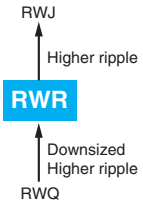
# RWR Series

- Downsized and high ripple current from RWQ series
- Endurance with ripple current : 2,000 hours at 85℃
- RoHS2 Compliant

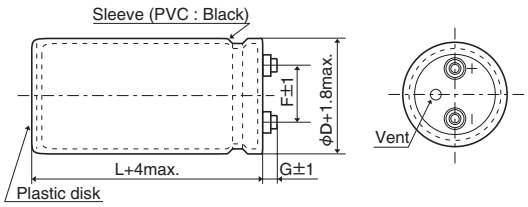



## ◆SPECIFICATIONS

| Items | Characteristics | |
|---|---|---|
| Category Temperature Range | -25 to +85℃ | |
| Rated Voltage Range | 350 to 450$V_{dc}$ | |
| Capacitance Tolerance | ±20% (M) | (at 20℃, 120Hz) |
| Leakage Current | I=0.02CV or 5mA, whichever is smaller.<br>Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) | (at 20℃ after 5 minutes) |
| Dissipation Factor (tan δ ) | 0.25 max. | (at 20℃, 120Hz) |
| Low Temperature Characteristics | Capacitance change C(-25℃)/C(+20℃)≧0.7 | (at 120Hz) |
| Insulation Resistance | When measured between the terminals that are connected to each other and to the mounting clamp on the insulating sleeve covering the case by using an insulation resistance meter of 500$V_{dc}$, the insulation resistance shall not be less than 100MΩ. | |
| Insulation Withstanding Voltage | When a voltage of 2,000$V_{ac}$ is applied for 1 minute between the terminals that are connected to each other and to the mounting clamp on the insulating sleeve covering the case, there shall not be electrical damage. | |
| Endurance | The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 2,000 hours at 85℃. | |
| | Capacitance change | ≦±20% of the initial value |
| | D.F. (tan δ ) | ≦300% of the initial specified value |
| | Leakage current | ≦The initial specified value |
| Useful life | The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 5,000 hours at 85℃. | |
| | Capacitance change | ≦±30% of the initial value |
| | D.F. (tan δ ) | ≦300% of the initial specified value |
| | Leakage current | ≦The initial specified value |
| | Failure rate | ≦1% |
| Shelf Life | The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 500 hours at 85℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4. | |
| | Capacitance change | ≦±20% of the initial value |
| | D.F. (tan δ ) | ≦300% of the initial specified value |
| | Leakage current | ≦The initial specified value |

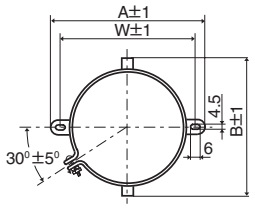
## ◆DIMENSIONS (Screw-Mount) [mm]

●Terminal Code : LG



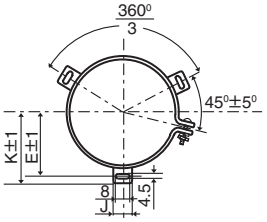

ϕ63.5, ϕ76.2 : G=6
ϕ89 : G=4

●Mounting Clamp Code : B




| ϕD | A | B | W | F |
|---|---|---|---|---|
| 63.5 | 90.0 | 76.0 | 80.0 | 28.0 |
| 76.2 | 104.5 | 90.0 | 93.5 | 31.5 |

●Mounting Clamp Code : C




| ϕD | E | K | F | J |
|---|---|---|---|---|
| 63.5 | 38.1 | 43.5 | 28.0 | 14.0 |
| 76.2 | 44.5 | 50.0 | 31.5 | 14.0 |
| 89 | 50.8 | 56.5 | 31.5 | 16.0 |

<Screw specifcations>
Plus hexagon-headed screw :M5×0.8×10
Maximum screw tightening torque :3.23Nm
* The screw and the mounting clamp are separately supplied and not attached to the product.

## ◆PART NUMBERING SYSTEM

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E | R | W | R | | | | L | G | | | | | M | | | | U |

Supplement code
Size code
Capacitance tolerance code
Capacitance code (ex. 6,800μF:682, 12,000μF:123)
Mounting clamp code (N, B, C)
Terminal code
Voltage code (ex. 350V:351, 400V:401)
Series code
Category

Please refer to "Product code guide (screw-mount terminal type)"

Product specifications in this catalog are subject to change without notice.Request our product specifications before purchase and/or use. Please use our products based on the information contained in this catalog and product specifications.

# RWR Series

## ◆STANDARD RATINGS

| WV ($V_{dc}$) | Cap (μF) | Case size φD×L(mm) | tan δ | Rated ripple current (Arms/ 85℃, 120Hz) | Part No. |
|---|---|---|---|---|---|
| 350 | 3,900 | 63.5 × 100 | 0.25 | 13.7 | ERWR351LGC392MDA0U |
| | 4,700 | 63.5 × 100 | 0.25 | 15.1 | ERWR351LGC472MDA0U |
| | 5,600 | 63.5 × 115 | 0.25 | 17.5 | ERWR351LGC562MDB5U |
| | 5,600 | 76.2 × 100 | 0.25 | 18.2 | ERWR351LGC562MEA0U |
| | 6,800 | 76.2 × 100 | 0.25 | 20.1 | ERWR351LGC682MEA0U |
| | 8,200 | 76.2 × 115 | 0.25 | 23.4 | ERWR351LGC822MEB5U |
| | 10,000 | 76.2 × 135 | 0.25 | 27.7 | ERWR351LGC103MED5U |
| | 12,000 | 89 × 125 | 0.25 | 28.9 | ERWR351LGC123MFC5U |
| | 15,000 | 89 × 150 | 0.25 | 34.9 | ERWR351LGC153MFF0U |
| 400 | 3,300 | 63.5 × 100 | 0.25 | 12.6 | ERWR401LGC332MDA0U |
| | 3,900 | 63.5 × 100 | 0.25 | 13.7 | ERWR401LGC392MDA0U |
| | 4,700 | 63.5 × 115 | 0.25 | 16.0 | ERWR401LGC472MDB5U |
| | 4,700 | 76.2 × 100 | 0.25 | 16.7 | ERWR401LGC472MEA0U |
| | 5,600 | 63.5 × 130 | 0.25 | 18.4 | ERWR401LGC562MDD0U |

| WV ($V_{dc}$) | Cap (μF) | Case size φD×L(mm) | tan δ | Rated ripple current (Arms/ 85℃, 120Hz) | Part No. |
|---|---|---|---|---|---|
| 400 | 6,800 | 76.2 × 110 | 0.25 | 20.9 | ERWR401LGC682MEB0U |
| | 8,200 | 76.2 × 130 | 0.25 | 24.7 | ERWR401LGC822MED0U |
| | 10,000 | 89 × 125 | 0.25 | 26.4 | ERWR401LGC103MFC5U |
| | 12,000 | 89 × 145 | 0.25 | 30.8 | ERWR401LGC123MFE5U |
| 450 | 2,700 | 63.5 × 100 | 0.25 | 11.4 | ERWR451LGC272MDA0U |
| | 3,300 | 63.5 × 105 | 0.25 | 12.9 | ERWR451LGC332MDA5U |
| | 3,900 | 63.5 × 115 | 0.25 | 14.6 | ERWR451LGC392MDB5U |
| | 3,900 | 76.2 × 100 | 0.25 | 15.2 | ERWR451LGC392MEA0U |
| | 4,700 | 63.5 × 135 | 0.25 | 17.2 | ERWR451LGC472MDD5U |
| | 4,700 | 76.2 × 105 | 0.25 | 17.0 | ERWR451LGC472MEA5U |
| | 5,600 | 76.2 × 115 | 0.25 | 19.3 | ERWR451LGC562MEB5U |
| | 6,800 | 76.2 × 135 | 0.25 | 22.8 | ERWR451LGC682MED5U |
| | 8,200 | 89 × 125 | 0.25 | 23.9 | ERWR451LGC822MFC5U |
| | 10,000 | 89 × 150 | 0.25 | 28.5 | ERWR451LGC103MFF0U |

## ◆RATED RIPPLE CURRENT MULTIPLIERS

❶Frequency Multipliers

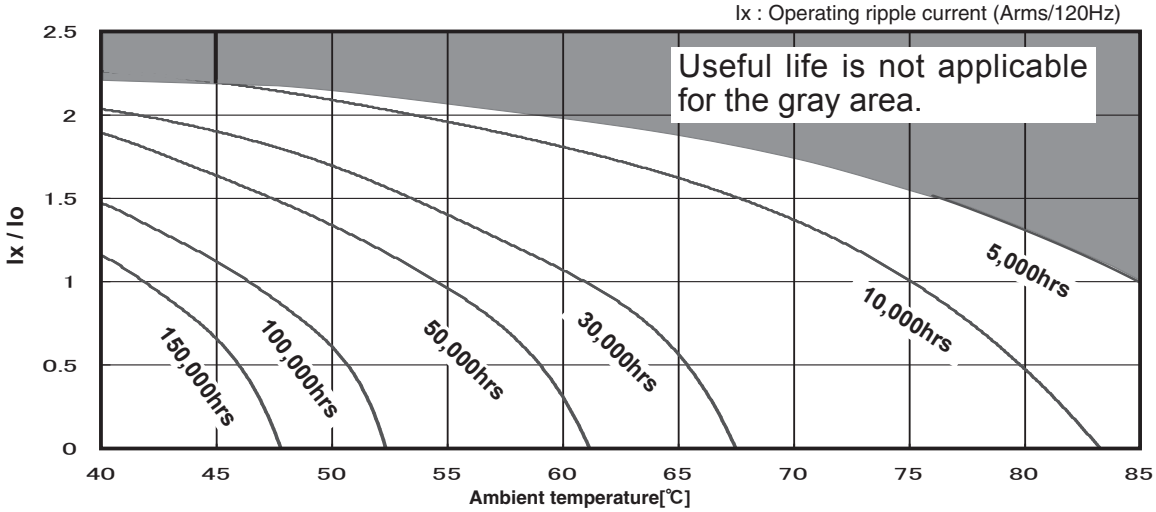
| Frequency (Hz) | 50 | 120 | 300 | 1k | 3k |
|---|---|---|---|---|---|
| Coefficient | 0.8 | 1.0 | 1.1 | 1.3 | 1.4 |

The deterioration of aluminum electrolytic capacitors accelerates their life due to the internal heating produced by ripple current. For details, refer to Section "5-3 Ripple Current Effect on Lifetime" in the catalog, Technical Note.
Also, for the RWR series capacitors, using them at operating voltage less than their rated voltage can extend their lifetime. For details, please contact a representative of Nippon Chemi-Con.

## ◆USEFUL LIFE

Useful life depending on the ambient temperature Tx under ripple current operating conditions

Io : Rated ripple current (Arms/85℃ ,120Hz)
Ix : Operating ripple current (Arms/120Hz)




## ◆Warning !

Useful life shall indicate the end of the life time without exceeding the specified failure rate. It's generally known that Aluminum Electrolytic Capacitors have wear-out failure mode with gradual deteriorate of the electrical parameters and should have large number of the failure rate at the end of life. The useful life time is specified by a certain failure rate.
It's not a guaranteed specification.

Generally the maximum life time is 15 years (131,000hours) considering sealing material deteriorate. When a longer life time is required for your application, please consult us.

Product specifications in this catalog are subject to change without notice.Request our product specifications before purchase and/or use. Please use our products based on the information contained in this catalog and product specifications.

■ Always read "Notes on Use" before using the product in order to enable you to use the product correctly and prevent any faults and accidents from occurring.

■ Request the Product Specification on the product of NIPPON CHEMI-CON CORPORATION to refer to it as well as this brochure prior to the order of the products. Some specific notes on use of the ordered product may be described in the specifications.

■ The products listed in this catalog are designed and manufactured for general electronics equipment use and are not intended for use in applications that can adversely affect human life; where the malfunction of equipment may cause damage to life or property. In addition, our products are not intended to be used in specific applications that may cause a major social impact. Please consult with us in advance of usage of our products in the following listed applications. ① Aerospace equipment ② Power generation equipment such as thermal power, nuclear power etc. ③ Medical equipment ④ Transport equipment (automobiles, trains, ships, etc.) ⑤ Transportation control equipment ⑥ Disaster prevention / crime prevention equipment ⑦ Highly publicized information processing equipment ⑧ Submarine equipment ⑨ Other applications that are not considered general-purpose applications.

■ The circuits described as examples in this catalog and the "delivery specifications" are featured in order to show the operations and usage of our products, however, this fact does not guarantee that the circuits are available to function in your equipment systems. We are not in any case responsible for any failures or damage caused by the use of information contained herein. You should examine our products, of which the characteristics are described in the "delivery specifications" and other documents, and determine whether or not our products suit your requirements according to the specifications of your equipment systems. Therefore, you bear final responsibility regarding the use of our products.
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In addition, we have an established system with enhanced traceability, therefore we will limit the applicable lot items for any potential compensation.



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