                             |      |      |      |      |                    | 160 to 450                                                                         |                                                   |            |            |     |
|                               | _____                                                                                                                                                                                                                                   | After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV or 4 (μA), whichever is greater.<br><br>After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3 (μA), whichever is greater. |      |      |      |      |                    | 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 to 350 | 400 to 450 |     |
|                               | tan δ (MAX.)                                                                                                                                                                                                                            | 0.28                                                                                                                                                                                                                                                                   | 0.24 | 0.20 | 0.16 | 0.14 | 0.12               | 0.10                                                                               | 0.08                                              | 0.20       | 0.25       |     |
| Stability at Low Temperature  | Measurement frequency : 120Hz                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                        |      |      |      |      |                    |                                                                                    |                                                   |            |            |     |
|                               | Rated voltage (V)                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                        | 6.3  | 10   | 16   | 25   | 35 to 50           | 63 to 100                                                                          | 160 to 200                                        | 250 to 350 | 400        | 450 |
|                               | Impedance ratio (MAX.)                                                                                                                                                                                                                  | Z-25°C / Z+20°C                                                                                                                                                                                                                                                        | 5    | 4    | 3    | 2    | 2                  | 2                                                                                  | 3                                                 | 4          | 6          | 15  |
|                               |                                                                                                                                                                                                                                         | Z-40°C / Z+20°C                                                                                                                                                                                                                                                        | 10   | 8    | 6    | 4    | 3                  | 3                                                                                  | 4                                                 | 8          | 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 2000 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

Type numbering system (Example : 10V 2200µF)



|          |                    |     |
|----------|--------------------|-----|
| $\alpha$ | $(\phi D < 20)$    | 1.5 |
|          | $(\phi D \geq 20)$ | 2.0 |

| (mm) | φD  | 12.5 | 16  | 18   | 20   | 22   | 25  |
|------|-----|------|-----|------|------|------|-----|
| P    | 5.0 | 7.5  | 7.5 | 10.0 | 10.0 | 12.5 |     |
| φd   | 0.6 | 0.8  | 0.8 | 1.0  | 1.0  | 1.0  | 1.0 |

※ Configuration

| φ D        | Pb-free leadwire<br>Pb-free PET sleeve |
|------------|----------------------------------------|
| 12.5 to 18 | HD                                     |
| 20 to 25   | RD                                     |

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

## Frequency coefficient of rated ripple current

| V          | Cap.(µF)     | Frequency | 50Hz | 120Hz | 300Hz | 1 kHz | 10 kHz or more |
|------------|--------------|-----------|------|-------|-------|-------|----------------|
| 6.3 to 100 | 100 to 680   |           | 0.80 | 1.00  | 1.23  | 1.34  | 1.50           |
|            | 1000 to 4700 |           | 0.85 | 1.00  | 1.10  | 1.13  | 1.15           |
| 160 to 450 | 6.8 to 100   |           | 0.80 | 1.00  | 1.25  | 1.40  | 1.60           |

• Dimension table in next page.

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## ■ Dimensions

| Rated Voltage<br>(V)<br>(code) | Rated Capacitance<br>(μF) | Case Size<br>φD×L (mm) | tan δ | Leakage Current<br>(μA)   |                            | Rated Ripple<br>(mA <sub>rms</sub> )<br>(105°C/120Hz) | Part Number |
|--------------------------------|---------------------------|------------------------|-------|---------------------------|----------------------------|-------------------------------------------------------|-------------|
|                                |                           |                        |       | at 20°C after<br>1 minute | at 20°C after<br>2 minutes |                                                       |             |
| 6.3<br>(0J)                    | 2200                      | 12.5×12.5              | 0.30  | 415.8                     | 138.6                      | 580                                                   | URY0J222MHD |
|                                | 3300                      | 18×12.5                | 0.32  | 623.7                     | 207.9                      | 730                                                   | URY0J332MHD |
|                                | 4700                      | 25×12.5                | 0.34  | 888.3                     | 296.1                      | 1200                                                  | URY0J472MRD |
| 10<br>(1A)                     | 2200                      | 18×12.5                | 0.26  | 660                       | 220                        | 820                                                   | URY1A222MHD |
|                                | 3300                      | 22×12.5                | 0.28  | 990                       | 330                        | 1030                                                  | URY1A332MRD |
| 16<br>(1C)                     | 1000                      | 12.5×12.5              | 0.20  | 480                       | 160                        | 520                                                   | URY1C102MHD |
|                                | 2200                      | 25×12.5                | 0.22  | 1056                      | 352                        | 1000                                                  | URY1C222MRD |
| 25<br>(1E)                     | 680                       | 12.5×12.5              | 0.16  | 510                       | 170                        | 500                                                   | URY1E681MHD |
|                                | 1000                      | 18×12.5                | 0.16  | 750                       | 250                        | 770                                                   | URY1E102MHD |
|                                | 2200                      | 25×12.5                | 0.18  | 1650                      | 550                        | 1170                                                  | URY1E222MRD |
| 35<br>(1V)                     | 470                       | 12.5×12.5              | 0.14  | 493.5                     | 164.5                      | 420                                                   | URY1V471MHD |
|                                | 680                       | 18×12.5                | 0.14  | 714                       | 238                        | 610                                                   | URY1V681MHD |
|                                | 1000                      | 22×12.5                | 0.14  | 1050                      | 350                        | 810                                                   | URY1V102MRD |
| 50<br>(1H)                     | 330                       | 12.5×12.5              | 0.12  | 495                       | 165                        | 450                                                   | URY1H331MHD |
|                                | 470                       | 20×12.5                | 0.12  | 705                       | 235                        | 540                                                   | URY1H471MRD |
|                                | 680                       | 25×12.5                | 0.12  | 1020                      | 340                        | 700                                                   | URY1H681MRD |
| 63<br>(1J)                     | 220                       | 12.5×12.5              | 0.10  | 415.8                     | 138.6                      | 400                                                   | URY1J221MHD |
|                                | 330                       | 18×12.5                | 0.10  | 623.7                     | 207.9                      | 550                                                   | URY1J331MHD |
|                                | 470                       | 22×12.5                | 0.10  | 888.3                     | 296.1                      | 610                                                   | URY1J471MRD |
| 100<br>(2A)                    | 100                       | 12.5×12.5              | 0.08  | 300                       | 100                        | 230                                                   | URY2A101MHD |
|                                | 220                       | 22×12.5                | 0.08  | 660                       | 220                        | 400                                                   | URY2A221MRD |
| 160<br>(2C)                    | 33                        | 12.5×12.5              | 0.20  | 311.2                     | —                          | 130                                                   | URY2C330MHD |
|                                | 47                        | 16×12.5                | 0.20  | 400.8                     | —                          | 210                                                   | URY2C470MHD |
|                                | 68                        | 20×12.5                | 0.20  | 535.2                     | —                          | 280                                                   | URY2C680MRD |
|                                | 100                       | 25×12.5                | 0.20  | 740                       | —                          | 360                                                   | URY2C101MRD |
| 200<br>(2D)                    | 22                        | 12.5×12.5              | 0.20  | 276                       | —                          | 110                                                   | URY2D220MHD |
|                                | 33                        | 16×12.5                | 0.20  | 364                       | —                          | 170                                                   | URY2D330MHD |
|                                | 47                        | 18×12.5                | 0.20  | 476                       | —                          | 230                                                   | URY2D470MHD |
|                                | 68                        | 25×12.5                | 0.20  | 644                       | —                          | 310                                                   | URY2D680MRD |
| 250<br>(2E)                    | 22                        | 16×12.5                | 0.20  | 320                       | —                          | 130                                                   | URY2E220MHD |
|                                | 33                        | 18×12.5                | 0.20  | 430                       | —                          | 170                                                   | URY2E330MHD |
|                                | 47                        | 22×12.5                | 0.20  | 570                       | —                          | 190                                                   | URY2E470MRD |
| 315<br>(2F)                    | 10                        | 12.5×12.5              | 0.20  | 226                       | —                          | 70                                                    | URY2F100MHD |
|                                | 22                        | 16×12.5                | 0.20  | 377.2                     | —                          | 85                                                    | URY2F220MHD |
|                                | 33                        | 20×12.5                | 0.20  | 515.8                     | —                          | 120                                                   | URY2F330MRD |
|                                | 47                        | 25×12.5                | 0.20  | 692.2                     | —                          | 160                                                   | URY2F470MRD |
| 350<br>(2V)                    | 10                        | 16×12.5                | 0.20  | 240                       | —                          | 75                                                    | URY2V100MHD |
|                                | 22                        | 18×12.5                | 0.20  | 408                       | —                          | 90                                                    | URY2V220MHD |
|                                | 33                        | 25×12.5                | 0.20  | 562                       | —                          | 140                                                   | URY2V330MRD |
| 400<br>(2G)                    | 10                        | 16×12.5                | 0.25  | 260                       | —                          | 65                                                    | URY2G100MHD |
|                                | 22                        | 20×12.5                | 0.25  | 452                       | —                          | 150                                                   | URY2G220MRD |
|                                | 33                        | 25×12.5                | 0.25  | 628                       | —                          | 200                                                   | URY2G330MRD |
| 450<br>(2W)                    | 6.8                       | 12.5×12.5              | 0.25  | 222.4                     | —                          | 38                                                    | URY2W6R8MHD |
|                                | 10                        | 16×12.5                | 0.25  | 280                       | —                          | 47                                                    | URY2W100MHD |
|                                | 22                        | 25×12.5                | 0.25  | 496                       | —                          | 85                                                    | URY2W220MRD |

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.